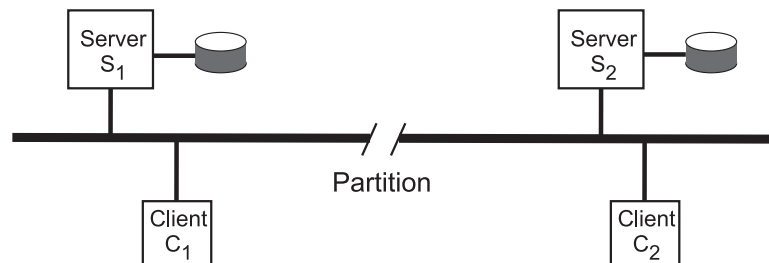


Homework Assignment 8

ECE 151 / CMPSC 171 - Spring 2013

Due Monday, June 3

1. (a) In a distributed object-based system, describe the purpose of the stub on the client-side and the skeleton on the server-side.
(b) What do we mean by marshalling and unmarshalling of messages?
2. The NFS distributed file system supports an implicit share reservations approach. Suppose that a client has opened a file for read and that the current denial state is READ.
(a) Is it possible for a second client to request to open the file for write? Explain why or why not.
(b) Suppose that the second client who is requesting to open a file for write also requests a denial state for READ. Will his request be granted? Explain why or why not.
3. In the Coda distributed file system, each file server S_i maintains a Coda Version Vector $CVV_i(f)$ for each file f that it stores. Initially, S_1 sends version 1 of file f to S_2 .
(a) Consider the following scenario:
 - (i) Client C_1 obtains a copy of the file f from S_1 , updates it, and sends the update to the servers S_1 and S_2 .
 - (ii) Next, client C_2 obtains a copy of the file f from server S_2 .
 - (iii) Then, a network partition occurs as shown in the figure below.
 - (iv) Client C_2 updates the file, and sends the update to the servers S_1 and S_2 .



After the sequence of events (i) through (iv), what are the Coda Version Vectors held by server S_1 and by server S_2 ?

(b) Now, the network partition is healed, so that communication is restored.

What happens next to reconcile the versions of the file that the servers S_1 and S_2 hold? After that reconciliation, what are the Coda Version Vectors held by server S_1 and by server S_2 ?

4. (a) Explain the difference between a Web Server and a Web Service.

(b) What do each of the acronyms HTTP and SOAP stand for, and what are each of these protocols used for?