A Framework for Obtaining the Ground-truth in Architectural Recovery

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iRODS – Prescriptive Architecture
iRODS – Descriptive Architecture
Architectural Recovery

- Architectural recovery techniques
  - “The” architecture
  - Inaccuracies
- Criteria for evaluating recovery techniques
  - Authoritative recovery
Ground-Truth Recoveries

- Ground-truth recovery
  - An architect or engineer of the system
- Existing ground-truth recoveries
  - Smaller systems
  - Very coarse-grained
- Build a repository of ground-truth recoveries
Our Framework

- Solution approach:
  - Framework for obtaining ground-truth recoveries
    - Mapping principles
    - Recovery process
  - A case study on Hadoop
Mapping Principles

- Generic
- Domain
- Application
- System Context
  - Spans across other principles
Ground-truth Recovery Process

- Ensure consistency
- More informed intermediate recoveries
  - Different types of information and principles
- Roles
  - Recoverer
  - Certifier
    - Minimize burden
    - Maximize time and expertise
The Eight Steps of the Process
Step 1: Gather domain & app. principles
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**Step 2**: Select generic recovery technique
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- **Step 5**: Utilize app. & domain principles
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- **Step 7**: Pass recovery to certifier
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Step 8: Apply certifier’s suggestions
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Ground-truth Recovery
Full Ground-truth Recovery of Hadoop
Removal of Utility Components
Conclusion and Future Work

• Contribution: A framework for the recovery of ground-truth architectures
  • Mapping principles
  • Process
• Repository of ground-truth recoveries
Thank You