

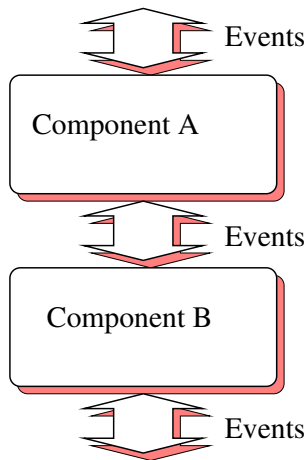
Introduction to Reliable Distributed Programming

Figures

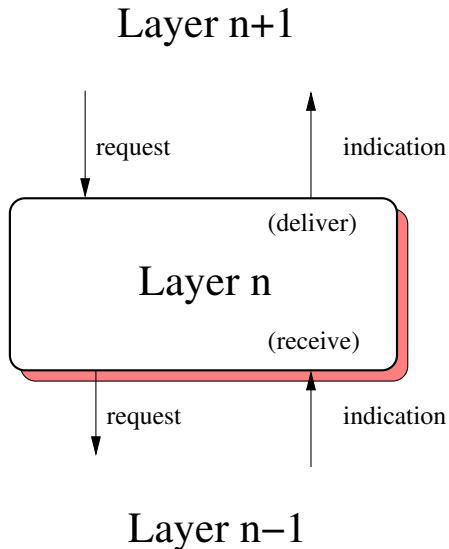
Rachid Guerraoui Luís Rodrigues

Springer, 2006. ISBN: 3-540-28845-7

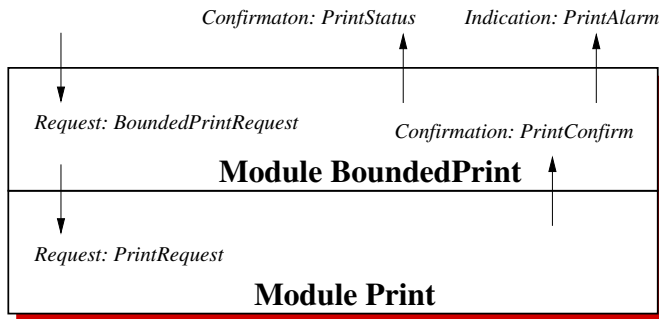
Composition model



Layering



A stack of printing modules



Layers, Sessions, QoS and Channels

Introduction

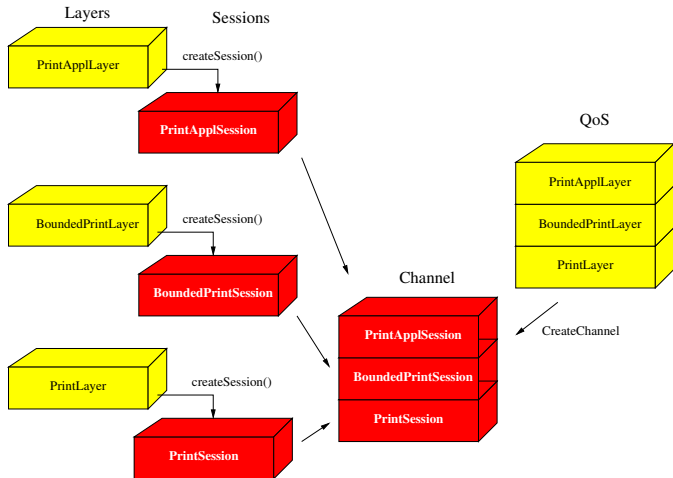
Basic Abstractions

Reliable Broadcast

Shared Memory

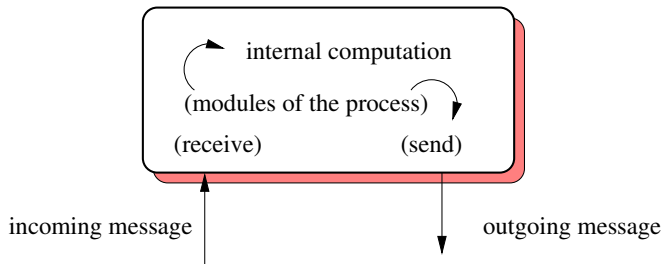
Consensus

Consensus Variants

