

SEP
Hybrid Backup
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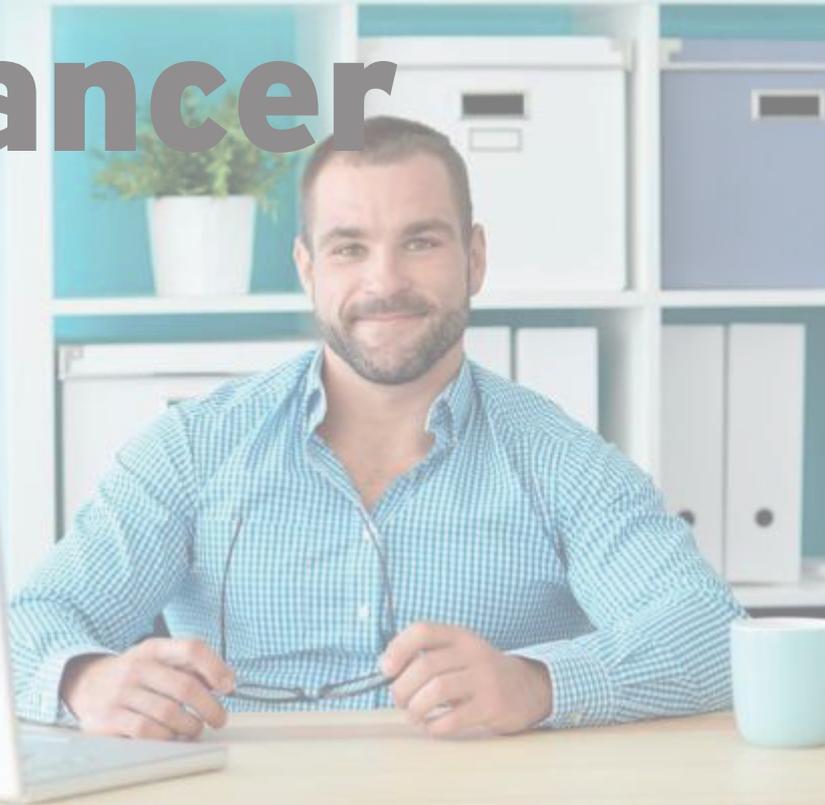
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The comprehensive backup solution SEP **sesam**

Emergency precautions

The German manufacturer SEP has started with its backup software Sesam to finally deal with the tiresome topic of backup copies. What can the software do, how does it work, and where are the problems? Martin Loschwitz / german article translated by SEP



It's a familiar situation: After work, you meet with colleagues for some drinks and discussing the situation in general. As befits people with an affinity for technology there are always technical topics that come up, for example, topics you deal with out of interest and those for which there is no time left in everyday life during the job. Some topics are discussed regularly, others rare and some practically not at all. People who remember the last time out of office speaking with interest and energy about the topic Backup and Recovery of data is a rare species. The backup is unpopular with most admins - have you solved an exciting technical problem, it is one of

the most annoying maintenance tasks, from setup regularly to create backups. On top of that, backups are a very small issue. Often there is no software that can handle all backup tasks in the data center in a simple and effective manner. Different programs, different operating systems and even different versions of the same operating system often require individual solutions instead. It costs time and nerves to build them, which means that the admin has to deal with a whole zoo of different applications. The fact that in times of the cloud everything comes "out of the plugs" and can be restored from Git doesn't help either: Even dynamic cloud setups have payload that needs to be backed up and restored in the event of a disaster.

SEP Sesam [1] takes on the task of dispelling the backup worries of the admins. The program is designed as a

complete solution for data backup, supports different operating systems, mainly found in the professional environment, and after the initial setup it works mostly automatically. Reason enough to get to grips with the solution: Does it deliver what the manufacturer promises?

The architecture of the solution

If you take a look at the architecture SEP Sesam is based on, there are few surprises - like most tools in the backup environment SEP Sesam is based on a client-server architecture. So first the admin rolls out the SEP-Sesam-Server, which acts as central control point. Here practically the entire intelligence is concentrated: When and from which data where a backup is created, is determined only by the sesam server.

