

Enterprise Data Protection

Bacula Enterprise Datasheet

Key Benefits

- Universal built-in deduplication solution
- Possibility to choose the deduplication engine on the Storage or on the Client
- Reduction of bandwidth usage requirement & disk space optimization
- Faster backup and restore processes
- No deduplicating filesystem required
- Feature included in subscriptions at Silver, Gold and Platinum levels only

Global Endpoint Deduplication

Bacula Enterprise Edition Global Endpoint Deduplication™

Save space and money using deduplication
From the source, across the network, to the storage

The name of the game

The most popular use of deduplication in recent years has been in the area of enterprise backups.

IT organizations are constantly being challenged to deliver high quality solutions with reduced total cost of ownership. One of those challenges is the growing amount of data to be backed up, together with limited time to run backup jobs (backup window). Bacula Enterprise offers several ways to tackle these challenges, one of them being Global Endpoint Deduplication™, which minimizes network transfer and Bacula Volume size using deduplication technology.

You said deduplication

Deduplication is a complicated subject. Generally speaking, it allows to detect that data being backed up (usually blocks) have already been stored and rather than making an additional backup copy of the same data, the deduplication software just keeps a pointer referencing the previously stored data (block). Detecting that a block has already been stored is handled by computing a hash code (also known as signature or fingerprint) of each block, and comparing the hash code with those of blocks already stored.

Bacula Systems offers two ways of deduplicating your data:

- Aligned Volume format: offering an alternate (additional) Volume format that is aligned on specific block boundaries. This allows an underlying file system that does deduplication to efficiently deduplicate this Bacula Enterprise Deduplication Optimized Volume format.
- Global Endpoint Deduplication: Bacula Enterprise Edition will analyze data at the block level, then Bacula will store only new blocks and use references in Bacula volumes to blocks that are stored in the Deduplication engine. Deduplication can take place at the File Daemon side (saving network and storage resources) or at the Storage Daemon side (saving storage resources).

How to size?

Bacula Systems Deduplication Sizing calculators

Accurate sizing is difficult in practice. Oversizing and using conservative estimates is recommended.

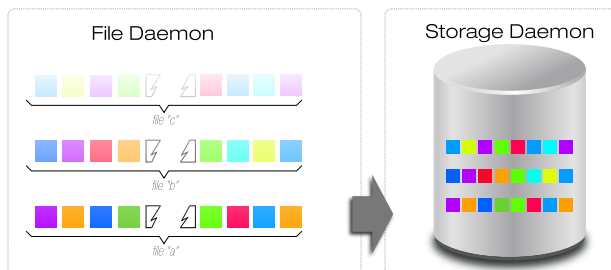
To help in sizing your infrastructure for deduplication, **Bacula Systems** provides you an online tool available at <http://www.baculasystems.com/deduplication-sizing-calculator-2>

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How do you pronounce "Backup"?

The traditional way

Traditional backup programs were designed to work with tapes. When they write to disks, they use the same format only writing to a container file instead of a tape. The Unix program tar is an example of this and so is Bacula's traditional volume format. Files are interspersed with metadata and written one after the other.



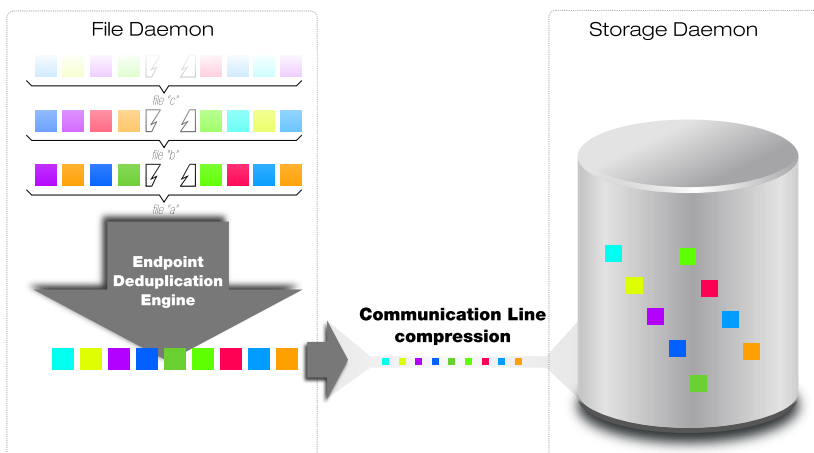
Storage without deduplication

For this reason, backup data does not typically deduplicate well on fixed-block systems. It is the main reason why variable block deduplication was invented and why there is a large market for deduplicating backup appliances.