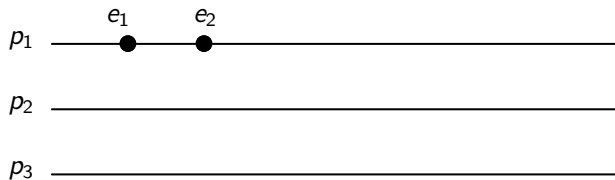


Step of a process

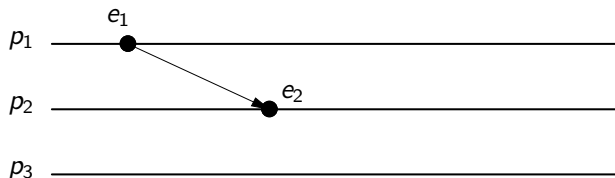
Process



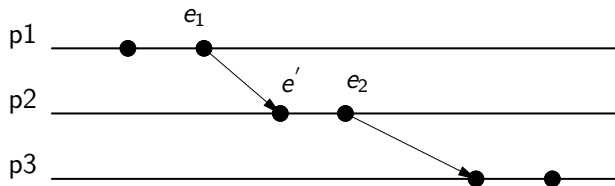
The *happened-before* relation (a)



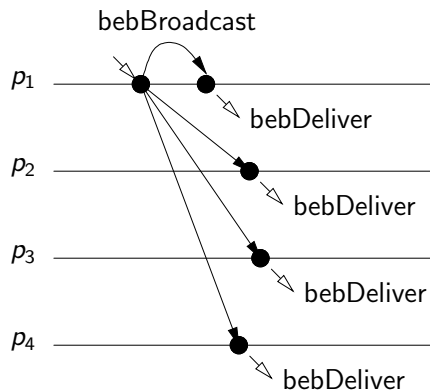
The *happened-before* relation (b)



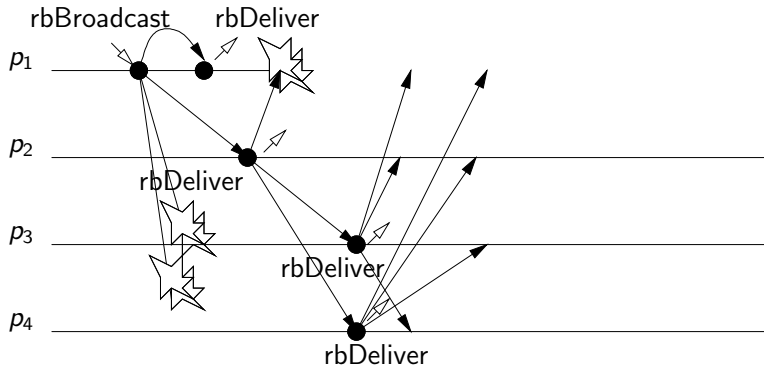
The *happened-before* relation (c)



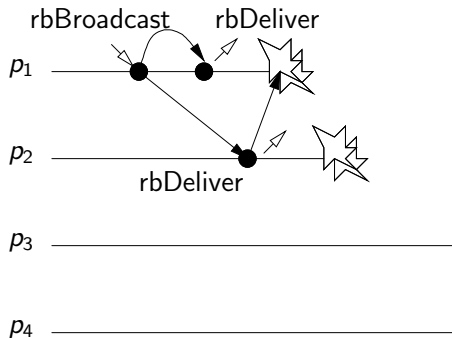
Sample execution of basic broadcast



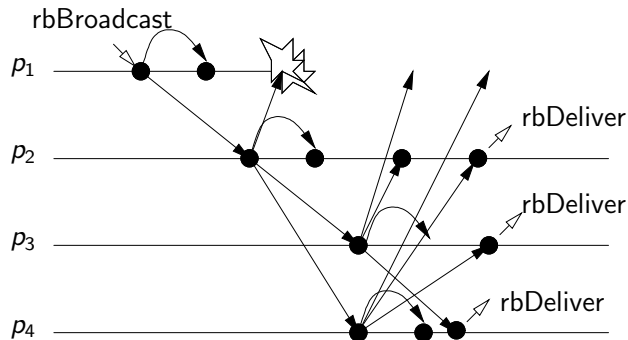
Sample executions of reliable broadcast (a)



