

DNS: THE INTERNET'S WHITE PAGES

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DOMAIN NAMES, REGISTRARS, AND ICANN

OH MY!

- google.com
- redfinsolutions.net
- nerdsummit.org
- rfsdev.tk

THE DOMAIN NAME SYSTEM IS HIERARCHICAL

Each of these things exists inside a "gTLD"

gTLD - Generic Top-Level Domain

ICANN: OVERSEEING THE GTLD'S

- Internet Corporation for Assigned Names and Numbers
- In charge of approving gTLD "registries"
- "com" gTLD is currently managed/owned by Verisign
- "registrars" are approved by the gTLD registry

BUY YOUR DOMAIN NAME FROM A REGISTRAR

- GoDaddy, Hover, Namecheap
- Often these guys work with multiple gTLD's
- Enter Administrative and Technical Contacts
- WHOIS
- *see <http://lifehacker.com/5943452/five-best-domain-name-registrars>*

OK, NOW WHAT?

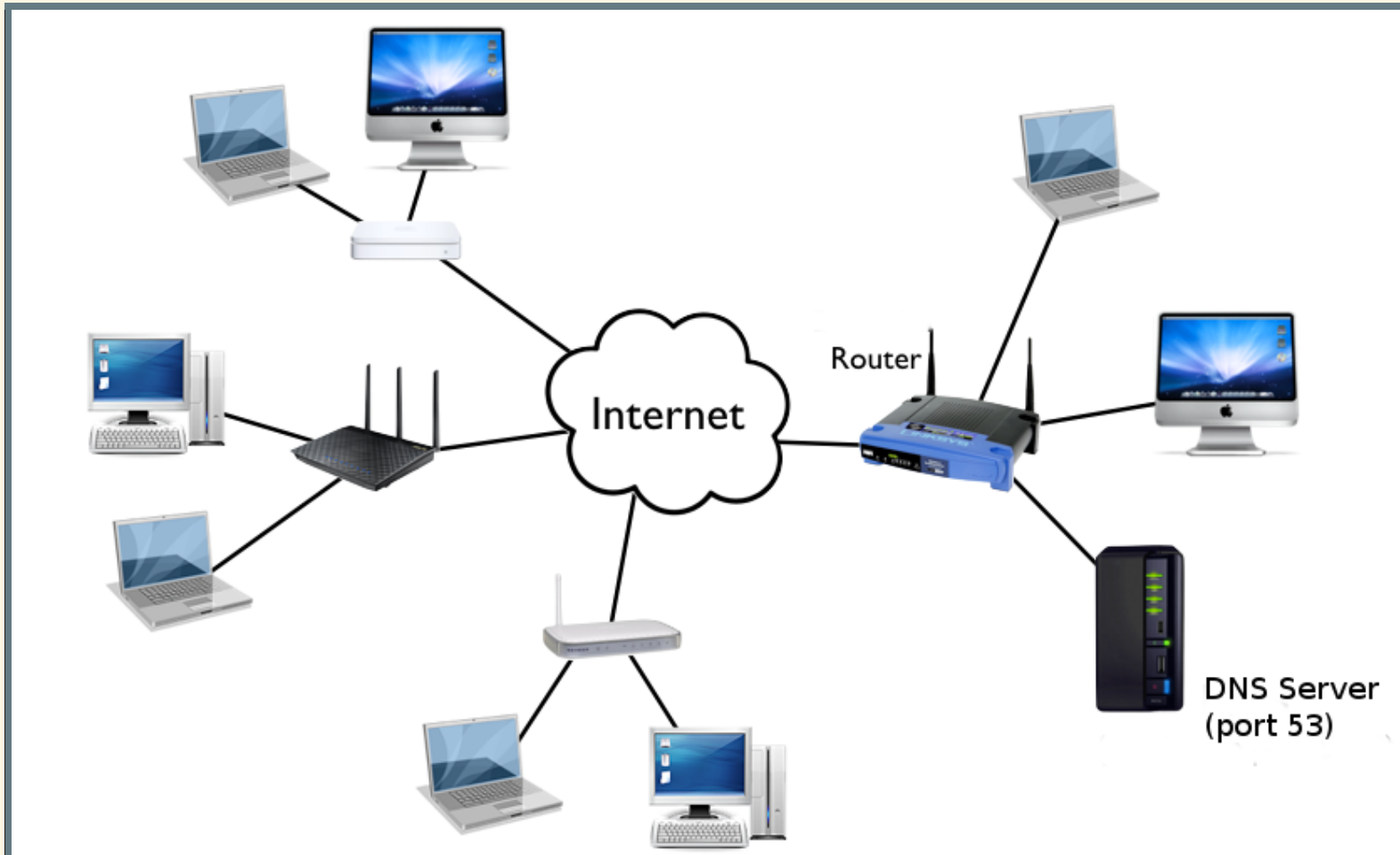
REGISTRARS ARE ALSO DNS HOSTS (USUALLY)

