

2000

- a) "Coordinator" or "token ring" could be used.
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| <ul style="list-style-type: none"> • elect coordinator • entry protocol: <ul style="list-style-type: none"> ask coord reply OK • exit protocol <ul style="list-style-type: none"> send finished to coord. | <ul style="list-style-type: none"> • token circulates • entry protocol <ul style="list-style-type: none"> wait for token • exit protocol <ul style="list-style-type: none"> pass on token |
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discussion

- + fair - FCFS or coord chooses
- + economical - 3 messages
- single point of failure
- coord is bottleneck
- meaning of "no reply"?
 - waiting for reply ✓
 - coord has failed?
- OK for a conference - } possibly have audios to detect failure --

- not fair: ring order not FCFS
- + quite efficient except token circulates when no one drawing
- failure - loss of token - must detect & recover.
- crashed site - bypass?
- failure nodes not too bad
- "in conference app"

- b) Known number of primary servers N
- Use quorum assembly $W_Q > \frac{N}{2}$ $W_Q + R_Q > N$
- Member receiving update request becomes coordinator
- assemble quorum (bring all ^{up} to latest version)
 - run 2PC protocol (expand)
 - can then propagate update to other members of primary server group and other replicas under weak consistency.
 - may have to back off under contention @ A else deadlock..