

I-Logix

I-Logix' Rhapsody®

The philosophy of Rhapsody has always been the generation of platform-independent models that map onto many different computing platforms, long before the OMG's inception of the MDA™ initiative. Rhapsody itself may be thought of as consisting of several collaborating parts:

- Model-Entry System – the developer enters in the PIM using standard UML™ diagrams
- Model Compiler – the developer generates the source for the selected language (C,C++ or Java™) and compiler
- Model Tester –allows the tester to stimulate and monitor the execution of the PIM-generated application on the host or target platform
- Framework – a real-time PIM framework, provided by Rhapsody, that runs underneath your PIM
- OS-Dependent Adapter – a lightweight OS-specific adapter layer that handles interaction with the underlying RTOS

Rhapsody generates PIM applications that run on top of the provided framework and OS adapters. The developer supplies the Middleware and OS from commercial vendors that form the complete application. See Figure 2.

Rhapsody has always excelled in constructing portable and technology independent systems via its superior generation of application code from platform independent models, its object execution framework (OXF), and via the use of OS-specific adaptors for most commercial RTOSs.

The UML behavioral model is based on I-Logix Statechart technology. I-Logix is an expert in this technology and provides complete support of statemachine code generation. The I-Logix UML model compilers are very advanced, producing readable, understandable, and efficient source code for the most popular languages and compilers used in real-time and embedded development projects. Changing from one environment to another, such as from Nucleus to VxWorks to OSE to QNX to Windows, is no more difficult than a mouse click – MDA's goal of platform independence has never been more readily apparent.

I-Logix excels with its advanced execution, debugging and test environments. Since 1998, Rhapsody has provided developers with the ability to not only test and debug their PIM, but also test and debug *at the design, and not only the code, level*. Not only can Rhapsody generate the application for a variety of platforms, Rhapsody allows the developer to test and debug the PIM on ALL of those environments – using the same

concepts used to create the model – and execute statecharts, sequence diagrams, and object diagrams directly, even when the application is running on the embedded target platform. The developer is able to capture and execute test vectors and run regression tests on any of the target environments with a mouse click. Need or want to debug at the source code level? No problem – Rhapsody integrates with source code IDEs, such as Wind River’s Tornado, for simultaneous design *and* code level debugging.