The counterpart to the server is the Sesam client. It runs on the systems chosen for backups and collects the data that will be included in the backup. The saving is done in a target storage, for which SEP Sesam supports a whole range of different devices and possibilities.

Basis Java

A key requirement when building a backup software is that it supports different operating systems. After all, the differences between Windows and Linux are big enough per se to make it necessary to maintain two different clients.

The author

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You don't have to deal with different graphic libraries and similar problems. SEP sesam relies on Java to get around this problem: If there is a Java Runtime Environment compatible with SEP sesam on the target system, the software can basically be operated.

Both the sesam server and the command line client (CLI) and the graphical interface offered by the manufacturer for different systems in packaged form. The main beneficiaries of this are the enterprise systems: For SLES corresponding packages are also available as for RHEL and Ubuntu. The same applies to the Windows world: Installation packages are available for all relevant Windows versions including the server-operating systems. The fact that even the server is running on different systems increases the SEP sesam versatility once again (Figure 1).

What can be backed up with SEP sesam

Two parameters play a role in backups: the question of supported systems and applications and the question of storage backends, i.e. the locations where backups can be stored.

What the target applications of backups tackle, SEP sesam is versatile. For a large number of applications you will find prefabricated profiles in the program, and you leave on a RHEL 8 running the SEP-sesam-Client, then detects this its environment and fits SEP sesam on. On the basis of this created inventories can the various backup jobs be created on the next step, so define which data from the servers are belonging to the environment which should be protected by SEP sesam. Thereby the admin deposited different parameters, such as the duration of contracts. The central logic in SEP sesam is as mentioned in the SEP-Server, the real work is done but for the most part on the clients.

If the admin uses the graphical interface of SEP sesam, it provides him with all kinds of information and statistical values concerning data backup.

The job overview, for example, shows the currently active jobs, the jobs that were successful in the last run and the failed tasks, all highlighted in color. Alternatively, the entire functionality is also available in the CLI.

Basically SEP sesam offers several possibilities to include backup targets in the configuration. Of course the software is capable of storing simple files from the respective systems. However, in most cases this should not be the preferred mode: In addition to the core functionality SEP offers modules that extend the program with special functions for certain software solutions.

Databases are important

Databases play a prominent role in this context. They also play a role in modern cloud-native applications, usually even a much more prominent one than in conventional environments. Because in the cloud, MariaDB & Co. are usually the only storage for persistent data.

SEP sesam takes this into account by understanding the syntax of a large number of databases and can store them directly as a backup copy. Nativ supports Oracle, SAP, MS SQL, IBM DB2, Informix as well as the solutions MariaDB (including MySQL) and PostgreSQL, which are widely used in the open source world. Who SEP sesam has in its setup anyway, you don't need additional components like XtraDB backup from Percona - and still get decent, recoverable Backups.

Especially with databases, the problem arises that there is no point in backing up the actual DB files: If you do this while a write is active, you will get an inconsistent and therefore corrupt backup. If, on the other hand, the backup is taken from the database itself, it is consistent (Figure 2).

Support for additional applications

Just like with databases SEP sesam holds it with a number of other applications. Whoever uses MS Exchange or its open source counterpart Open-Xchange configures sesam in such a way that it also backs up autonomously from there.