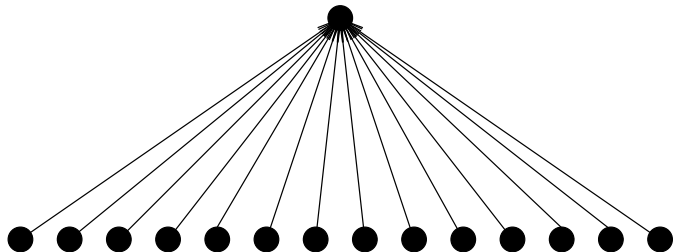
Sample executions of reliable broadcast (b)



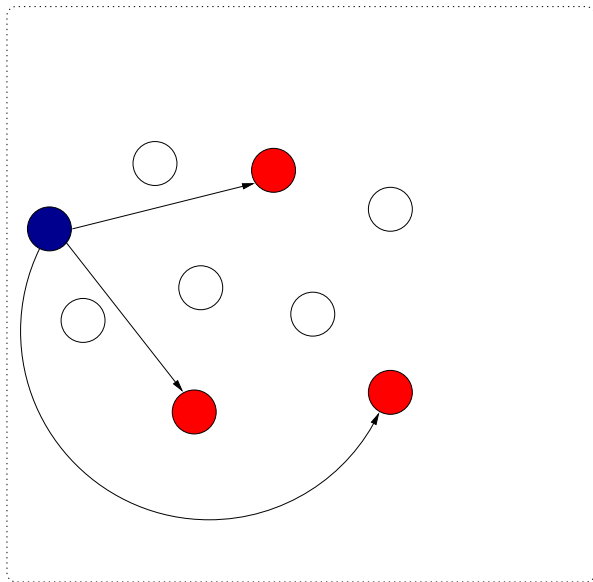
Sample execution of all-ack uniform reliable broadcast



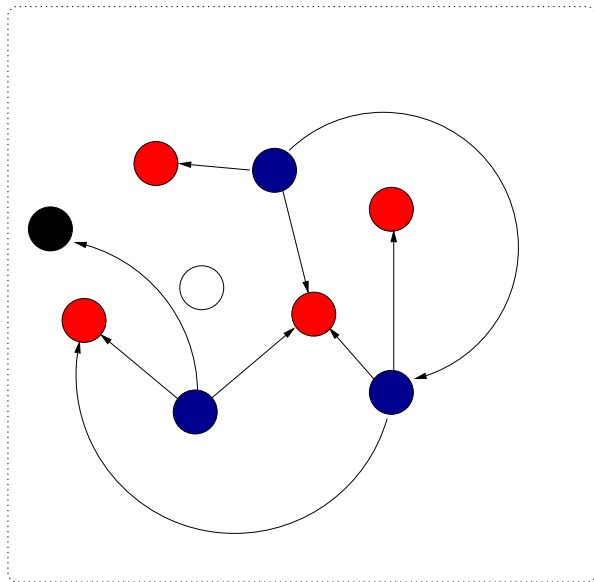
Ack implosion



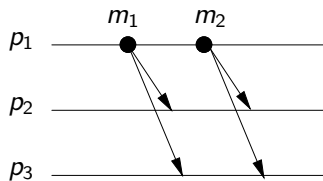
Epidemic dissemination (a)



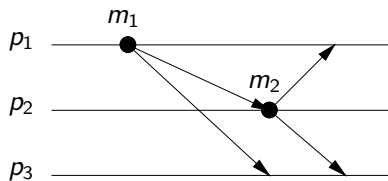
Epidemic dissemination (b)



