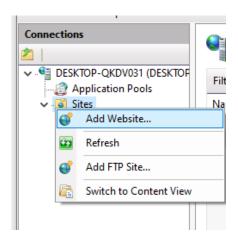
متین جعفرآقایی - ۹٦٣١٩٠٣

آزمایشگاه شبکه های کامپیوتری

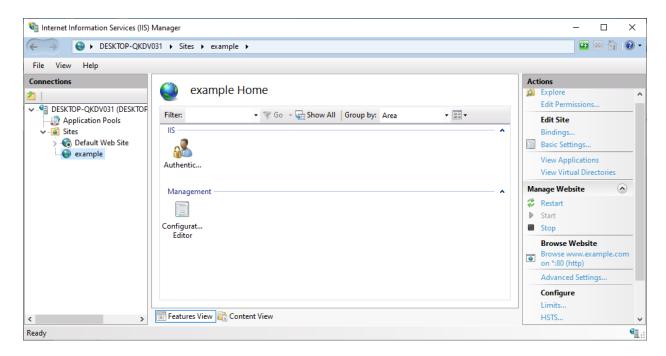
راهاندازی سرویسهای WEB و FTP

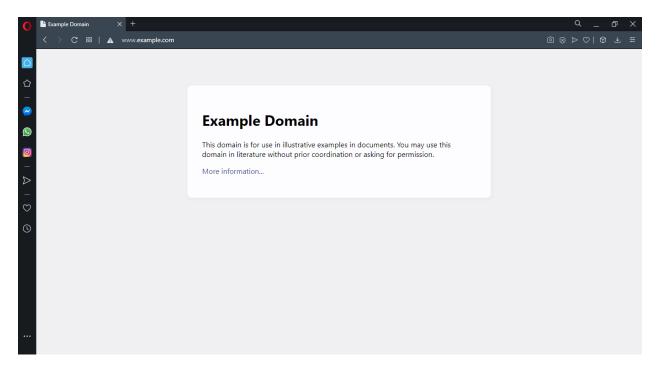
تنظيمات سرور Web

١.



Add Website Site name: example example Select... Content Directory Physical path: ... C:\test Pass-through authentication Connect as... Test Settings... Binding Type: IP address: v 80 ✓ All Unassigned http Host name: www.example.com Example: www.contoso.com or marketing.contoso.com ✓ Start Website immediately ОК Cancel





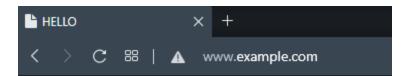
پاسخ سوال ۱: زیرا در DNS داخلی سیستم این آدرس به bind ،localhost نشده است.

۶

```
■ hosts
C: > Windows > System32 > drivers > etc > ■ hosts
      # Copyright (c) 1993-2009 Microsoft Corp.
      # This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
      # This file contains the mappings of IP addresses to host names. Each
      # entry should be kept on an individual line. The IP address should
      # be placed in the first column followed by the corresponding host name.
     # The IP address and the host name should be separated by at least one
     # space.
      # Additionally, comments (such as these) may be inserted on individual
      # lines or following the machine name denoted by a '#' symbol.
      # For example:
      #
             102.54.94.97
      #
                              rhino.acme.com
                                                      # source server
              38.25.63.10
                              x.acme.com
                                                       # x client host
      # localhost name resolution is handled within DNS itself.
      # 127.0.0.1
                          localhost
                          localhost
      0.0.0.0 license.piriform.com
      0.0.0.0 www.ccleaner.com
      127.0.0.1 www.example.com
```

```
C:\Users\matin>ipconfig /flushdns
Windows IP Configuration
Successfully flushed the DNS Resolver Cache.
```

٨



Hello World!

This is a simple application.

پاسخ سوال ۲: بله، بسته مربوط به سایت مشخص است. اتفاق بدی نیافتاده است.