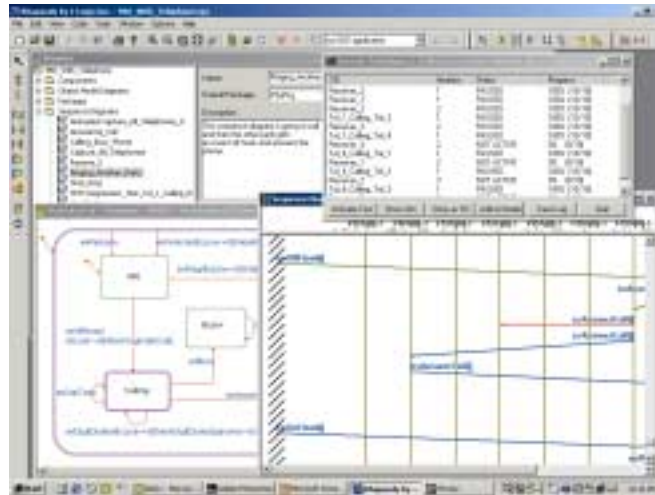


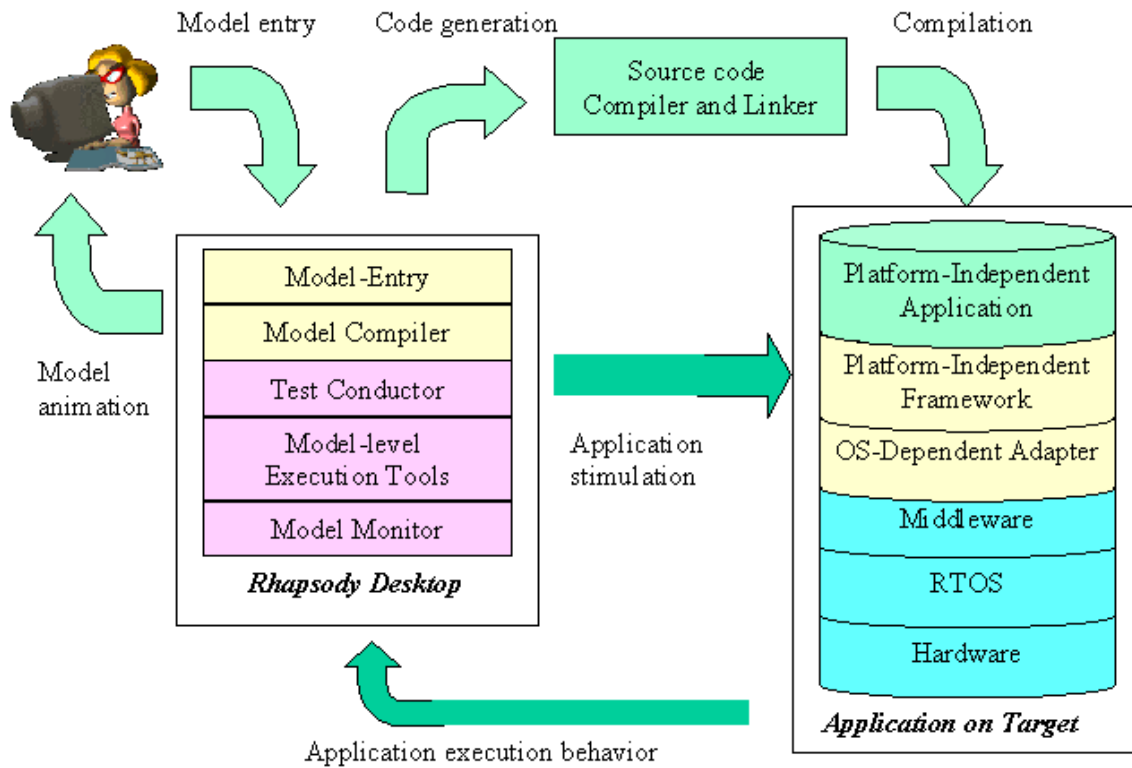
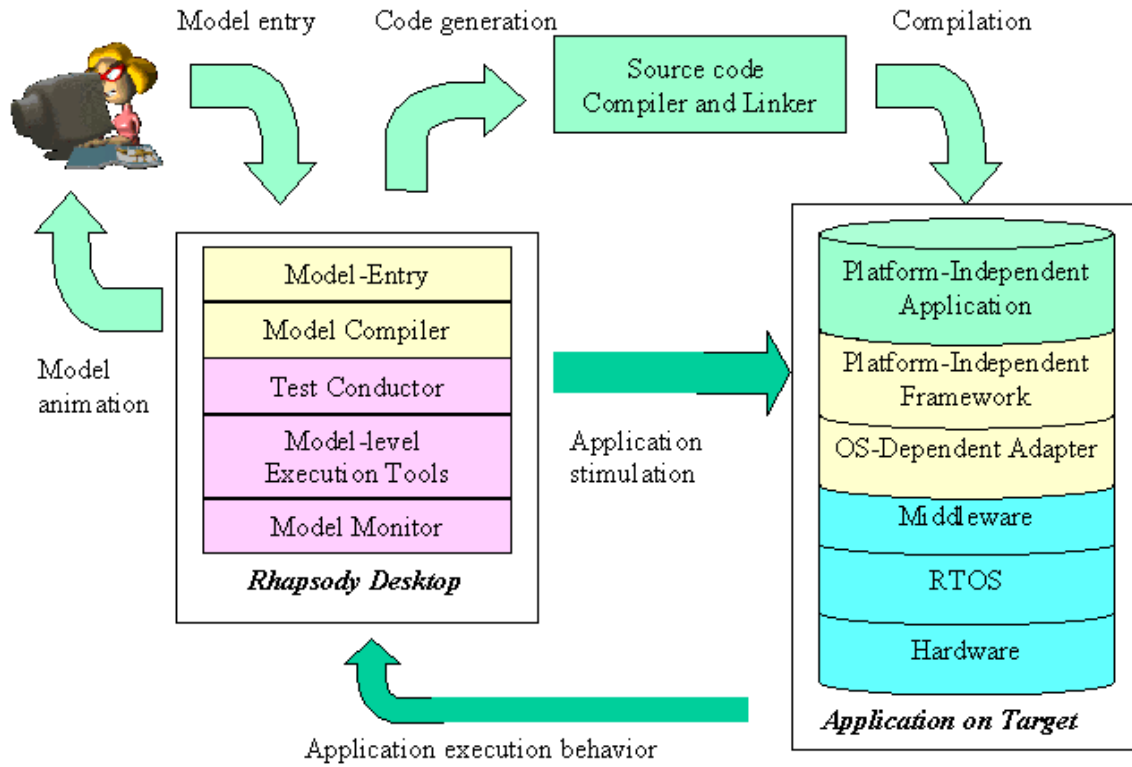
Figure 1: Rhapsody TestConductor™

What about support for middleware? Rhapsody supports COM and CORBA® out of the box. Making an object a CORBA or COM object is as easy as marking it as a stereotype <<CORBAInterface>> or <<COMClass>> and all the IDL and source code generation is done automatically. Automated model-level testing and debugging works seamlessly in this environment.

Summary

The MDA initiative is in response to the burgeoning complexity of today’s systems and system environments. It answers the question of how we protect and reuse our intellectual property as infrastructure and language technology evolves around us. Using standardized infrastructures to implement Platform Independent Models created in UML allows us to migrate our systems to new technology as it becomes available, and to integrate systems constructed using widely divergent technology, even today’s complex component-based distributed systems. Rhapsody, by I-Logix, joins the MDA pack, providing unparalleled PIM application generating and testing. Rhapsody truly is a tool for the next Millennium.

See Figure 2 on next page: Rhapsody, an MDA-Compliant Tool



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