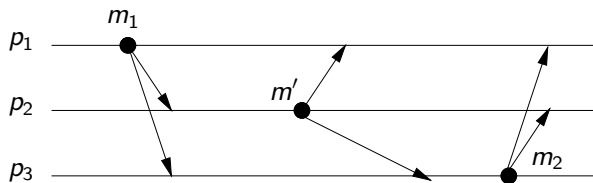
Causal order of messages (a)



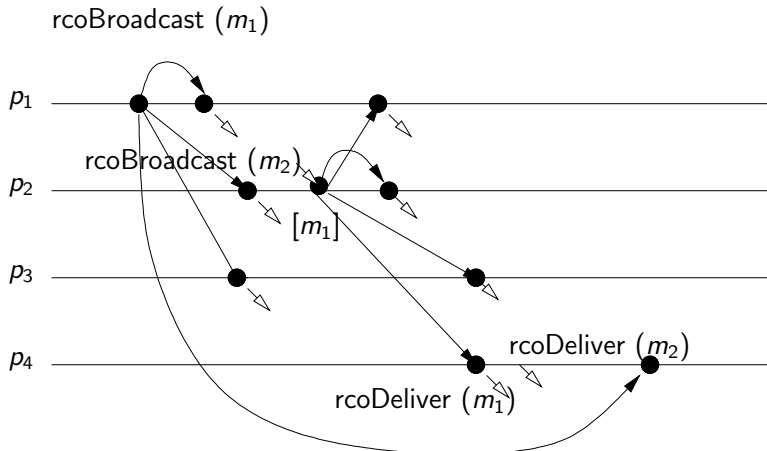
Causal order of messages (b)



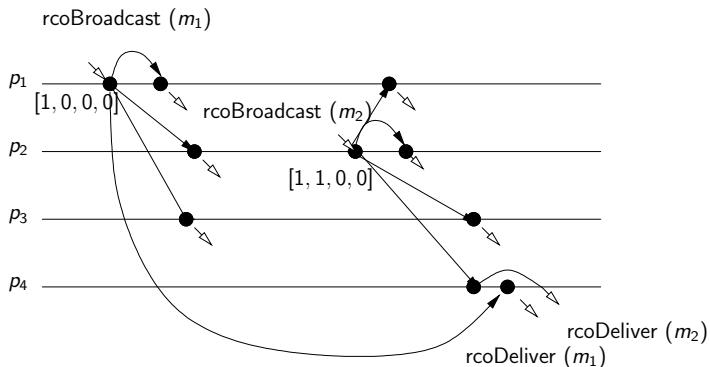
Causal order of messages (c)



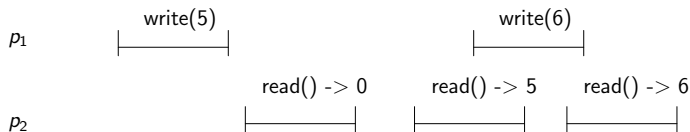
Sample execution of causal broadcast with complete past



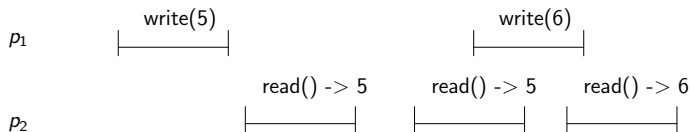
Sample execution of waiting-causal broadcast



