System Administration

Domain Name System (DNS)

Why DNS?

What is a registrar?

Who is in charge?

Can I just create my own?
Domain Name Hierarchy
(sample data)

- google.com
- horgoth.com
- cs.dixie.edu
- dixie.edu
- edu
- net
- com

- au.net
- dsctux.net

← pronounced “root”
System Administration

Communication

DNS

DNS Client System

DNS Lookup Server

DNS Authoritative Server

UDP, TCP
DNS Client View

DNS Client System

nameserver1
nameserver2
nameserver3
Search domains

Timeout, Search Domain

DNS Lookup Server

DNS Lookup Server

DNS Lookup Server

1

2

3
DNS Lookup Server View

DNS Client System

DNS Lookup Server

1. in cache?
2. still valid?
3. store in cache

Yes No

4. DNS Authoritative Server
5. DNS Authoritative Server
6. DNS Authoritative Server

TTL, Recursive Lookup, Security (query, recursion)
DNS Authoritative Server View

1. Are you authoritative?
2. Am I authoritative?
   - No
   - Yes

3. Do I have an answer?
   - Yes
   - No

4. Can I delegate?
   - Yes
   - No

5. Query not found

Subdomain, Delegation
System Administration

Master/Slave

Authoritative Server Views

DNS

DNS Authoritative Master

/etc/bind/Zone files

0. Zone request

1. Zone transmission

DNS Authoritative Slave

/var/cache/bind

Zone files

Notify, Serial number