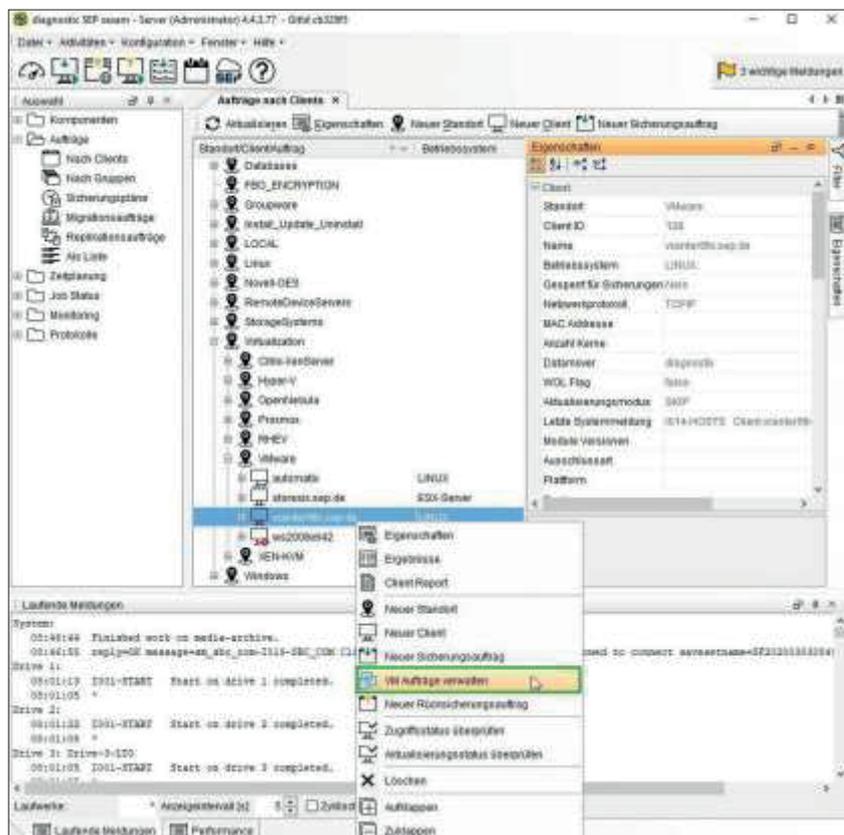


Figure 1: SEP sesam is a comprehensive backup software for different environments

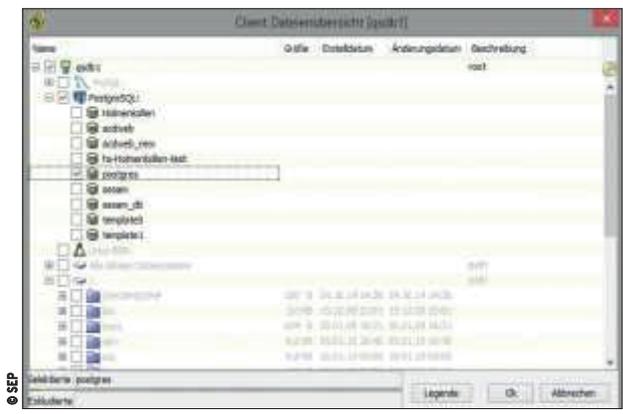


Figure 2: SEP sesam can create native backups from databases, directly from the communication with the respective application.

The same applies to the now widely used Jira software for tracking tasks and the groupware solutions Kopano, Lotus Domino and Sharepoint.

Even fine-grained restores are possible. In a large company, if a user deletes the wrong e-mail from his mail account, it would be completely impractical to retrieve all the employees' mailboxes from the backup. But when restoring SEP sesam offers the option to select individual mailboxes for recovery. So even if a user once clumsily removes data from different programs, this can be fixed with manageable effort.

Virtualization

Virtualization solutions play a key role in the context of modern data centers - virtualization is found virtually everywhere. Accordingly SEP sesam also understands itself to backup virtual machines as a whole, with regard to different virtualizers. To the most frequent applications of these species counts without a doubt VMware vSphere. With a vSphere instance SEP sesam can connect to without any

in the end, the admin the finely graded selection, which Data from vSphere he wants to backup (Figure 3). Features like Instant Recovery also supports sesam and regularly goes far beyond the Scope of the regular on-board resources under Linux out. Come to the kiss of the hand also native Hyper-V hypervisor (Figure 4), XenServer and the associated compatible XCP-ng, RHEV from Red Hat, OpenNebula, Proxmox & even native virtualization with KVM & Qemu under Linux.

All in all SEP sesam not only convinces as a solution for file based backup - de facto this feature is even less important. Rather it is the application specific features that save the admin a lot of work in everyday life.

Where to save

Anyone who plans a backup solution often forgets a very important detail: Creating a backup is one thing, but keeping it safe and providing information about appropriate periods to be maintained a very

SEP sesam deepens here at least not the Admin's worry, because it can store almost anything as a memory target for backup data, whereupon I'll get the data stored somehow. In server built-in hard disks or SSDs are easier to maintain than much more complex tape drives are proving to be the best. Also here however, the developers of SEP have came up with something clever.

