**With the advancement of science and technology and fall of the hardware prices ,demand for new applications makes memory database merged. Memory database technology is a new database technology, its biggest feature is the " master copy " or " working version " permanent on memory . It copys all or part of the data to the memory and manipulate on the data,such as add, delete, modify and query. Compared to the disk, the speed of read and write is several times than the hard disk , thus the data stored in memory can dramatically improve capability and largely reduce the disk I / O operations. And The hard disk is merely as a data memory database backup.**

**Moreover, the memory database processing data usually has the deadline. when new data are generated, then the derivation of the current decision-making becomes invalid. Therefore, the practical application uses memory database to handle the business logic and real time data processing,which are widely used in telecommunications , financial sector and other services. Currently on the market of products used widely is IBM's SolidDB, Sybase ASE, open-source memory database SQLite. The data to add, delete, modify, query for check operation.**

**The system uses row compression technology, such as the Run\_length Compression, Bit Compression and Dictionary Compression, thereby significantly reducing the storage space. Meanwhile, we can significantly reduce the query time by optimizing the operation on the data.**