An Overview of MOLDS: A Meta-Object Library for Distributed Systems

Alexandre Oliva Luiz Eduardo Buzato

LSD–IC–UNICAMP

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Summary

- Introduction
- Computational Reflection
- **Guaraná**
- **MOLDS**
- Conclusion

Introduction

- Growing complexity of applications
  - Modularization
  - Object orientation
  - Design Patterns
  - Frameworks
- Reusable solutions

Reflection

- Separation of concerns
  - Base level: functional requirements
  - Meta level: management requirements
- Transparency
- Reification
- Interception
- Meta-objects

Guaraná

- Composition of meta-objects
- Propagation of meta-configuration
- Dynamic reconfiguration
- Security
- Broadcasting messages
- Creating objects and operations

MOLDS

- Persistence
  - Reachability
  - Reincarnating objects
- Replication
  - Group communication
- Distribution
  - Proxies

MOLDS

- Caching
  - Composition approach
  - Meta-meta-level approach
- Migration
  - SSP chains [Shapiro92]
- Accounting

MOLDS

- Monitoring
  - MVC, Statecharts
  - Consistent Global Snapshots
- Atomicity
  - Base- or meta-level control
  - Transparent concurrency control
  - Multiple concurrency control policies

Conclusion

- Reflexive approach
  - Transparency
- Guaraná
  - Reusability
  - Security
- Free Software (GNU GPL)
- Work in progress