

# Computer Aided Design Facilities for Prototyping the Omega DBMS \*

Mikhail L. Zymbler

Chelyabinsk State University

E-mail: mzym@csu.ac.ru

## Contents

- **Omega Project and MVS-100/1000 Overview**
- **Omega Project Development Environment**
  - *CVS Concurrent Versions System*
  - *DOC++ Documentation System*
  - *Debugger*
  - *Profiler*
- **Omega Project Cooperative Development Organization**
  - *Network Environment*
  - *Technological Cycle of Cooperative Development*
- **Conclusion**

---

\* This paper has been supported by the Russian Foundation for Basic Research (grant No. 97-07-90148).

## Concurrent Versions System

- **checkout** - get a specified project release from the repository;
- **commit** - check-in changes from a working copy into the repository to make them accessible for other developers;
- **update** - update a working copy of the project to get changes from other developers;
- **tag** - assign the same symbolic name to the project files of working copy or make a project's branch.

## DOC++ Source Code Documentation System

**/\*\*** Create a new thread and calculate its T-factor. There is no transmission of control to the new thread. In fact `th_fork()` creates a new record in the threads table of the thread manager. If the factor-function is omitted it is assumed to be `(TH_FACTOR_MAX/2)`. If priority is `TH_MIN_NICE` then the given thread will be run only in the absence of other ready-to-run threads with higher priorities.

**@memo** Create a new thread

**@param** `proc` - pointer to function representing thread body

**@param** `param` - pointer to parameter list or `NULL`

**@param** `factorfn` - pointer to factor-function or `NULL`

**@param** `type` - a thread type:

`\begin{verbatim}`

`TH_AND` - conjunction

`TH_OR` - disjunction

`TH_SYS` - system

`\end{verbatim}`

**@param** `nice` - thread priority (integer number from -20 to 20).

**@return** - the positive `tid` of a new thread or a negative error code:

`\begin{verbatim}`

`TH_OVERFLOW` - an overflow of the threads table,

`TH_ENOMEM` - not enough memory to create a new thread

`\end{verbatim}`

**@see** `th_proc_t` \*/

`extern int fork(proc_t proc, void* param, factorfn_t factorfn, type_t type, nice_t nice);`

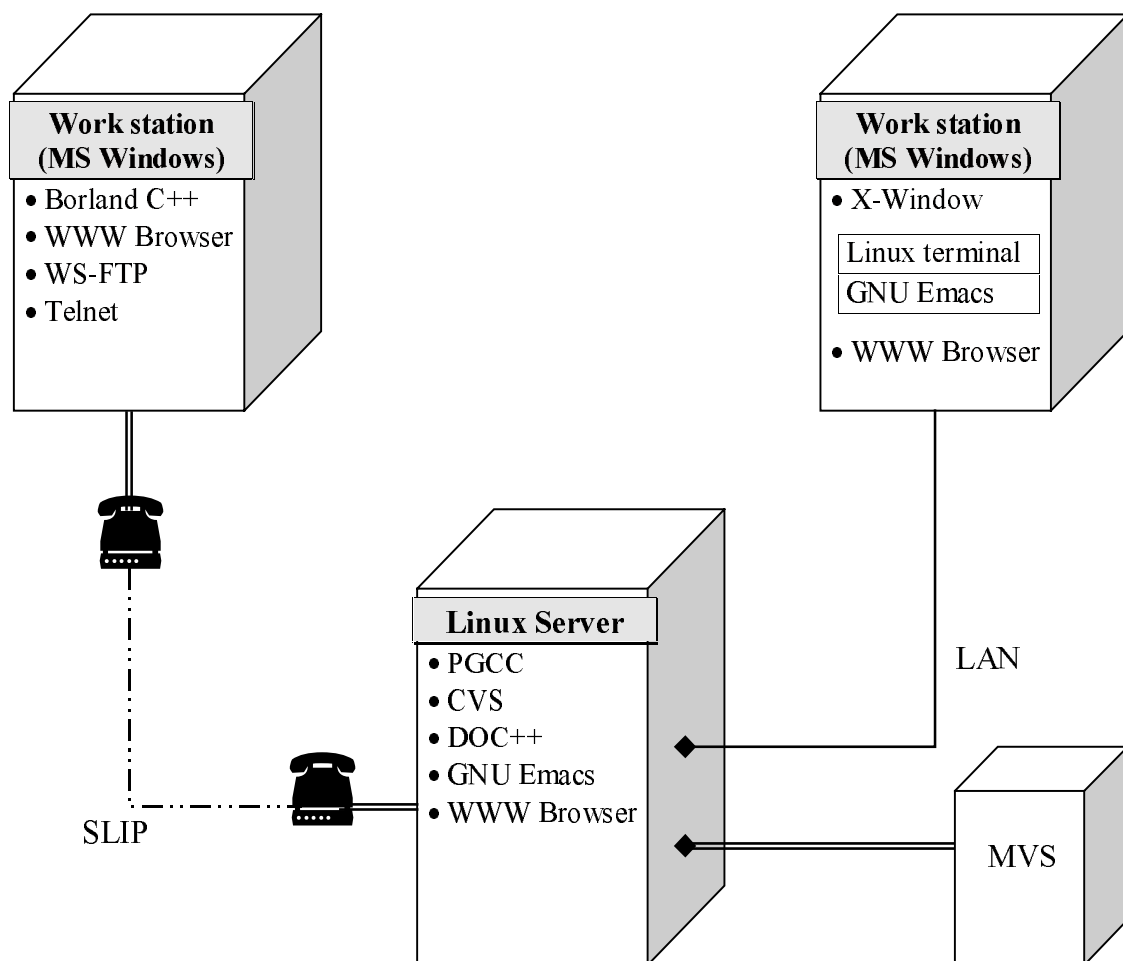
## Debugger

- */\*\* Set the debug print bit scale. \*/*  
void **db\_setScale**(long bitscale)
- */\*\* Set the debug mode: 1 - step by step, 0 - dump. \*/*  
void **db\_setMode**(char mode)
- */\*\* Show the values of variables. \*/*  
void **db\_printf**(char \* pointid, char \* formatstr, ...)

## Profiler

- */\*\* Create a tag. \*/*  
int **pf\_createTag**(char \* memo)
- */\*\* Start profiling by specified tag. \*/*  
int **pf\_startProfile**(int tag)
- */\*\* Stop profiling by specified tag. \*/*  
int **pf\_stopProfile**(int tag)
- */\*\* Get a value of a specified type for a specified tag. \*/*  
long **pf\_getValue**(int tag, int type)
- */\* Update a value of a specified type for a specified tag. \*/*  
int **pf\_addValue**(int tag, int type, long value)
- */\* Create a value type. \*/*  
int **pf\_createCoord**(char \* memo)

## Network environment structure for developing Omega DBMS



# Cooperative development organization for Omega project

