SAP HANA has the following goals:

Enable new applications and optimize existing applications

SAP HANA is an in-memory data platform that is deployable as an appliance or in the cloud and makes full use of the capabilities of current hardware to increase application performance, reduce cost of ownership, and enable new scenarios and applications that were not possible before.

High performance and scalability

SAP HANA is designed to make full use of multi-core CPUs by parallelization of execution. It can be distributed across multiple servers to achieve good scalability in terms of both data volume and concurrent requests.

Hybrid data management system – combining different paradigms in one system

SAP HANA architecture integrates different in-memory storages (column-based, row-based, and object-based), traditional disk-based tables, text analysis and search, and built-in support for planning. Combining all these capabilities in a single product not only improves performance but reduces overall complexity and cost.

Compatibility and standard DBMS features

An important goal is the possibility to use the SAP HANA database system as a replacement for any standard relational database management system. The SAP HANA database system is a full relational database management system with SQL interface, transactional isolation, and recovery (ACID properties), and high availability. SAP applications that use Open SQL should be able to run on SAP HANA without changes.

Support For text analysis, indexing and search

An important goal of SAP HANA is to provide powerful analysis, and text indexing and search capabilities that support a state-of-the-art search experience. This includes full text search with advanced features, such as freestyle search (without knowing the name of attributes in the database), linguistic search, and fault-tolerant fuzzy search.

Cloud support and application isolation

In cloud deployments, a system must be shared – including physical servers and installed software – between multiple customers. SAP HANA will support this in the future, with the planned ability to host multiple isolated databases within a single SAP HANA system. The databases inside one system will have their own data, metadata, and users, but will share the same hardware, the same SAP HANA software installation, and the system administration. This feature helps to support cloud scenarios – but it can also be used in an on-premise deployment, for example, for running multiple unrelated applications in one SAP HANA system with effective isolation and resource management.

Support for temporal tables

SAP applications that use Open SQL should run on SAP HANA without changes. In temporal tables, update operations do not modify the existing records. Instead, new versions of the data records are inserted. Applications may use temporal tables, for example, for time-based reporting and analysis or for versioning and change recording purposes.

Executing application logic inside the data layer

To benefit from the parallelization and optimization capabilities of SAP HANA, applications must execute data intensive operations on the database level. Pushing calculations to the database layer can also significantly reduce the amount of data that needs to be transferred between the database and application server. SAP HANA allows application developers to define application-specific functions that are executed inside the database layer.