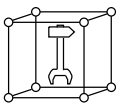
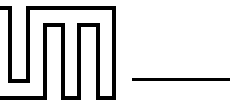



OMIS — Online Monitoring Interface Specification

Thomas Ludwig, Roland Wismüller

Technische Universität München
Lehrstuhl für Rechnertechnik und Rechnerorganisation (LRR-TUM)
http://wwwbode.informatik.tu-muenchen.de/~omis



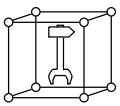
Motivation

Powerful tools for parallel and distributed programming need on-line monitoring facilities for **observation** and **manipulation** of programs during runtime.

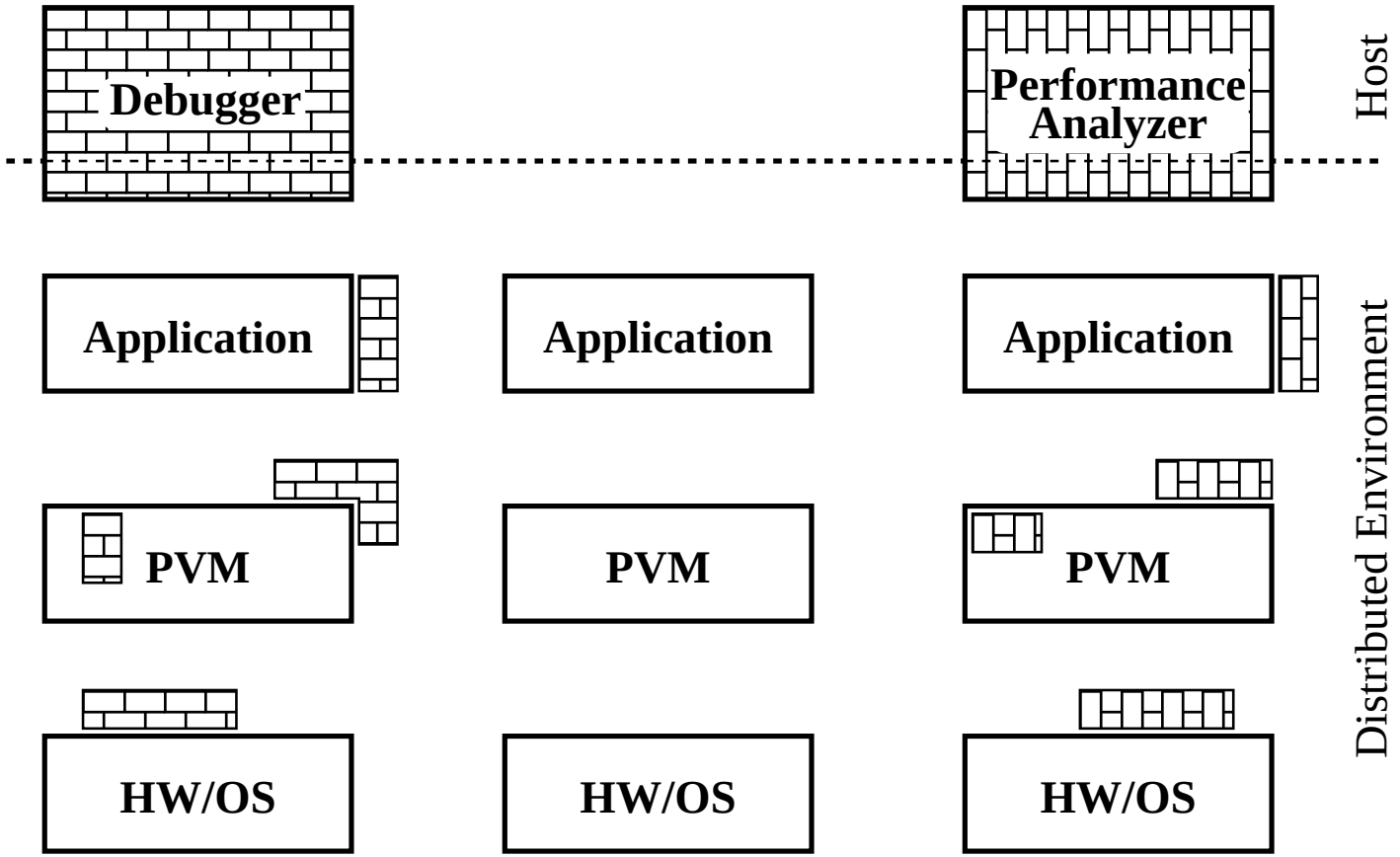
(debugging, performance analysis, load balancing, computational steering...)

Sophisticated tools already exist, **but**:
all use proprietary monitoring systems which are incompatible to each other!

