Lab Report

ECPE 170 – Computer Systems and Networks – Spring 2021

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Lab Topic: Lab 8: Network Socket Programming (Basic)

Question #1:
What is first line of the python script that starts with #! doing? Where in ECPE 170 have you seen this before?
Answer:
#!/usr/bin/env python3, like #!/bin/bash, specifies which interpreter will be used to run our python scripts. We have obviously seen the latter whenever we've created bash scripts.

Question #2:
Document the HTTP request and the server response when you manually download the HTML file at http://spaceref.com via Netcat.
(By "document", you should provide the full client request and a partial server response (top 40-50 lines is sufficient for me to tell if you downloaded the right file). The script utility can make this capture easy for you - see below.)
Answer:
netcat spaceref.com 80
GET / HTTP/1.1
Host: www.spaceref.com
Connection: close

HTTP/1.1 200 OK
Date: Mon, 22 Mar 2021 05:42:36 GMT
Server: Apache/2.2.22 (Ubuntu)
X-Powered-By: PHP/5.3.10-1ubuntu3.13
Vary: Accept-Encoding
Connection: close
Transfer-Encoding: chunked
Content-Type: text/html

3326
<!DOCTYPE html>
<html lang="en">
<head>
    <title>SpaceRef</title>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />

    <!-- description -->
    <meta name="generator" content="JetBrains PhpStorm/Intercat/Movable Type Pro" />
    <META NAME="description" content="SpaceRef is a space news and reference site. This includes space exploration and missions, a space calendar of events, interactive space news and a space directory and search engine.">
    <META NAME="keywords" content="space,space exploration,nasa watch,astrobiology,mars,space search engine">
    <META NAME="subject" CONTENT="Science:Space">

    <!-- scripts -->
    <script type="text/javascript">var _sf_startpt=(new Date()).getTime()</script>
    <script src="js/main.js" type="text/javascript"></script>
    <!--[if lt IE 9]>

```
    <script src="js/html5shiv.js"></script>
    <![endif]-->

    <meta http-equiv="Content-Script-Type" content="text/javascript" />

    <!-- styles -->
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="css/bootstrap-mod.css" rel="stylesheet">
    <link href="css/bootstrap-responsive.css" rel="stylesheet">
    <link rel="alternate" type="application/atom+xml" title="Atom"
href="http://feeds.feedburner.com/spaceref/jext">
    <link rel="apple-touch-icon" href="http://images.spaceref.com/logos/apple-touch-icon.png" />
    <link rel="icon" type="http://spaceref.com/ico" href="http://spaceref.com/favicon.ico">

    <script type='text/javascript'>
       var googletag = googletag || {};
       googletag.cmd = googletag.cmd || [];
       (function() {
          var gads = document.createElement('script');
          gads.async = true;
          gads.type = 'text/javascript';
          var useSSL = 'https:' == document.location.protocol;
          gads.src = (useSSL ? 'https:' : 'http:') +
                '//www.googletagservices.com/tag/js/gpt.js';
          var node = document.getElementsByTagName('script')[0];
          node.parentNode.insertBefore(gads, node);
       })();
    </script>
```

Question #3:
Document the HTTP request and the server response when you manually download the HTML file at
http://neverssl.com/ via Netcat
Answer:
GET / HTTP/1.1
Host: www.neverssl.com
Connection: close

HTTP/1.1 200 OK
Content-Type: text/html
Content-Length: 2536
Connection: keep-alive
Date: Mon, 22 Mar 2021 05:57:01 GMT
Last-Modified: Thu, 19 Nov 2020 22:29:21 GMT
ETag: "e8bb9152091d61caa9d69fed8c4aebc6"
Accept-Ranges: bytes
Server: AmazonS3
Vary: Accept-Encoding
X-Cache: Miss from cloudfront

Via: 1.1 abc09cc7557c1b633f2222f0c307d884.cloudfront.net (CloudFront)
X-Amz-Cf-Pop: SFO53-C1
X-Amz-Cf-Id: pBycjesobXC4D_JCSNt0CZXQGlsIfSTtt8FLKYnRVzMNrJYeDJD0Zg═

```
<html>
  <head>
    <title>NeverSSL - helping you get online</title>

    <style>
    body {
        font-family: Montserrat, helvetica, arial, sans-serif;
        font-size: 16x;
        color: #444444;
        margin: 0;
    }
    h2 {
        font-weight: 700;
        font-size: 1.6em;
        margin-top: 30px;
    }
    p {
        line-height: 1.6em;
    }
    .container {
        max-width: 650px;
        margin: 20px auto 20px auto;
        padding-left: 15px;
        padding-right: 15px
    }
```

Question #4:
(4) Document the HTTP request and the server response when you manually download the PNG image file at http://spaceref.com/img/logo_320red.png via Netcat
Note: Is there a good reason why it doesn't make sense to include the server response (at least, the data portion) in your lab report? On a related note, if your Terminal window hangs during this step, at least you'll know why!
Answer:
// since the image is encoded, the server response looks like gibberish! But it's supposed to so it's cool

netcat www.spaceref.com 80
GET /img/logo_320red.png HTTP/1.1
Host: www.spaceref.com
Connection: close

HTTP/1.1 200 OK
Date: Mon, 22 Mar 2021 06:33:18 GMT
Server: Apache/2.2.22 (Ubuntu)
Last-Modified: Fri, 06 May 2016 14:21:30 GMT

ETag: "12434f-c74-5322d2cd8a159"
Accept-Ranges: bytes
Content-Length: 3188
Connection: close
Content-Type: image/png

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