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HTTP Requests and Responses

1. What type of architecture does the HTTP request and response process occur in?

\*Client-server Archittecture

1. What are the different parts of an HTTP request?

\*The different parts of HTTP are request the line, the request header, and request body

1. Which part of an HTTP request is optional?

\*The request body

1. What are the three parts of an HTTP response?

\*The three parts are status line, header and response body

1. Which number class of status codes represents errors?

\*500 codes are server errors, 400 codes are client errors

1. What are the two most common request methods that a security professional will encounter?

\*The two most common request are GET and POST

1. Which type of HTTP request method is used for sending data?

\*POST request

1. Which part of an HTTP request contains the data being sent to the server?

\*The request body

1. In which part of an HTTP response does the browser receive the web code to generate and style a web page?

\*Response body

Using Curl

1. What are the advantages of using curl over the browser?

\*Using Curl lets you see response status line and can be automated, and you can edit while using it.

1. Which curl option is used to change the request method?

\*Curl option -x followed by request method.

1. Which curl option is used to set request headers?

\*The -H you can add header to request

1. Which curl option is used to view the response header?

\*-I you can view the response header

1. Which request method might an attacker use to figure out which HTTP requests an HTTP server will accept?
   * Attacker will use OPTIONS request method

Sessions and Cookies

* + 1. Which response header sends a cookie to the client?

HTTP/1.1 200 OK

Content-type: text/html

Set-Cookie: cart=Bob

* + Set- Cookie: cart=bob

2. Which request header will continue the client's session?

GET /cart HTTP/1.1

Host: www.example.org

Cookie: cart=Bob

* + Cookie will send request header cart=Bob with Get request

**Example HTTP Requests and Responses**

POST /login.php HTTP/1.1

Host: example.com

Accept-Encoding: gzip, deflate, br

Connection: keep-alive

Content-Type: application/x-www-form-urlencoded

Content-Length: 34

Upgrade-Insecure-Requests: 1

User-Agent: Mozilla/5.0 (Linux; Android 6.0; Nexus 5 Build/MRA58N) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/80.0.3987.132 Mobile Safari/537.36

username=Barbara&password=password

1. What is the request method?

\*POST

1. Which header expresses the client's preference for an encrypted response?

\*Upgrade- Insecure-Requests:1

1. Does the request have a user session associated with it?
   * No user session is associated with this request
2. What kind of data is being sent from this request body?

\*The site login.php page

HTTP Response

HTTP/1.1 200 OK

Date: Mon, 16 Mar 2020 17:05:43 GMT

Last-Modified: Sat, 01 Feb 2020 00:00:00 GMT

Content-Encoding: gzip

Expires: Fri, 01 May 2020 00:00:00 GMT

Server: Apache

Set-Cookie: SessionID=5

Content-Type: text/html; charset=UTF-8

Strict-Transport-Security: max-age=31536000; includeSubDomains

X-Content-Type: NoSniff

X-Frame-Options: DENY

X-XSS-Protection: 1; mode=block

[page content]

1. What is the response status code?

\*200

1. What web server is handling this HTTP response?

\*Server in response to is Apache

1. Does this response have a user session associated to it?

\*Yes, it does have a session associated the Set-Cookie

1. What kind of content is likely to be in the [page content] response body?

\*Content-type: text/html is the response body contains sites web code

1. If your class covered security headers, what security request headers have been included?

\*In class we covered script-transport-security that tells client should try access to HTTPS over HTTP

**Monoliths and Microservices**

1. What are the individual components of microservices called?

\*Microservices are services that’s separated by functions

1. What is a service that writes to a database and communicates to other services?

\*API- application programming interface

1. What type of underlying technology allows for microservices to become scalable and have redundancy?

\*This allows microservice to be redundant and scalable

#### Deploying and Testing a Container Set

1. What tool can be used to deploy multiple containers at once?

\*Docker- compose

1. What kind of file format is required for us to deploy a container set?

\*YAML files

#### Databases

1. Which type of SQL query would we use to see all of the information within a table called customers?

\*Select\* from customer

1. Which type of SQL query would we use to enter new data into a table? (You don't need a full query, just the first part of the statement.)

INSERT INTO

1. Why would we never run DELETE FROM <table-name>; by itself?

\*This would delete the entire table