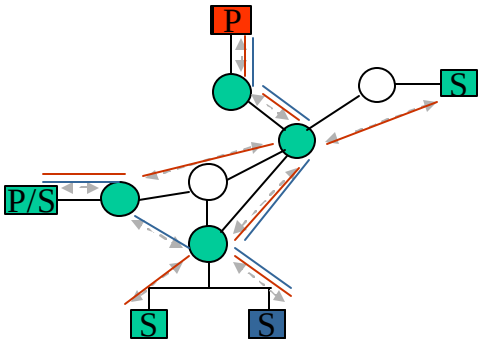
Publish-Subscribe Networks

http://www-net.cs.umass.edu

Pub-Sub networking:

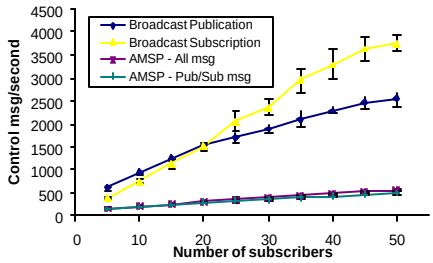
- publishers: announcements
- subscribers: subscription requests
- data disseminated by match-of interest
- publications/subscriptions change over time

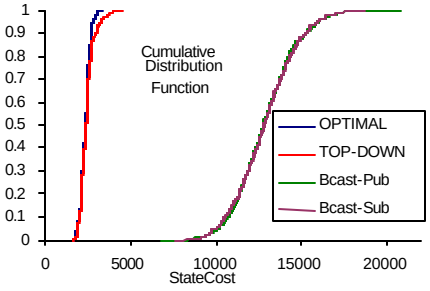


Applications: multi-player games, distributed simulations

Active Matchmaker Signaling Protocol

- interest matching performed within network
- each network link stores publication or subscription state.
- goal: minimize network state





Minimizing amount of state

- shared multicast tree - greedy algorithm
- per-source multicast tree - optimally solvable in polynomial time
- top-down link-marking scheme -sub-optimal
- significant reduction of control overhead

Active Topology Discovery Protocol

- build, maintain signaling overlay among sparsely deployed active nodes
- congruent with source-based trees
- adapt/reflect changes in topology
- reliable, one-hop multiplexed signaling channel to upstream node
- building block to other services: e.g., AFSP, AER/NCA, pgm