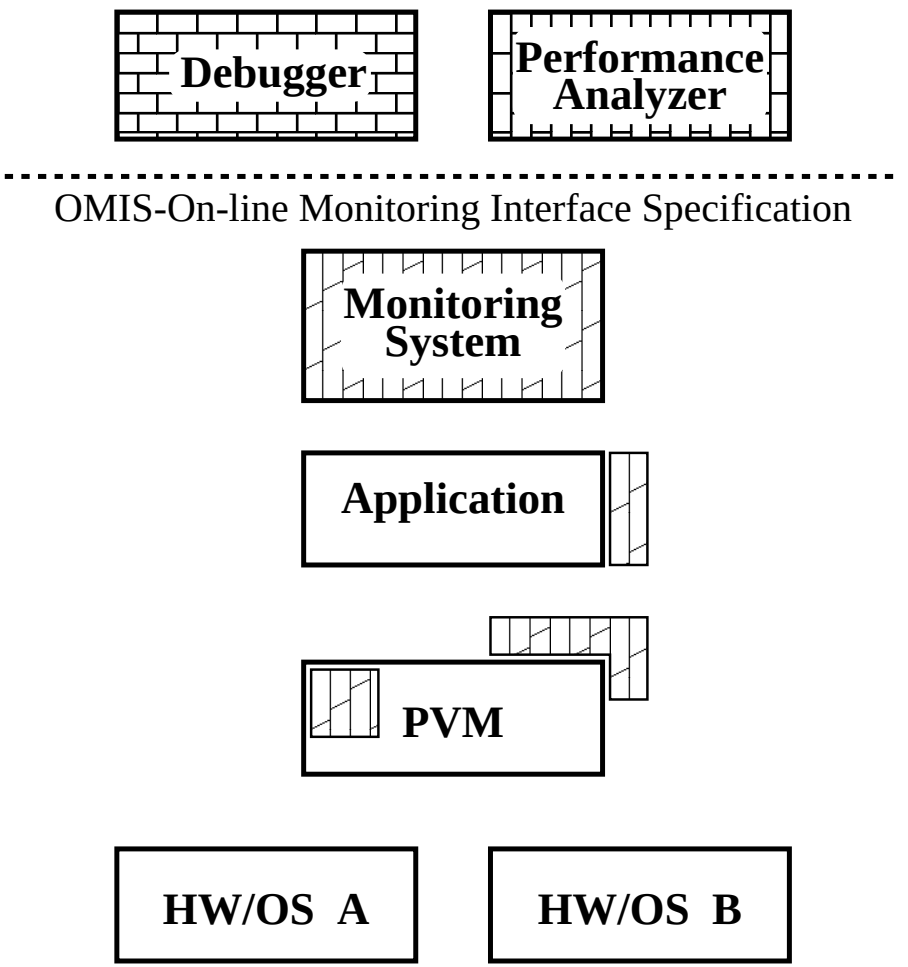
No standard infrastructure exists to connect tools to running systems
$\Rightarrow$ every new tool requires to implement a new monitoring system



Tool Environments without OMIS



Tool Environments with OMIS



OMIS — On-line Monitoring Interface Specification

Separate tool development from monitoring system development

⇒ R&D groups involved in tool design and implementation

⇒ R&D groups involved in monitor design and implementation

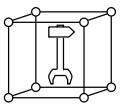
Eventually have interoperable tools

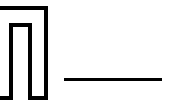
⇒ based on common monitoring layer

⇒ switch e.g. from visualizer to debugger

Eventually have uniform tools

- same set of tools on all target architectures for which an OMIS compliant monitoring system is implemented



Design Concepts

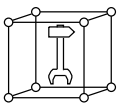
- Independence from the target platform:

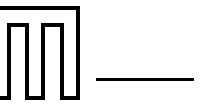
  Define generic monitoring system

  All internal components use specified interfaces

- The monitoring system is a set of communicating monitors, one for each node of the virtual machine

- Event/action working model of (single node) monitor



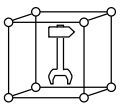



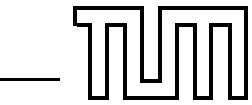
Current Status of OCM

3 researchers and 3 students working on the design since January 1996:

- Communication and Request Processing in OMIS Compliant Monitoring Systems (Michael Uemminghaus)
- Information and Event/Action Management in OMIS Compliant Monitoring Systems (Hans-Günter Zeller)
- Development of the Program/Monitor Interface for an OMIS Compliant Monitoring System (Manfred Geischeder)

Publicly available OCM design document: mid November



Future Work

- Discussion of relevant research topics with other groups active in that field
- Improve OMIS document: include feedback from other researchers and changes that are caused by the OCM design
- Implement OCM according to the specification