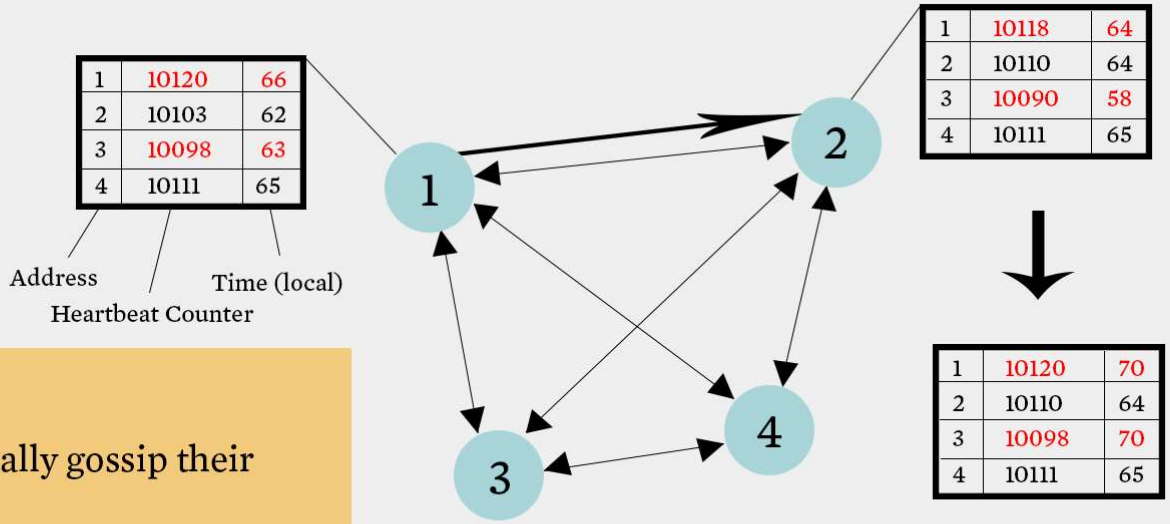
GOSSIP-STYLE FAILURE DETECTION



Protocol

- Nodes periodically gossip their membership list
- On receipt, the local membership list is updated

Current time: 70 at node 2 (asynchronous clocks)