The new era: Bacula Enterprise Global Endpoint Deduplication

While Bacula Systems' Aligned Volume plugin relies on deduplicating filesystem, Global Endpoint Deduplication plugin does not and goes much further.

The Global Endpoint Deduplication plugin allows Bacula Enterprise Edition not only to save storage space but also network bandwidth usage. To achieve this, the Global Endpoint Deduplication will only send the unknown File Daemon's blocks to the Storage Daemon. Adding to this, the new *communication line compression* feature is turned on by default allowing the minimum bandwidth usage consumption.



Backing up with Global Endpoint Deduplication

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How it works

Do deduplication wherever you want

The Global Endpoint Deduplication plugin allows the deduplication where you want:

- on the client side, to reduce the data sent over the network
- on the storage side, to allow your client to send data at the maximum throughput

Choose your filesystem

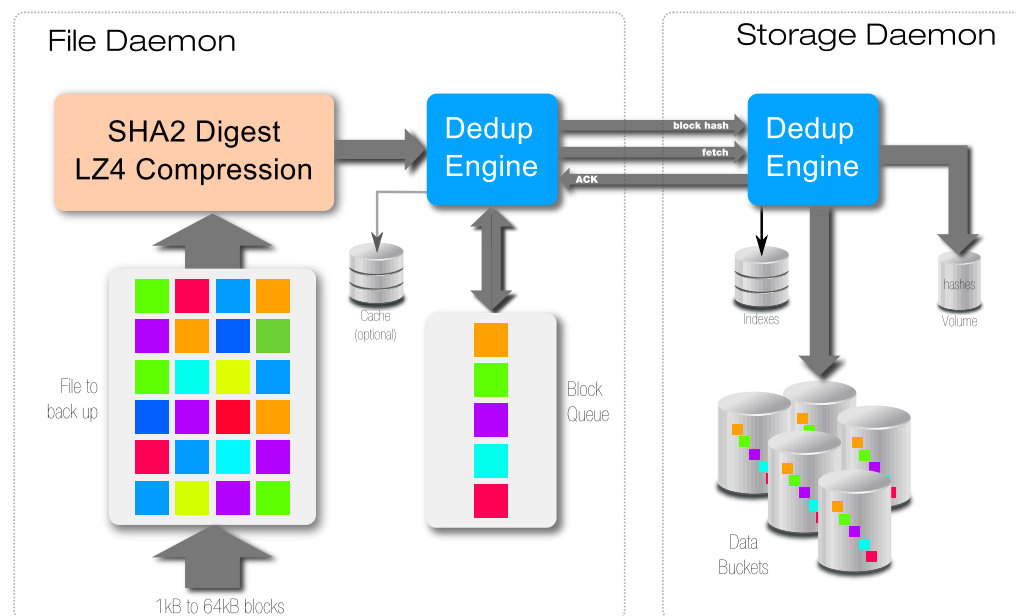
While the Aligned Volume plugin needs an underlying deduplicating filesystem, Global Endpoint Deduplication works with all the filesystems. If you want even more security with Global Endpoint Deduplication, use a filesystem that will directly take into account the safety of your data.

Go Global

Wherever the deduplication takes place, with Bacula Enterprise Global Endpoint Deduplication plugin, deduplication is **global**. Global means that backups store blocks never seen before on any client. Duplicate blocks for all clients become just a reference to a previously stored block.

Start the DB engine

Deduplication process requires huge indexes. To store them, Bacula Systems has chosen a noSQL database to get better performance and scalability.



Global Endpoint Deduplication in action

Bacula Systems allows you to choose the right deduplication system through the Aligned Volume format plugin or the Global Endpoint Deduplication feature. Make your choice!