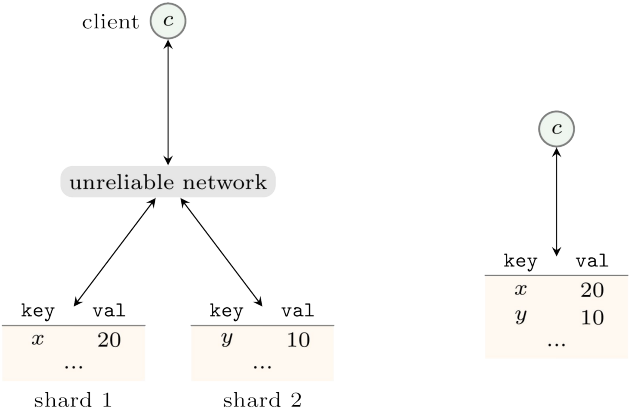


# The Phlox Framework for Verifying a High-Performance Distributed Database



## Challenge:

- Distributed databases are foundation of key systems
- Highly non-deterministic
- Optimizations involve handling inconsistent data



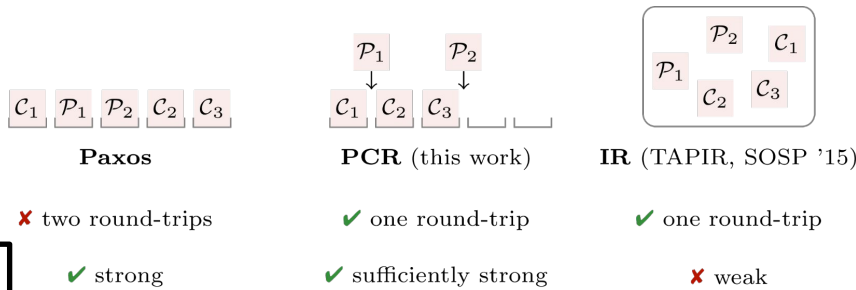
distributed environment (impl)      single machine (spec)

## Scientific Impact:

- Generalized prophecy variable proof technique
- Proof strategy suggested new protocol and optimizations

## Solution:

- Extending Grove separation logic framework
- Prophecy variables for multiple sources of nondeterminism



## Broader Impact and Broader Participation:

- Reducing bugs in distributed databases can prevent outages/data loss
- Developing tutorial and teaching modules on separation logic for distributed systems

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