

LBSC 690 Session #2
FTP, "Hello World!" HTML

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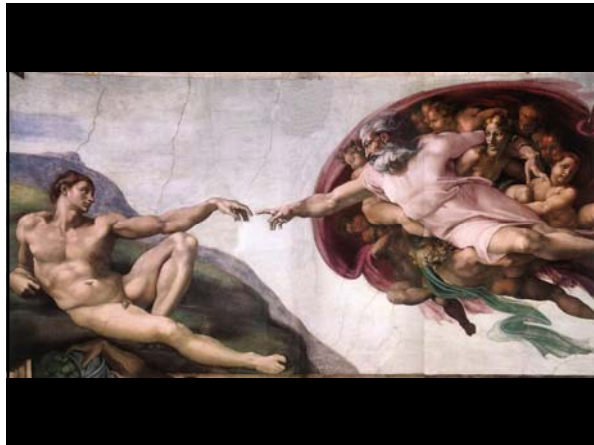
Wednesday, September 10, 2008



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Goals

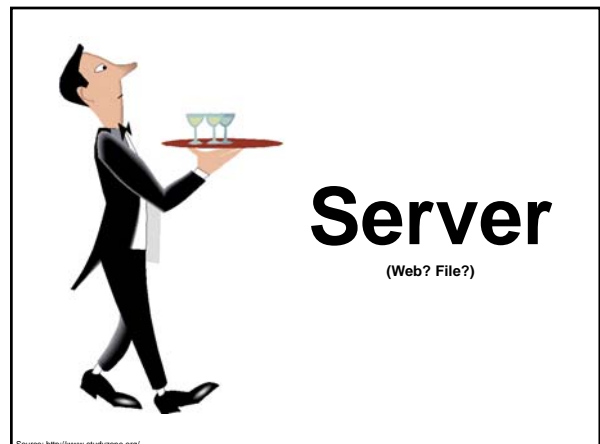
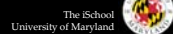
- o Gain a better understanding of networking
- o Build you very own homepage!



Operating System

Paths

- o How do you specify the location of files on your hard drive?
 - o The folder metaphor
 - Hierarchically nested directories
 - Absolute vs. relative paths
- `/afs/wam.umd.edu/home/wam/jl/jimmylin/home`
`C:\Documents and Settings\Jimmy Lin\My Documents`
- `../pub`
`../Desktop`
- File extensions?



"Hello World" HTML

```
<html>
<head>
<title>Hello World!</title>
</head>
<body>
<p>Hello world! This is my first webpage!</p>
</body>
</html>
```

This is the header

This is the actual content of the HTML document



Uploading Your Page

- Connect to "terpconnect.umd.edu"
- Change directory to "/pub/**USERID**"
- Upload files
- Your very own home page at:
<http://www.wam.umd.edu/~USERID/>



Why Code HTML by Hand?

- The only way to learn is by doing
- WYSIWYG editors...
 - Often generate unreadable code
 - Ties you down to that particular editor
 - Cannot help you connect to backend databases
- Hand coding HTML allows you to have finer-grained control
- HTML is merely demonstrative of other important concepts:
 - Structured documents
 - Metadata



Tips

- Edit files on your own machine, upload when you're happy
- Save early, save often, just save!
- Reload browser
- File naming
 - Don't use spaces!
 - Punctuation matters!



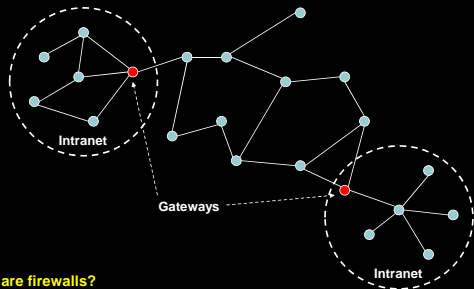
Details...

Internet ≠ Web

- Internet = collection of global networks
- Web = particular way of accessing information on the Internet
 - Uses the HTTP protocol
- Other ways of using the Internet
 - Usenet
 - FTP
 - email (SMTP, POP, IMAP, etc.)
 - Internet Relay Chat



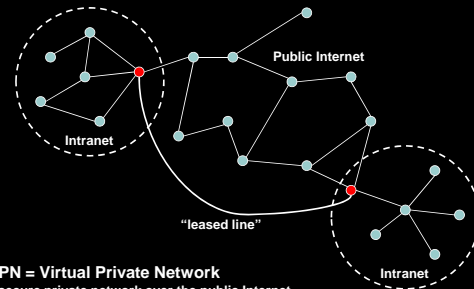
Intranets



What are firewalls?
Why can't you do certain things behind firewalls?

VPNs

Problem: How do you securely connect separate networks?



VPN = Virtual Private Network
a secure private network over the public Internet

Foundations

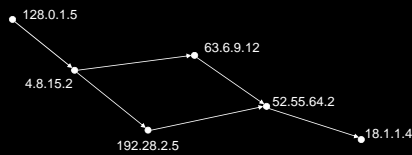
- o Basic protocols for the Internet:
 - TCP/IP (Transmission Control Protocol/Internet Protocol): basis for communication
 - DNS (Domain Name Service): basis for naming computers on the network
- o Protocol for the Web:
 - HTTP (HyperText Transfer Protocol): protocol for transferring Web pages

IP Address

- o Every computer on the Internet is identified by an address
- o IP address = 32 bit number, divided into four "octets"
 - Example: go in your browser and type "http://66.249.93.99/"

Are there enough IP addresses to go around?
What is the difference between static and dynamic IP?

Packet Routing (TCP/IP)



(Much simplified) Routing table for 4.8.15.2

Destination	Next Hop
52.55.*.*	63.6.9.12
18.1.*.*	192.28.2.5/63.6.9.12
4.*.*.*	225.2.55.1
...	

Domain Name Service (DNS)

- o "Domain names" improve usability
 - Easier to remember than numeric IP addresses
 - DNS converts between names and numbers
 - Written like a postal address; specific-to-general
- o Each name server knows one level of names
 - "Top level" name server knows .edu, .com, .mil, ...
 - .edu name server knows umd, mit, stanford, ...
 - .umd.edu name server knows ischool, wam, ...

Demo

- Play with various utilities at
 - <http://network-tools.com/>
 - <http://visualroute.visualware.com/>

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HyperText Transfer Protocol

- Send request

```
GET /path/file.html HTTP/1.0
From: someuser@somedomain.com
User-Agent: HTTPTool/1.0
```

- Server response

```
HTTP/1.0 200 OK
Date: Fri, 31 Dec 1999 23:59:59 GMT
Content-Type: text/html
Content-Length: 1354
<html><body> <h1>Happy New Millennium!</h1> ... </body> </html>
```

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Tell me what happens...

- From the moment you click on "check messages" to the moment you start reading your email
- From the moment you click "send" to the moment the other party receives the email
- From the moment you type a URL and hit "enter" to the moment you see the Web page

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