Instructions for TAs

• Add these entries to your ‘hosts’ file:
  – 192.232.222.190 nsa.gov
  (also feel free to set up a dodgy DNS server etc.)

• Burn these instructions after reading
DNS and HTTP!
http://www.pandaexpress.com

• ‘ping www.pandaexpress.com’: 65.91.7.210
http://65.91.7.210

• ‘ping www.pandaexpress.com’: 65.91.7.210
• DNS: DDB of RR

  – “Domain Name System: distributed database storing resource records”

• Format: (name, value, type, ttl)

• Types:
  – A
  – NS
  – PTR
  – CNAME
  – MX
http://www.nsa.gov

- What’s wrong?
  - Why isn’t this the National Scrabble Association?
http://www2.scrabble-assoc.com

- ‘ping www2.scrabble-assoc’: 64.77.84.73
The webpage cannot be found

Most likely causes:
- There might be a typing error in the address.
- If you clicked on a link, it may be out of date.

What you can try:
- Retype the address.
- Go back to the previous page.
- Go to and look for the information you want.
- More information

HTTP 400

• ‘ping www2.scrabble-assoc’: 64.77.84.73
Hostname works, IP address doesn’t. You can’t explain that.
Unmasking the stealthy NSA

$ telnet 64.77.84.73 80
GET / HTTP/1.0

HTTP/1.1 400 Bad Request
Content-Type: text/html
Date: Wed, 17 Oct 2012 04:13:42 GMT
Connection: close
Content-Length: 39

<h1>Bad Request (Invalid Hostname)</h1>Connection to 64.77.84.73 closed by foreign host.

$ telnet 64.77.84.73 80
GET / HTTP/1.0
Host: scrabble-assoc.com

HTTP/1.1 200 OK
Connection: close
Date: Wed, 17 Oct 2012 04:30:21 GMT
Server: Microsoft-IIS/6.0
X-Powered-By: ASP.NET
Content-Length: 17644
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQSAQDTQA=GMLHAOPCHHHFEEJCJCNEDMIO; path=/...
HTTP is Stateless

• When would we want to store state?
• How/where?
  – What principle does this follow from?
Non-persistent TCP connection

1 RTT

TCP SYN

TCP SYN-ACK

TCP ACK + HTTP REQUEST

TCP ACK + HTTP RESPONSE

TCP ACK

TCP FIN

TCP FIN-ACK

TCP ACK

+ transmission
Easy ways to order!

1. Go to store
2. Order burger
3. Go to store
4. Order drink
5. Go to store
6. Order fries

1. Go to store
2. Order burger
3. Order drink
4. Order fries

1. Go to store with two friends
2. Each person orders one item (in parallel)

1. Go to store
2. Order burger, drink and fries

WWW.IN-N-OUT.COM