Fig and animation by: Dongyun Jin and Thuy Ngyuen

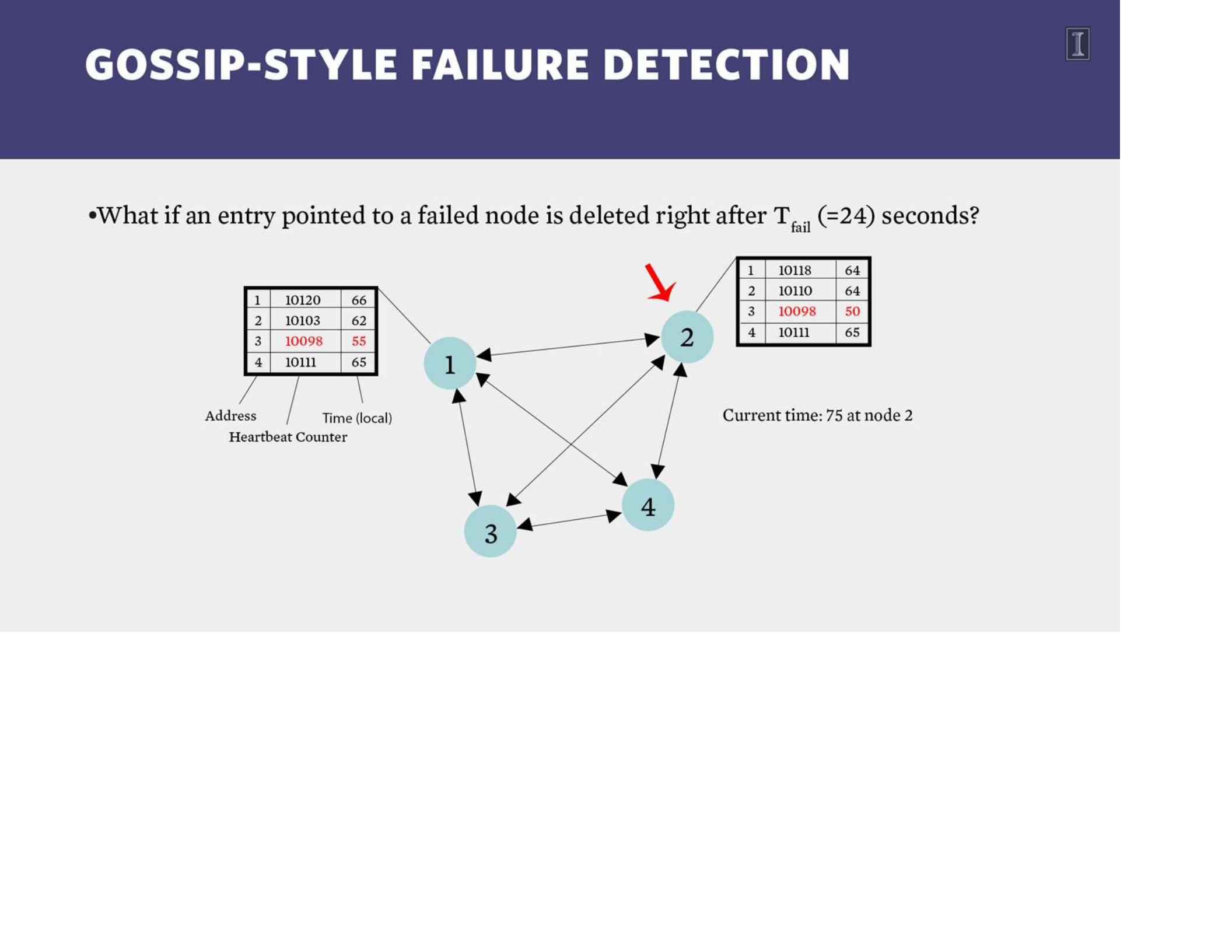
GOSSIP-STYLE FAILURE DETECTION

- If the heartbeat has not increased for more than T_{fail} seconds, the member is considered failed

- And after $T_{cleanup}$ seconds, it will delete the member from the list

- Why two different timeouts?

GOSSIP-STYLE FAILURE DETECTION



•What if an entry pointed to a failed node is deleted right after T_{fail} (=24) seconds?

1	10120	66
2	10103	62
3	10098	55
4	10111	65

Address

Heartbeat Counter

Time (local)