If not, you can use a separate DNS host

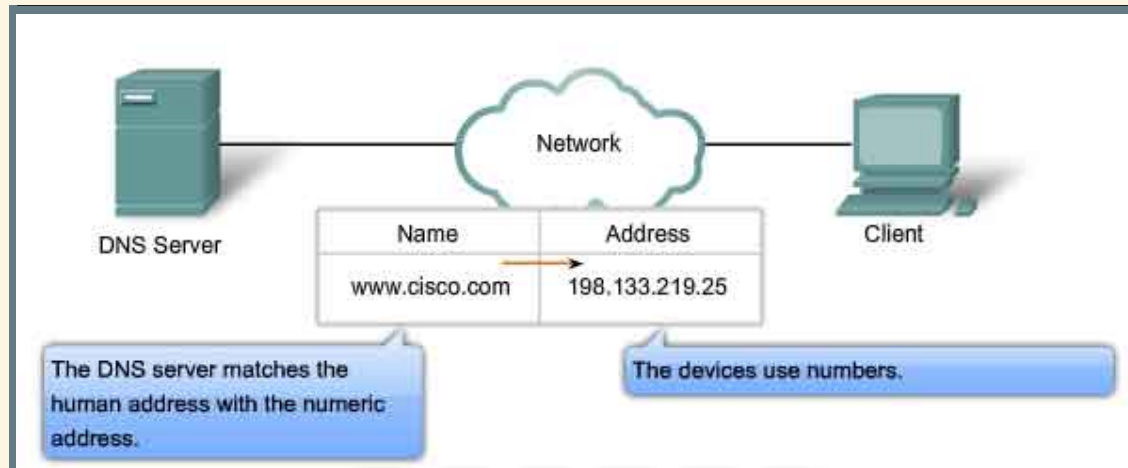
- CloudDNS (<http://cloudns.net>)
- DNS Made Easy (<http://dnsmadeeasy.com>)

WHAT THEY DO...

Reminder - how does the Internet work?



A SIMPLE DNS REQUEST (A RECORD)



- Typically DNS server from your ISP
- Could also be a "public" DNS service
 - Google (8.8.8.8)
 - OpenDNS (208.67.222.222, 208.67.220.220)

BUT HOW DOES THAT 'PHONE BOOK' GET POPULATED?

- get a request for a domain name
- if I have it in my cache, and it's valid, give it to the client
- if I do not have it, or it's past its *TTL* (time to live), ask the "master"

SO WHO ARE THE 'MASTERS' OF YOUR DOMAIN?

This is controlled by the "nameservers," our first type of record.

- NS - can be an IP or another DNS name
- Tells where to go to get the DEFINITIVE answer
- That is, "Who should I ask if I don't know?"
- Might be server from your registrar, or from your web host, or a custom DNS host

DOMAIN RECORDS

- Domain Host provides interface to all records
- You specify what routes where for your domain
 - ...and everything below!

ADDRESS (A) RECORDS

- The simplest record, it simply stores a name to a number.
- Your "root record" (whybuyfish.com, often annotated as @) should always be an A record.
- You can store multiples and one will be given in rotation (round robin)

CANONICAL NAME (CNAME) RECORDS

- Used to reference another record and use that
- For example, you might make the "www" *subdomain* a CNAME to @ (root).
 - That is, your domain without the w's and with the w's will both point to the same place.
- PRO: if you change your root record, the www subdomain follows suit.
- CON: performance - two lookups

MAIL EXCHANGER (MX) RECORDS

- used for receiving email
- typically applied without a subdomain (receive mail @whybuyfish.com)
- MX records are also assigned a "priority" (lower numbers = more preferred)

POINTER (PTR) RECORDS

- Used frequently when SENDing mail
- The system receiving the mail checks who you say you are against who your IP says you are
- These records work largely in reverse - get a name given a number

TEXT (TXT) RECORDS

- store arbitrary text for a domain (or subdomain)
- often used for email authentication/spam prevention (SPF records), or other domain verification (Google Webmaster Tools)

WILDCARDS

Some places will let you use a "wildcard" for subdomains.

That is, you can use a star/asterisk (*) to create a record for "any subdomain"

SOME HELPFUL TOOLS

- nslookup
- whois.net

SUMMARY

- Get domain from a registrar
- Set the nameservers appropriately
- Set the records you want for your domain
 - A for web
 - MX for mail
 - PTR for mail verification
 - SPF for spam protection