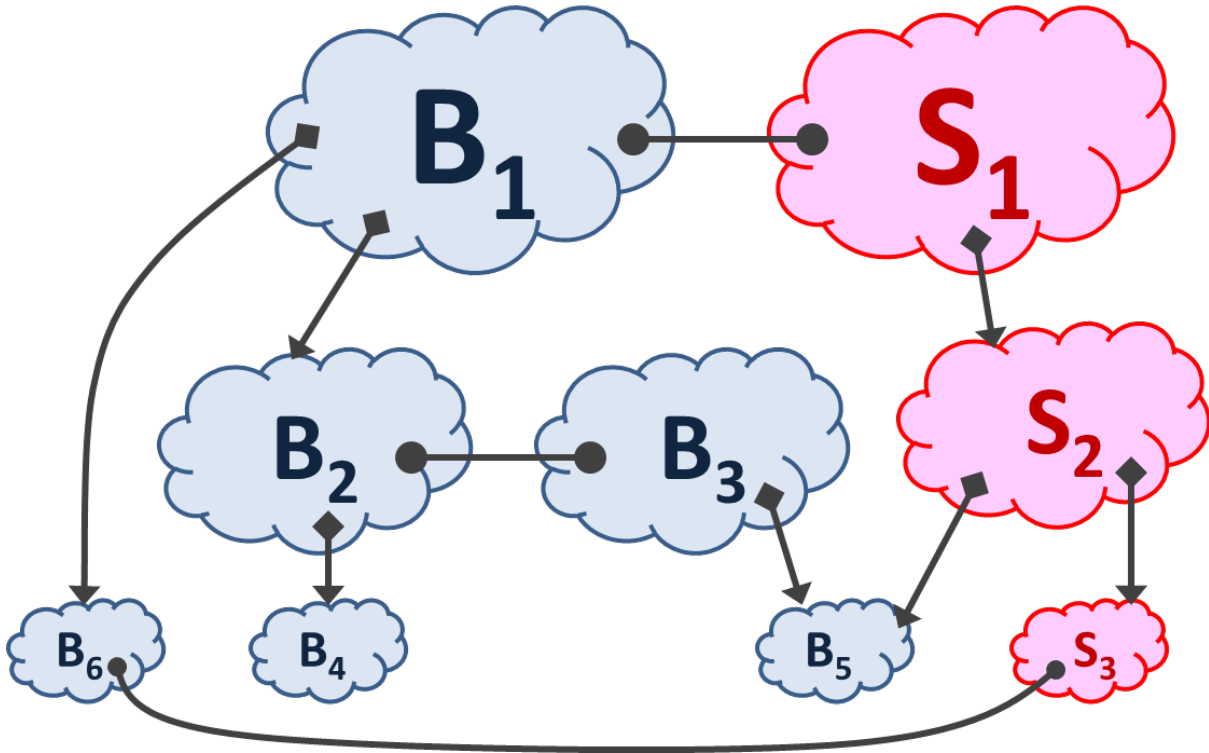


CS168 Fall 2014 Discussion Section 3

The almighty Berkeley Kingdom and the not-so-almighty Stanford Kingdom are connected in the following map. The hierarchy is as follows: Kingdoms dominate Fiefdoms, and Fiefdoms dominate Serfdoms.



Assume standard selection and export policies:

Selection: Prefer subordinates to peers, peers to superiors

Export: 1. To subordinates, advertise all paths

2. To everyone else, advertise only paths to subordinates

a) Sangjin, a Berkeley serf in **B4** wants to talk to another serf, Qifan, in **B5**. What path does he take, if any?

B4 → B2 → B3 → B5

b) Anurag, another Berkeley serf in **B6** also wants to talk Qifan (**B5**). What path does he take, if any?

B6 → B1 → S1 → S2 → B5

c) Having heard so much about the serf in **B5**, Sylvia, ruler of the Berkeley Kingdom (**B1**), sends a messenger to summon him for a secret mission. What path does the messenger take, if any?

B1 → S1 → S2 → B5

- d) Qifan, now in **B1** after receiving Sylvia's orders, has been told to spy on the serfs in **S3**. What path does he take, if any?

B1 → S1 → S2 → S3

Now suppose Qifan finds out that the serfs in Stanfurd have been scheming a secret world domination plan by summoning evil walking trees. After learning about this, Sylvia declares war with the Stanfurd kingdom. Here are the new policies:

Berkeley

Selection: Prefer subordinates to peers, peers to superiors

Export: 1. To Berkeley subordinates, advertise all paths
2. To everyone else in Berkeley, advertise only paths to subordinates
3. NEVER advertise anything to Stanfurd

Stanfurd

Selection: Prefer subordinates to peers, peers to superiors

Export: 1. To Stanfurd subordinates, advertise all paths
2. To everyone else in Stanfurd, advertise only paths to subordinates
3. NEVER advertise anything to Berkeley

- e) Peter, another Berkeley serf in **B6**, wants to visit **B5**. What path does he take, if any?

No path!

- f) The Stanfurd overlord in **S1** decides to invade the serfdom **B5**. What path does his/her army take, if any?

S1 → S2 → B5

- g) Having learned about the invasion, Sylvia also sends her army from **B1** to protect **B5**. What path does her army take, if any?

No path!

- h) On the map above, add any number of links such that all nodes, including the ones in Stanfurd, can reach the battleground **B5**. Remember to specify the hierarchical relationship between the two ends of the link(s).

There are many possibilities: Connect B4 (or B1, B2, B6) and B5, with the former being the superior (provider) and latter being the subordinate (customer)