

Tutorial 4

Naming

1. Give an example of where an address of an entity E needs to be further resolved into another address to actually access E.
2. Would you consider a URL such as *http://www.acme.org/index.html* to be location independent?
3. Give some examples of true identifiers.
4. Is an identifier allowed to contain information on the entity it refers to?
5. Considering that a two-tiered home based approach is a specialisation of a hierarchical location service, where is the root?
6. In a hierarchical location service with a depth of k , how many location records need to be updated at most when a mobile entity changes its location? (Note: changing location is a combination of an insert and a delete operation).
7. Consider an entity moving from location A to B, while passing several intermediate locations where it will reside for only a relatively short time. When arriving at B, it settles down for a while. Changing an address in a hierarchical location service may still take a relatively long time to complete, and should therefore be avoided when visiting an intermediate location. How can the entity be located at an intermediate location?
8. The root node in hierarchical location services may become a potential bottleneck. How can this problem be effectively circumvented?
9. Give an example of how the closure mechanism for a URL could work.
10. High-level name servers in DNS, that is, name servers implementing nodes in the DNS name space that are close to the root, generally do not support recursive name resolution. Can we expect much performance improvement if they did?
11. Explain how DNS can be used to implement a home-based approach to locating mobile hosts.
12. Counting common files is a rather naive way of defining semantic proximity. Assume you were to build a semantic overlay network based on text documents, what other semantic proximity function can you think of?
13. Consider a distributed file system that uses per-user name spaces. In other words, each user has his own, private name space. Can names from such name spaces be used to share resources between two different users?