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EasyDB

Distributed Object Database Management System

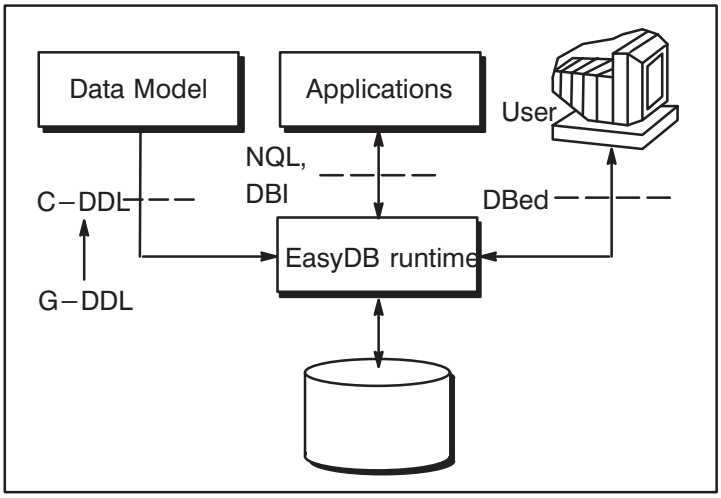
EasyDB – the real ODBMS from Basesoft Open Systems. EasyDB merges the benefits in object–oriented technology with the features in a multi–user database management system. EasyDB is designed for distributed environments and with high performance in mind. The result is a powerful ODBMS that meets the complex information needs of today's organizations and the high performance needs from applications like CAD/CAM, CASE, CAE, GIS, CIM and multimedia.

The Advantages of EasyDB

The EasyDB distributed object database management system is a result of many years of extensive R&D within two Swedish national information technology programs. Utilizing the latest generation of object–oriented database technology for embedded single–user or multi–user networked applications, the design offers exceptional performance, flexibility, reliability and ease–of–use.

The highlights of EasyDB are:

- Fully distributed, multi–client, multi–server architecture.
- Distributed storage and access transparent to the user.
- Well integrated language bindings to Ada83, Ada95, C and C++.
- Multiple language access and data independence between different programming languages.
- Conceptual modeling approach – intuitive and natural Data Definition Languages, based on the well known ERA–technique combined with object orientation. The user can choose between a graphical or a textual notation.
- Dynamic schema evolution, i.e. the user can change the schema without interrupting running applications or need of recompiling.
- Application views may be defined from the total schema.
- Interactive ad–hoc query language (O–SQL).
- Powerful type system with possibilities to define ranges of permitted values. In addition to conventional data types there are *bytestream* and *database reference* (link).
- Support for bidirectional relationships.
- Support for short and long transactions.
- Support for versioning.
- Dynamic and static name resolution.
- Easy reconfigurable, extended or downsized.
- Effective concurrency control schemes.
- High reliability and powerful error/conflict/exception handling.

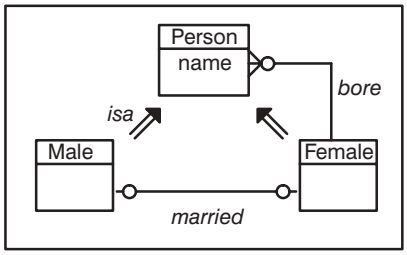


The User View

EasyDB has two generic interfaces − *DDL* and *DML*. The DDL (Data Definition Language) is based on the well–known Entity/Relationship model (ERA) and is used to define the structure of data in terms of *entity types*, *relationships* and *attributes*. The DML (Data Manipulation Language) works on two different levels: *interactive* for ad–hoc access and query and as an *embedded language* for highest performance.

C−DDL (Conceptual DDL) is the language the user uses to express the schema.

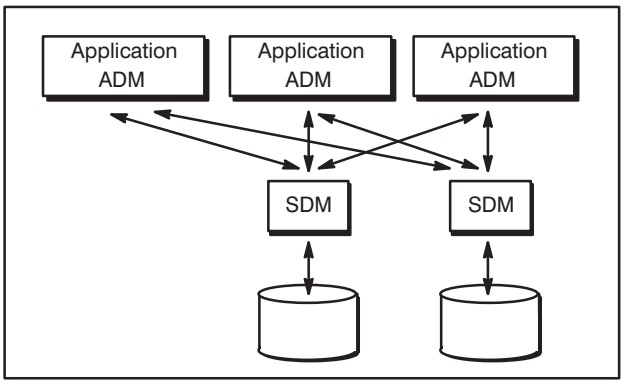
The ERA modeling concept in EasyDB is complemented with object oriented features. An entity type may *inherit* another entity type. A *cluster type* sets a physical boundary around a structure of entity types and relationships thus defining a coarse grain object or aggregation. The cluster is the unit of *versioning* and *access control*.



EasyDB offers one interactive DML, called **DBed**. There are also two DML's for program development, **NQL** (for programs written in Ada83 or C) and **DBI** (for programs written in Ada95 or C++). There are two strategies when accessing data, *static* and *dynamic* access. Static access is type–safe and the fastest in terms of execution speed. Dynamic access is the flexible way and is useful when writing general applications not depending on a specific schema.

The System Administrator View

The EasyDB system is implemented as two levels of data managers in a multi–client – multi–server architecture.
ADM − Application Data Manager, library to be linked with the application.
SDM − Storage Data Manager. One process for each host/disk you want to store database contents on.



EasyDB can be configured in *numerous configurations* to meet the installation needs, including single–user EasyDB LiTe for embedded use.

There are two key *performance factors*. The first is the time for bringing a cluster from disk to virtual memory (about 500 kb/s on a 10Mbit/s Ethernet LAN); the second is "in–core" operations (about 40 µs on a two MIPS machine, including all checks).

EasyDB is very easy to install and maintain. An installation includes utilities for starting and monitoring storage data managers and for defining the hardware and runtime configuration.

System Requirements

- EasyDB releases 5.1 (LiTe) and 5.2 (Multi) are available on most UNIX platforms and for Microsoft Windows NT on Intel. Please contact your local EasyDB representative for an up–to–date supported workstations list.
- 8 Mb of main memory (16 Mb recommended).
- 10–40 Mb of free disc space, depending on use.

Basesoft Open Systems AB

The company was founded in 1985. In June 1993, Basesoft acquired the product rights to EasyDB.

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