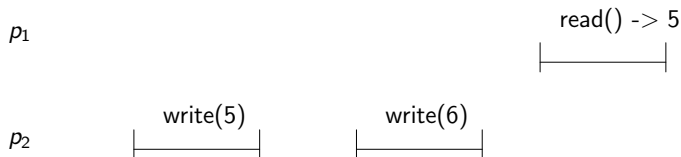
Non-regular register execution



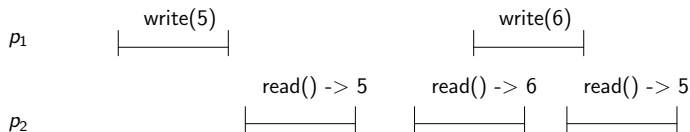
Regular register execution



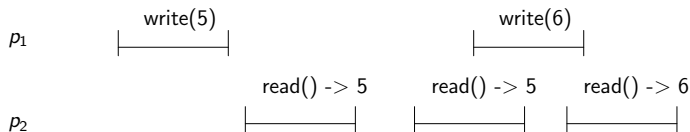
Another non-regular register execution



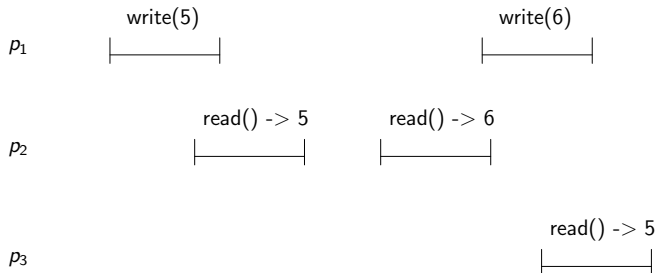
Non-atomic register execution



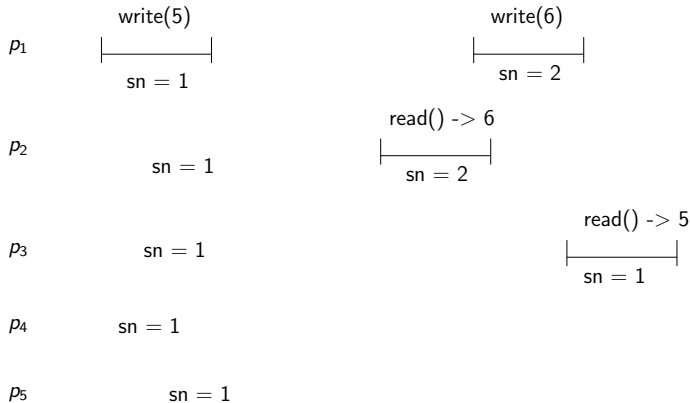
Atomic register execution



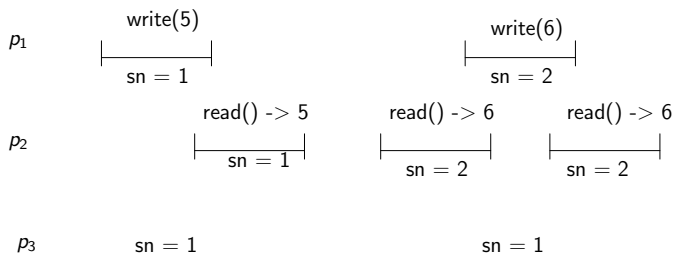
Violation of atomicity in the “Read-One Write-All” regular register algorithm



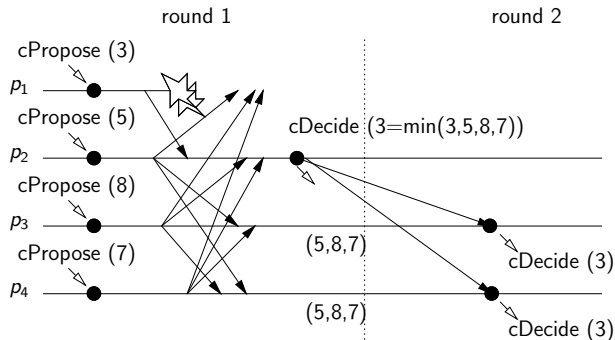
Violation of atomicity in the “Majority Voting” regular register algorithm



