

Chandy-Lamport Global Snapshot algorithm creates a consistent cut

- if $e_j \rightarrow \langle P_j \text{ records its state} \rangle$, then it must be true that $e_i \rightarrow \langle P_i \text{ records its state} \rangle$.
 - By contradiction, suppose $e_j \rightarrow \langle P_j \text{ records its state} \rangle$ and $\langle P_i \text{ records its state} \rangle \rightarrow e_i$
 - Consider the path of app messages (through other processes) that go from $e_i \rightarrow e_j$
 - Due to FIFO ordering, markers on each link in above path will precede regular app messages
 - Thus, since $\langle P_i \text{ records its state} \rangle \rightarrow e_i$, it must be true that P_j received a marker before e_j
 - Thus e_j is not in the cut \Rightarrow contradiction