1

2

3

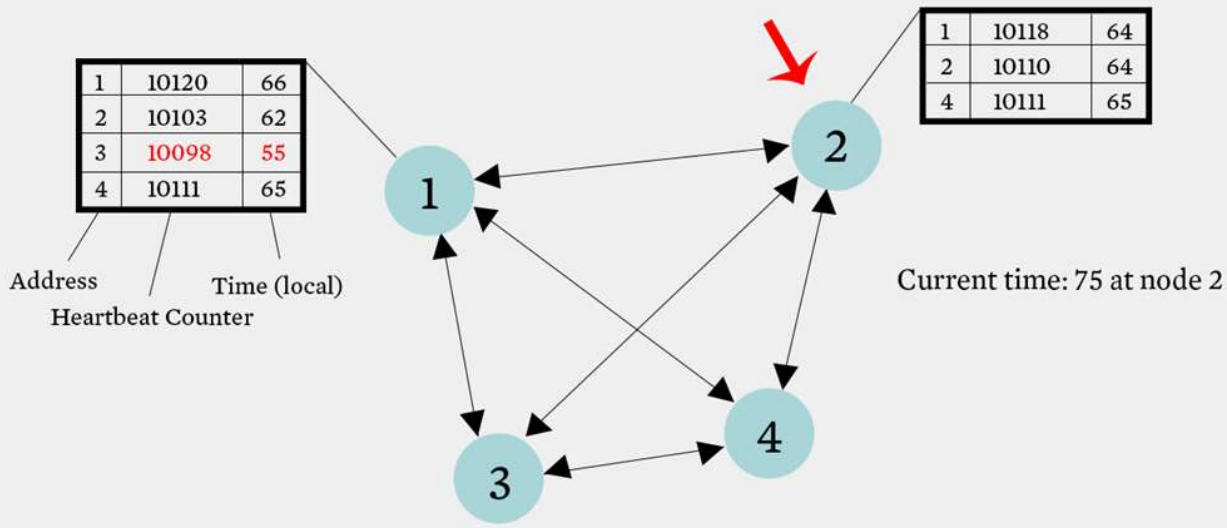
4

1	10118	64
2	10110	64
3	10098	50
4	10111	65

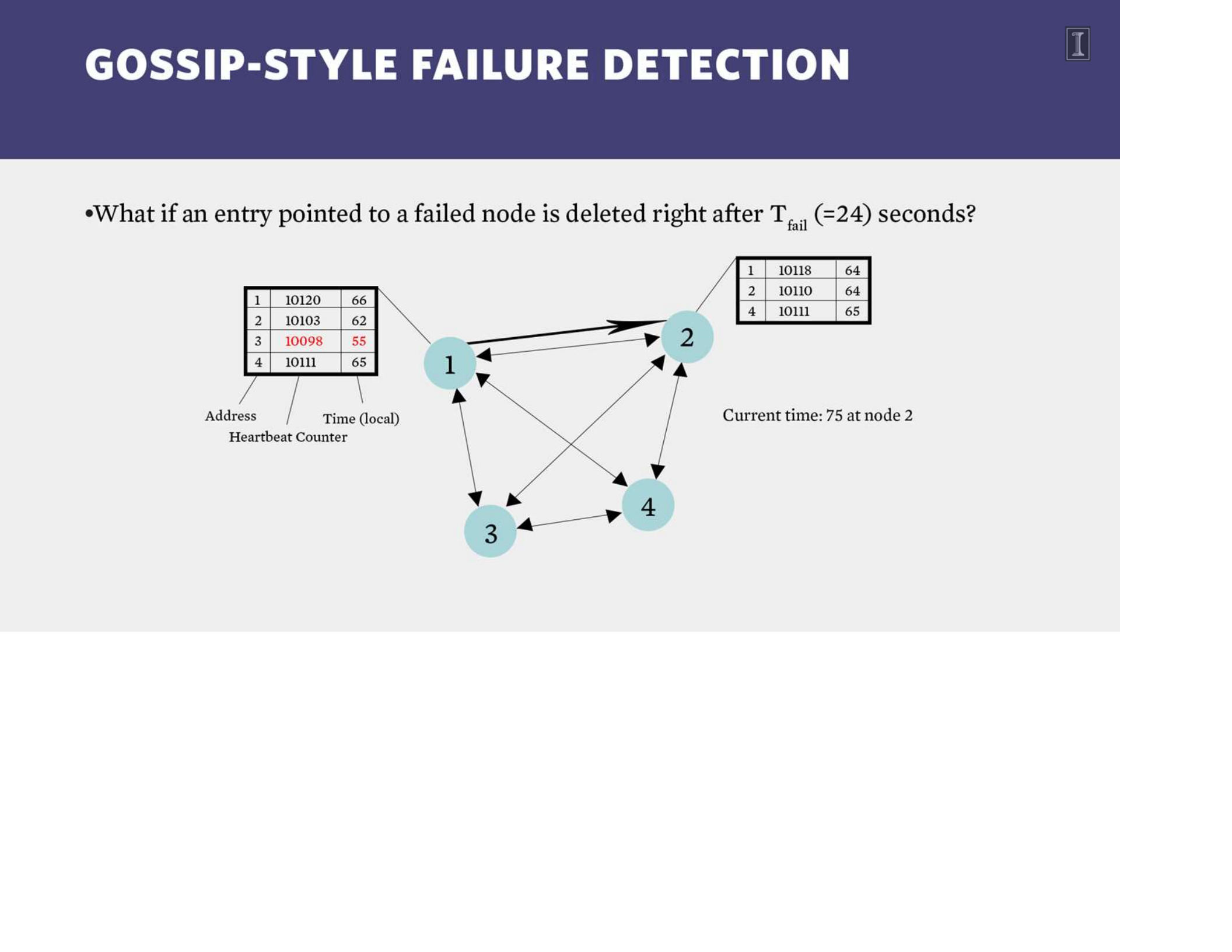
Current time: 75 at node 2

GOSSIP-STYLE FAILURE DETECTION

•What if an entry pointed to a failed node is deleted