Besides the server and the GUI and CLI components SEP sesam includes the Remote Tape Server RTS. This fulfills a kind of intermediate function: It ensures that a host connects to a server for tape drives to back up its data. It would not help anybody if the SEP sesam server would send backups on tapes as a kind of proxy - and this is exactly what the RTS component bypasses. From sesam a tape drive can be used just like any other device for storing data. On top of that, storage targets can also be bundled into groups: SEP then internally takes care of the most sensible way to store the data within such a group, while the user only specifies one storage target (Figure 5).

Praise for the documentation

That there is more to backup and restore than just copying a few files back and forth is impressively demonstrated by the SEP function range. Accordingly sesam itself adds some complexity and especially the CLI interface cannot be used intuitively. All the more important is an appropriately mature documentation. Here you have to clearly confirm to SEP that they have done your homework.

Instead of highly polished PDF brochures, the provider maintains its own Wiki [2], which was in top condition while working on this article. Also newer SEP-sesam functions were listed, which is not at all possible for every provider with regard to his programs. Detailed instructions for the first installation, for setting up backup jobs and also for the individual additional modules provide a quick start with the program.

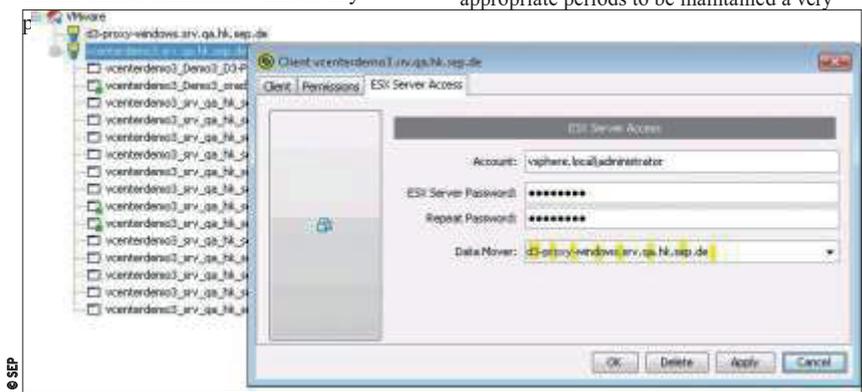


Figure 3: A native connection to VMware enables the backup of VMs from vSphere

Anyone who has ever tried to put a largely undocumented software solution into operation knows the value of good documentation and is happy about the one of SEP sesam.

Backups also for Office

CAPS does not directly belong to SEP sesam, but in the end it still forms part of the overall SEP package. Many companies today rely on cloud services for collaboration and therefore on solutions like Microsoft 365 or Google Drive. From the customer's point of view, however, they appear to be a kind of black box when it comes to backups. You have to trust that the provider will take care of your data are not lost and that Features like the built-in version control of the documents as promised works.

This is where the Cloud App Protection Service comes in: It reads the stored documents from the cloud environments and saves them locally as a backup copy. To achieve this, the Administrator of the application via the API interface of the respective cloud Access on. Although CAPS is only indirectly in connection with the rest of SEP sesam, but it extends the software makes sense where services in Public clouds are used, to which the Admin otherwise take care separately would have to.

In case of disaster

In the last section, this article focuses on a function that SEP itself calls disaster recovery, which in the author's eyes is at least partly misleading. Actually, disaster recovery is not primarily about backups, but rather about replication. The often quoted sentence "replication is not backup" is of course also valid in the opposite direction, and especially in this case.

Disaster recovery is always about how to get an installation back into operation quickly after a disaster. As is well known, almost every company today is (also) an IT company. If a company's central IT infrastructure fails, its existence is quickly threatened. To prevent this from happening, various technical solutions can be

