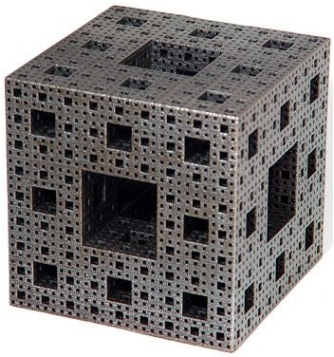
MDA® Meets Open Source



http://www.cubemodel.com

CWM™
common warehouse metamodel
http://www.omg.org

NetBeans.org
http://mdr.netbeans.org

mof PLAZA
http://www.fing.edu.uy/inco/ens/aplicaciones/MofPlaza/web/mofplaza/mofeditor.htm

CubeModel
is a data warehousing services provider focused on long lasting data warehousing solutions.

Industry
Web-search, Telecom, & Publishing

Challenge
This telecom/publishing customer has a very popular website with several million page views every day. They keep detailed log files for each page component, including how many times each component is displayed or clicked. Some of these log files are as large as 20 million records per day. One of the major challenges of this system is the daily loading of these very large log files into a data warehouse within a few hours and without requiring extensive computer hardware. Another challenge is creating a process that allows model changes to flow automatically through into the database schema, the ETL code and into the reporting system. The customer chose Model Driven Architecture® because it is ideally suited to overcoming these challenges. Their MDA solution facilitates extensive reuse of very optimized code for loading the large log files into this particular data warehouse. Also, the system's MDA Platform Independent Model (PIM) is ideal for driving automated creation of all parts of the system so that they are consistent with each other.

Benefits
- Significantly less time developing applications
- No licensing fees for commercial tools
- A custom solution that solved the particular problem at hand
- Code that is guaranteed to match the design
- Strategic advantage to a department that can quickly adapt to business changes

Tools
- OMG™'s MDA, CWM™ & XMI®
- NetBeans™ MDR & MDR Browser
- mofPlaza's mofEditor
- jEdit

Technique
The steps for developing file transformation applications are:

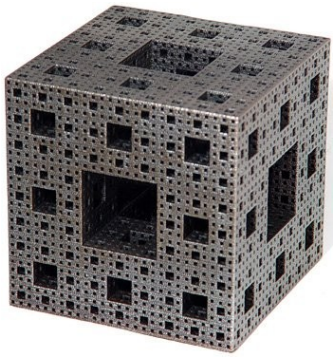
1) Model the log file,

2) Model the transformations of file fields to table columns,

3) Create a small application that implements one of each unique type of transformation,

4) Pull the application apart into template files replacing variables with recognizable strings,

5) Write an application



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that uses the templates and the PIM to recreate the small application, and

6) Generate the entire application from the templates and the PIM.

See details of the technique in the November 2006 issue of Dr. Dobb's Journal.

Tool Usage

MofEditor is an excellent tool for creating the MDA required PIM and for describing the transformations between the log files and the database tables. This visual tool lets you create CWM objects such as file fields and connect them to transformation objects and database table columns. The tool prevents you from making associations between objects that do not make sense. MofEditor can export the PIM into XMI® format which NetBeans MDR can directly import. NetBeans MDR provides both a visual navigation tool and a Java™ Metadata Interface (JMI) into the PIM. The visual tool is great for checking the completeness and semantic correctness of the model. The JMI into the PIM is what makes it possible to marry the PIM and the templates into a functioning application.

Occasionally it becomes necessary to look into the XMI form of the PIM to really understand what the tools have created. Jedit is a good tool for viewing large XML files as it allows folding away parts of the hierarchy.

Why Development Is Faster

Using MDA with open source tools makes it possible to create computer readable CWM models of databases and file transformations, facilitating auto-generation of applications and significant code reuse. Implementation of significant design changes often takes just a few minutes. The PIM is reused for many purposes including report generation, database access, and user documentation.

***CubeModel** is a data warehouse services provider that focuses on long lasting data warehousing solutions. Because our work can survive platform changes, vendor changes, and many business process changes, we offer better value for your dollar and reduce infrastructure distractions that can take away from your ability to do business. See our website for further details or contact us at: info@cubemodel.com or call (720) 771-3276.*

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