right after T_{fail} (=24) seconds?



GOSSIP-STYLE FAILURE DETECTION



•What if an entry pointed to a failed node is deleted right after T_{fail} (=24) seconds?

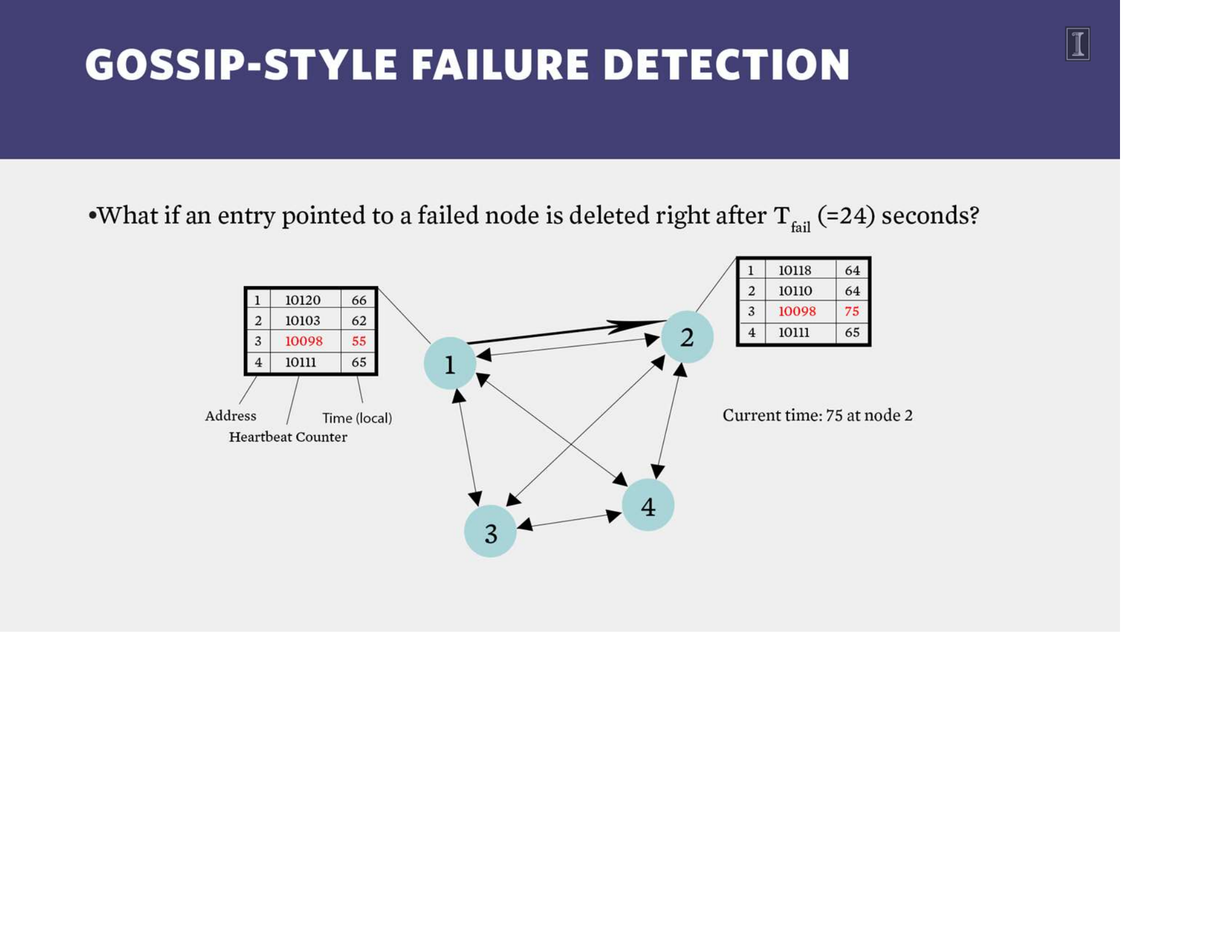
1	10120	66
2	10103	62
3	10098	55
4	10111	65

