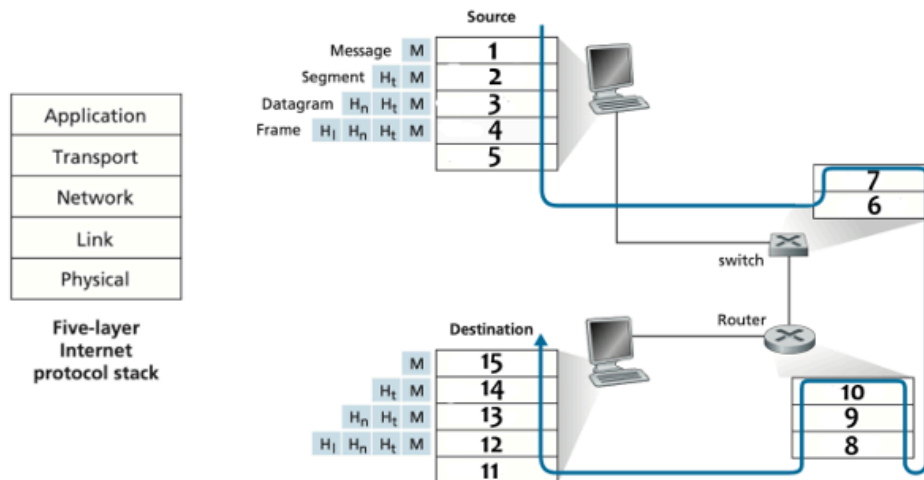


Worksheet Class 3: Addendum: Layering and HTTP

THE NETWORK PROTOCOL STACK AND PROTOCOL LAYERING

In the scenario below, imagine that you're sending an http request to another machine somewhere on the network.



Q1. What layer in the network protocol stack best corresponds to the phrase “processes packets across a variety of applications”

Q2. What layer in the network protocol stack best corresponds to the phrase “passes packets from one machine to the other across a single hop that might be of different mediums”

Q3. What layer in the network protocol stack best corresponds to the phrase “moves and routes packets from the source to the destination”

Q4. What layer in the network protocol stack best corresponds to the phrase “transports bits across a physical medium”

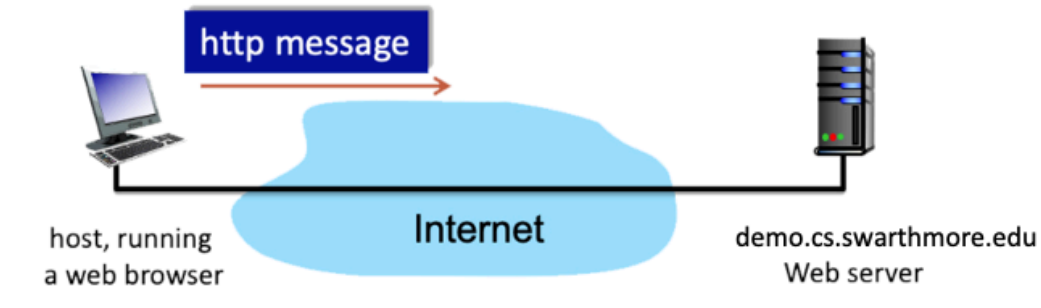
Q5. What layer in the network protocol stack best corresponds to the phrase “handles the delivery of packets from the application layer, may be reliable or unreliable delivery options”

Q6. Identify the layers that correspond to each of the following boxes in the figure above:

- Box 1
- Box 2
- Box 3
- Box 4
- Box 5
- Box 6
- Box 8
- Box 7
- Box 9
- Box 10
- Box 11
- Box 12
- Box 13
- Box 14
- Box 15

THE HTTP GET MESSAGE

Consider the figure below, where a client is sending an HTTP GET message to a web server, gaia.cs.umass.edu



Suppose the client-to-server HTTP GET message is the following:

```
GET /example/index.html HTTP/1.0
Host: demo.cs.swarthmore.edu
If-Modified-Since: Tue, 10 Sep 2024 03:29:39
```

Q1. What is the name of the file that is being retrieved in this GET message?

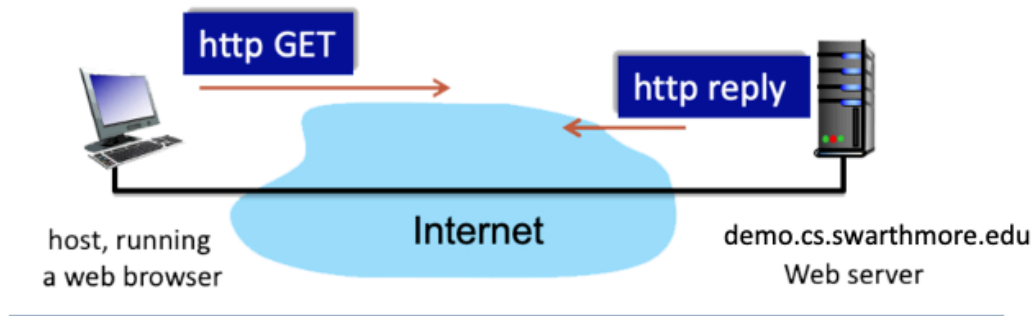
Q2. What protocol and version is the client using in the GET request?

Q3. What is the host that the client is connecting to?

Q4. What do you think the If-Modified-Since header does?

THE HTTP RESPONSE MESSAGE

Consider the figure below, where the server is sending a HTTP RESPONSE message back the client.



Suppose the server-to-client HTTP RESPONSE message is the following:

```
HTTP/1.1 200 OK
```

```
Date: Tue, 10 Sep 2024 10:45:51
```

```
Server: LightHttpd
```

```
Last-Modified: Tue, 10 Sep 2024 10:53:51
```

```
Content-Length: 9884
```

```
Content-type: image/html
```

Q1. What protocol and version is the server using in the HTTP response?

Q2. Was the server able to send the document successfully?

Q3. What is the type of the file being sent by the server in the response?

Q4. What is the length of the content that the server claims for the file being sent? Can you trust this value?