ECSE-6600: Internet Protocols

Informal Quiz #12: Naming/DNS

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Naming and DNS (Slide set #13): Informal Quiz
A name always refers to a single access point (or network interface).

Name resolution is a special case of a general indirection problem of ID-to-location mapping.

The separation of names from location addresses is attractive in part because the mapping can be deferred and changed.

Name spaces allow flexible structuring of names.

The use of DNS, routing/forwarding, ARP is an example of composing naming domains to access a resource given a URL.

URLs and URNs allow the integration of name spaces and resolution methods.

DNS is a distributed database offering strong consistency and atomicity guarantees.

DNS cannot be used to do the inverse mapping from an IP-address to a name.

The DNS name tree is organized as a hierarchy of non-overlapping zones.

The SRV record type refers only to a name server implementing the represented zone.

IPv6 address mappings require a AAAA DNS record.

/etc/hosts is an example of a flat namespace.
Naming/DNS

- The two types of resolution methods in DNS are recursive and iterative.
- Caching in DNS is the same as pre-fetching.
- The “dig” program allows the querying of the DNS system.
- DNS maintains strict consistency amongst the cached DNS entries.
- The early X.500 vision is now broken down into a set of layers: DNS, directories and discovery services.
- Discovery services like Jini provide more dynamism and plug-and-play capabilities compared to directories which essentially provide attribute-based searches (yellow-pages).
- ENUM allows telephone numbers to be written DNS-style and helps in the deployment of internet telephony.
- Today’s internet architecture suffers from overloading of ID semantics and subsequent brittleness.
- Advanced naming systems propose further layers of indirections and new IDs for services, entitites etc.
- Mobile IP is actually an example for dynamic/late-binding between an entity ID and a location ID.
- Explicit delegation will allow the integration of middleboxes seamlessly into the Internet architecture.