Address
Heartbeat Counter
Time (local)

1	10118	64
2	10110	64
4	10111	65

Current time: 75 at node 2

GOSSIP-STYLE FAILURE DETECTION



•What if an entry pointed to a failed node is deleted right after T_{fail} (=24) seconds?

1	10120	66
2	10103	62
3	10098	55
4	10111	65

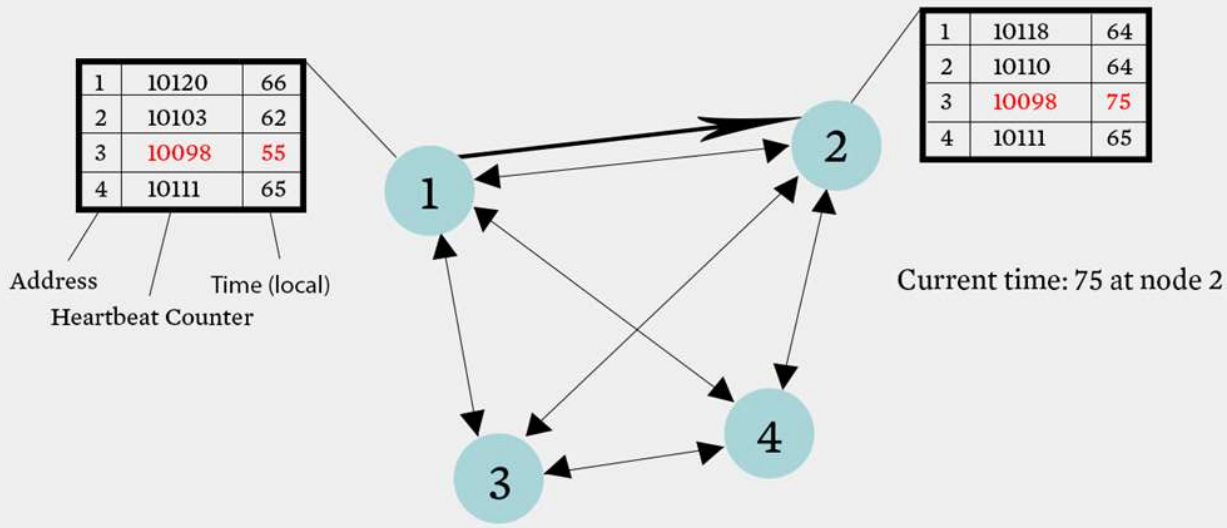
Address
Heartbeat Counter
Time (local)

1	10118	64
2	10110	64
3	10098	75
4	10111	65

Current time: 75 at node 2

GOSSIP-STYLE FAILURE DETECTION

•What if an entry pointed to a failed node is deleted right after T_{fail} (=24) seconds?



• Fix: remember for another T_{fail}