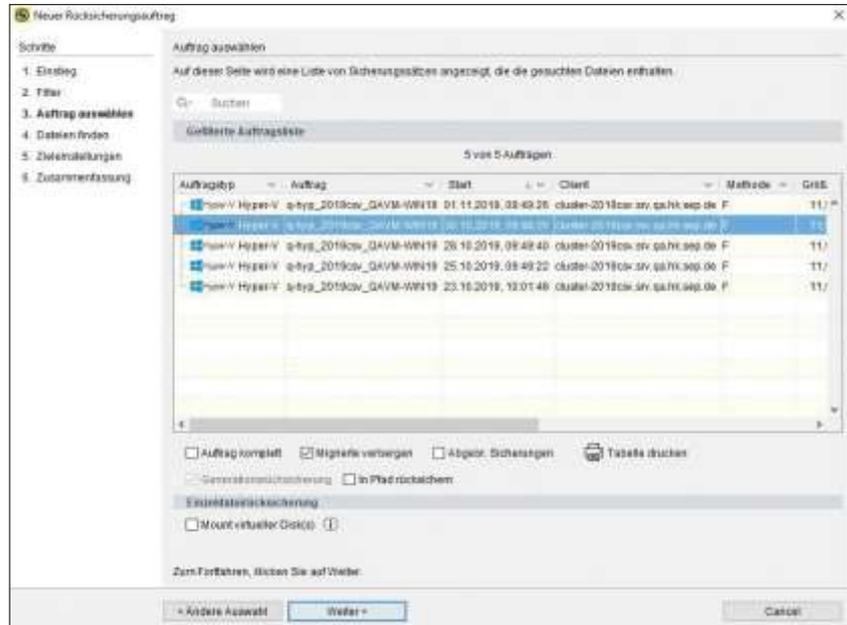


Figure 4: SEP sesam also supports Hyper-V native. So if you need the data from the VMs running on Windows you can use the program well for this.

combined with each other to enable the same services to be started from different hardware at a different location. For example, if a data center burns down or becomes unusable by a natural disaster, all relevant services are available at another location quickly again at your disposal.

The extent to which a company plays this game ultimately depends on the financial resources that it is willing and able to invest. Complex disaster recovery setups require permanent replication between two sites so that the entire data set is always available at both sites.

In addition, the network is its own Internet provider, so the IP addresses of the setup can be announced on the Internet via Border Gateway Protocol (BGP). This is the only technical way to ensure that requests arrive in Data Center A before the disaster, but almost immediately afterwards in Data Center B. If this approach is followed consistently, it also means that the entire setup must exist twice - once at Location A, once at Location B. If the resources of the setup are expanded, this must also be done at both locations.

Ultimately, such an environment entails a rat's tail of consequences and requires considerable financial expenditure.

SEP sesam is about the data

Because SEP sesam is and wants to be primarily a backup software, it is obvious that disaster recovery in the SEP context does not mean the principle described above. In fact, SEP sesam focuses on a different problem and a different goal: The solution wants to make it possible to quickly bring a second location online based on a data backup.

In concrete terms this means: The admin configures SEP sesam in such a way that it virtually creates a backup of itself at another location. Then he sets up backups of all relevant data that needs to be restored at the other location in case the first location dies. If this situation occurs, the admin uses the normal recovery settings of SEP sesam to restore the data in the backup at the second location.

Of course, that won't work right away. If the necessary hardware is already available at the target location, importing the data there takes only a short time. But that is not very likely:

