

# DATA COMPRESSION

In [computer science](#) and [information theory](#), **data compression**, **source coding** or **bit-rate reduction** is the process of [encoding information](#) using fewer [bits](#) than the original representation would use. Compression is useful because it helps reduce the consumption of expensive resources, such as [hard disk](#) space or transmission [bandwidth](#). On the downside, compressed data must be decompressed to be used, and this extra processing may be detrimental to some applications. For instance, a compression scheme for video may require expensive hardware for the video to be decompressed fast enough to be viewed as it is being decompressed). The design of data compression schemes therefore involves trade-offs among various factors, including the degree of compression, the amount of distortion introduced (if using a [lossy compression scheme](#)), and the computational resources required to compress and uncompress the data.

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## EFFECT OF DATA COMPRESSION

In many cases, compressing the data in a table space significantly reduces the amount of disk space that is needed to store data. Compressing data can also help improve buffer pool performance. With compressed data, performance improvements depend on the SQL workload and the amount of compression. You might see some of the following benefits:

- Higher buffer pool hit ratios. The hit ratio measures how often a page is accessed without requiring an I/O operation.
- Fewer operations in which DB2 accesses a data page.

The compression ratio that you achieve depends on the characteristics of your data. Compression can work well for large table spaces. With small table spaces, the process of compressing data can negate the space savings that compression provides.

Consider these factors when deciding whether to compress data:

- DB2 compresses data one row at a time. If DB2 determines that compressing the row yields no savings, the row is not compressed. The closer that the average row length is to the actual page size, the less efficient compression can be.
- Compressing data costs processing time. Although decompressing data costs less than compressing data, the overall cost depends on the patterns in your data.

If the compression ratio is less than 10%, compression is not beneficial and, therefore, is not recommended. You can use the DSN1COMP utility to determine the probable effectiveness of compressing your data.