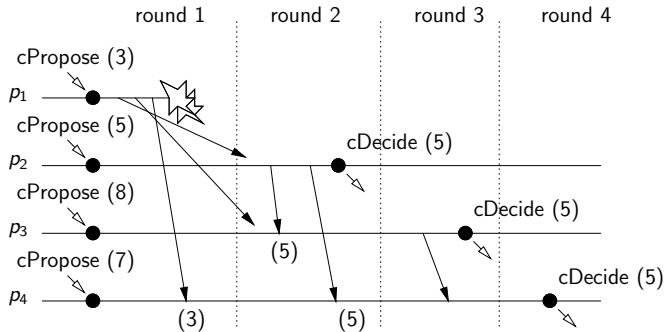
A $(1, N)$ atomic register execution



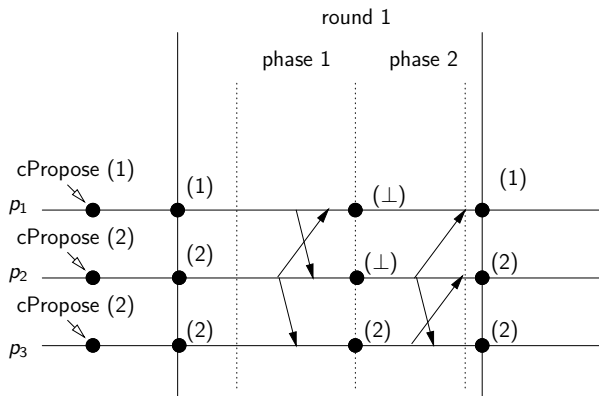
Sample execution of flooding consensus



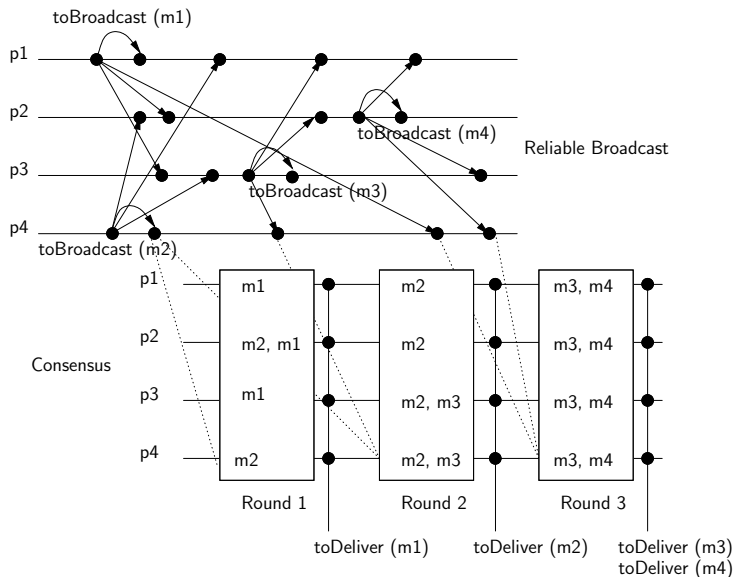
Sample execution of hierarchical consensus



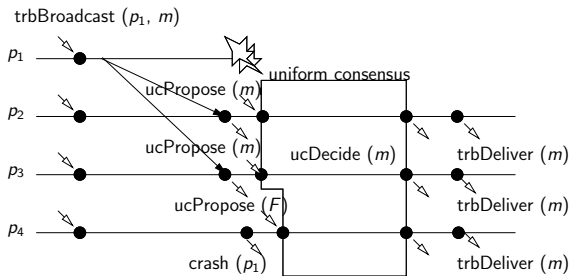
Role of randomization



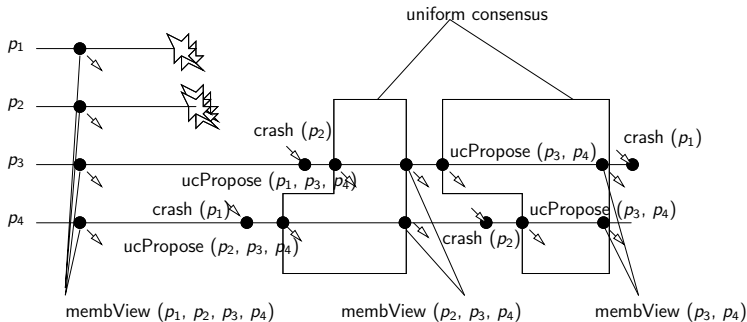
Sample execution of the consensus-based total order broadcast algorithm



Sample execution of consensus-based terminating reliable broadcast



Sample execution of the membership algorithm



Sample execution of the TRB-based view synchronous algorithm

