CDO is both a development-time model repository and a run-time persistence framework. Being highly optimized it supports object graphs of arbitrary size. The storage back-end is pluggable and CDO offers transactions with save points, explicit locking, change notification, queries, temporality, branching, merging, offline and fail-over modes, ...

The Client

CDO is designed to work with the Eclipse Modeling Framework (EMF) and Ecore, a free Java™ implementation of the EMOF™ specification of the OMG.

An object has a transient state when it is first created. It becomes persistent by attaching it to the persistent object graph that is managed by a view or transaction.

Arbitrary numbers of views and transactions can be opened on a session which holds the connection to a repository. Each view may point to a different branch and time and provides objects to the application that represent the consistent graph at that branch and time.

The Server

A CDO server consists of a set of framework components. Each component manages a particular aspect and communicates with the storage back-end through a pluggable storage adapter.

Offline Clone

Some usage scenarios require that applications stay fully functional even during periods of the master server being unavailable.

Cloned repositories continuously synchronize themselves in the background while they are online and offer read/write access all the time. Offline write access involves branching and merging.

Fail-Over

Another approach to protect clients against network or server failure is the setup of multiple repositories that act as fail-over participants.

An optional fail-over monitor communicates via agents with the managed servers and coordinates the election of the master repository in case of partial failure. Clients linked to the monitor automatically reconnect to the elected master.

Net4j

High Performance:
java.nio.DirectByteBuffer, zero copying

Good Scalability:
java.nio.channels.Selector, single I/O thread possible

Multiple Transports:
Shipped with TCP, JVM and HTTP

Pluggable Protocols:
Independent of chosen transport

Dawn

Dawn provides collaboration based on CDO for existing user interfaces.

Conflict detection and handling on all editors.

Generated extensions (fragments) for different kinds of EMF based editors (e.g. GMF, EMF, Graphiti).

Web-based solution for mobile devices and clients without installed Java environment.

CDO is an open source project hosted at Eclipse.org
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mailto:stepper@esc-net.de