

production plant, and all the company as a whole – are actively exploring the latest technology. This means that it is possible not only to create an electronic mock, but also make it using modern equipment capable to accept information in digital form. It creates a modern company with advanced technology, quite competitive on the world market.

Selection of CAD / CAM systems in the smallest degree of a technical solution. When selecting usually dominated by the following factors:

- the company operates and that there is a "standard" in any field of industry;
- some systems use the key partners of the enterprise;
- how the system supplier is wealthy in terms of implementation of current trends, which must adhere to the basic machine-building industry.

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IN-MEMORY DATA GRID

In-Memory Data Grid (IMDG) is a data structure which uses the entire RAM and can be distributed over multiple computers or clusters. This modern technology ensures the main capabilities of an in-memory architecture. Ability to work with domain objects directly is supposed to be one of the essential differences between In-Memory Databases (IMDB) and IMDGs.

Recent engineering achievements both in the field of computers and computer sciences and especially in building 64-bit computers allowed us to use RAM as data storage. The goal of **IMDG** is to provide extremely high availability of data by keeping it in memory and in highly distributed (i.e. parallelized) fashion. By loading Terabytes of data into memory IMDGs are able to work with most of the **Big Data** processing requirements today.

It is worth noting that at the highest level IMDG is similar to a distributed hash map when the objects are stored in a key-value approach. Unlike most traditional systems you are not limited to simple byte strings and may employ any domain object you need. In most cases it facilitates the data grid usage enabling you to interface with distributed data storage as with a simple hash map. This also gives tremendous flexibility permitting you to keep particularly the same object your business logic deals with. Some obvious advantages of this technology are the following:

- enhanced performance;
- the ability to be easily scaled and upgraded;

- a key/value storage, rather than a relational model provides flexibility for application developers;
- business profits, presented as faster decision making, improved consumer service and higher productivity.

One of the main differentiating properties between NoSQL databases and IMDGs is data consistency. In addition, other feature in IMDGs which really distinguishes them from NoSql databases or IMDBs is actually scalable data partitioning across the cluster. It is significant that in the poorest approach most IMDGs may be considered as distributed hash maps.

Transactional ACID support (Availability, Consistency, Durability and Integrity) is another essential characteristic of IMDGs. Ensuring the data consistency within the cluster is provided by using 2-phase commit protocol (2PC). Different systems will have different locking mechanisms, but commonly more modern implementations will allow concurrent locking mechanisms guaranteeing ACID consistency with very high performance. Data consistency differs IMDGs from NoSQL databases. Moreover, NoSQL databases are mainly created by means of Eventual Consistency (EC) approach.

The typical use case of IMDG is data partitioning across the cluster, when data is sent to collocated computational nodes. The combination between Compute Grids and IMDGs is significantly important since computations must be properly deployed, failed-over, or scheduled in parallel or even in distributed way.

All in all, therefore, IMDGs with Computer Grids can be used in a wide range of industries where low latency and high processing speed is a first-class need including gaming services, trading systems, e-commerce, fund risk analytics, reservation systems and cloud applications.

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CYBER SECURITY IN BUSINESS

Nowadays all spheres of human society depend on new informational technologies. And business is also closely connected with informational technologies. So, human society is confronted with new great challenges due to the developing of high technologies. People suffer from cyberterrorism, hacking, problems of privacy. Cybercrime or computer crime can be divided into two categories: the first comprises crimes that target computers directly such as viruses, attacks and malware; the second focuses on online crime that uses computer networks or devices as means to perform fraud and identity theft through social engineering as well as cyber bullying, cyber stalking and cyber warfare.