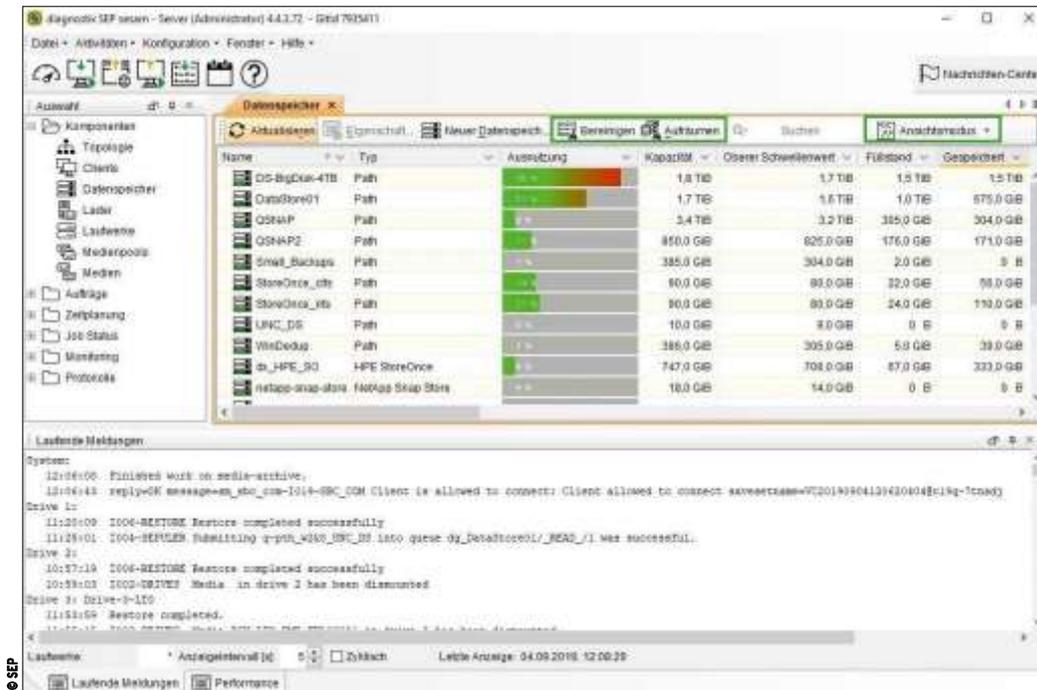


Figure 5: Sesam understands how to handle HDDs or SSDs as well as those with tape drives.

It does not seem plausible that a company that is spending money on a fully developed disaster recovery site, but at the same time forgoes meaningful replication along with BGP configuration, would be inappropriate. Compared to the costs for servers, the costs for replication and BGP are reasonable.

Works, but no DR

So that no wrong impression is created: SEP sesam does not promise anything that the software does not deliver. Restoring the data that the admin had previously defined as relevant for disaster recovery scenarios via the management GUI worked perfectly in the test.

The term disaster recovery for the described function is a bit too much of a good thing in the author's opinion. This term has a clear meaning and SEP sesam offers only a part of the functions that one expects according to the definition.

Prices

IT journalists have almost gotten used to the fact that manufacturers do not voluntarily give out the prices for their licenses. SEP unfortunately makes no exception to this rule. The search for prices for the different SEP products starts promisingly: On the product's website you will find a license overview, which shows very finely tuned the different Sesameversions including the related functions listed.

Also for the special products Sesam for HANA and the Cloud Application Protection Service you will find extensive details of the scope of services of the licences. All this garnished a Registration number (SKU, Stock Keeping unit) of the manufacturer, which the customer can order from purchase must indicate.

However, the rude awakening follows on the heels of this, because in the license overview all prices are missing despite the size of 50 pages. So if you want to know what a sesam installation costs you have to contact the manufacturer again - and in return you will probably receive a caring and thorough individual consultation.

However, in view of the hundreds of SKUs listed, this may well be necessary: The enormous flexibility in creating a Sesam setup allows for tailor-made setups, but determining the exact price for a sesam setup, taking all factors into account, should only be easy for those who have a lot of experience.

Conclusion

SEP Sesam presents itself as a flexible backup solution with an enormous range of functions. The program starts with the promise to take the biggest burden of backup off the admin's shoulders and keeps this promise.

As usual with backup software, the admin only has to do the following a considerable expenditure for SEP sesam in principle for operation in the respective environment to be set up. After that but the solution has proven to be more reliable backup manservant. That would just be the half the battle, but also in terms of restore SEP sesam did not give itself up in tests.

In addition, the great versatility of the tool: No matter which operating system or storage backend SEP sesam is dealing with, it does its job reliably. The fact that fast SSD storage can be used as a backend for volumes as well as tape drives, which (wrongly) have a reputation for backwardness, speaks for itself. Additional components such as the possibility of also using data from the packing the Cloud into a local backup (CAPS), round off the offer. SEP sesam takes it against this background with the other big names in the business and should be used in the search for backup solution for large environments are always among the candidates. (jcb.)

Information

- [1] SEP sesam: [https://www.sep.de/sep-sesam/sep-sesam-beefalo]
- [2] SEP Wiki: [https://wiki.sep.de/wiki/index.php/Main_Page/de]