.11

No.	Time	Source	Destination	Protocol	Length Info
	53 270.673532	127.0.0.1	127.0.0.1	TCP	108 58085 → 80 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	54 270.673641	127.0.0.1	127.0.0.1	TCP	108 80 → 58085 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	55 270.673721	127.0.0.1	127.0.0.1	TCP	84 58085 → 80 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
	56 270.674047	127.0.0.1	127.0.0.1	HTTP	568 GET / HTTP/1.1
	57 270.674089	127.0.0.1	127.0.0.1	TCP	84 80 → 58085 [ACK] Seq=1 Ack=485 Win=2619648 Len=0
	61 270.675020	127.0.0.1	127.0.0.1	HTTP	484 HTTP/1.1 200 OK (text/html)
	62 270.675060	127.0.0.1	127.0.0.1	TCP	84 58085 → 80 [ACK] Seq=485 Ack=401 Win=2619392 Len=0
	63 270.751327	127.0.0.1	127.0.0.1	HTTP	498 GET /favicon.ico HTTP/1.1
	64 270.751374	127.0.0.1	127.0.0.1	TCP	84 80 → 58085 [ACK] Seq=401 Ack=899 Win=2619136 Len=0
	65 270.760527	127.0.0.1	127.0.0.1	HTTP	5098 HTTP/1.1 404 Not Found (text/html)
	66 270.760606	127.0.0.1	127.0.0.1	TCP	84 58085 → 80 [ACK] Seq=899 Ack=5415 Win=2614272 Len=0
		127.0.0.1	127.0.0.1		86 [TCP Keep-Alive] 58085 → 80 [ACK] Seq=898 Ack=5415 Win=2614272 Len=1
		127.0.0.1	127.0.0.1		108 [TCP Keep-Alive ACK] 80 → 58085 [ACK] Seq=5415 Ack=899 Win=2619136 Len=0 SLE=898 SRE=899
		127.0.0.1	127.0.0.1		86 [TCP Keep-Alive] 58085 → 80 [ACK] Seq=898 Ack=5415 Win=2614272 Len=1
		127.0.0.1	127.0.0.1		108 [TCP Keep-Alive ACK] 80 → 58085 [ACK] Seq=5415 Ack=899 Win=2619136 Len=0 SLE=898 SRE=899
	86 395.695207	127.0.0.1	127.0.0.1	TCP	84 80 → 58085 [RST, ACK] Seg=5415 Ack=899 Win=0 Len=0

پاسخ سوال ۳: آدرس پورتهای مبدا و مقصد 127.0.0.1 میباشد. ابتدا یک ارتباط TCP برقرار می شود، سپس در بستر آن پیام HTTP GET ارسال می شود تا ارتباط در پروتکل HTTP برقرار شود. وبسرور آدرس سایت درخواستی را از طریق DNS داخلی سیستم واقع در قایل hosts تشخیص می دهد.

```
Hypertext Transfer Protocol
   GET / HTTP/1.1\r\n
    [Expert Info (Chat/Sequence): GET / HTTP/1.1\r\n]
         [GET / HTTP/1.1\r\n]
         [Severity level: Chat]
         [Group: Sequence]
      Request Method: GET
      Request URI: /
      Request Version: HTTP/1.1
   Host: www.example.com\r\n
   Connection: keep-alive\r\n
   Pragma: no-cache\r\n
   Cache-Control: no-cache\r\n
   Upgrade-Insecure-Requests: 1\r\n
   User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.4147.105 Safari/537.36 OPR/70.0.3728.106\r\n
   Accept: text/html,application/xhtml+xml,application/xmljq=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9\r\n
   Accept-Encoding: gzip, deflate\r\n
   Accept-Language: en-US,en;q=0.9\r\n
   \r\n
   [Full request URI: http://www.example.com/]
   [HTTP request 1/2]
   [Response in frame: 61]
   [Next request in frame: 63]
```

پاسخ سوال ۴: مقدار بخش Connection برابر با keep-alive می باشد. در خواست HTTP از توع GET بوده است. مقدار بخش user Agent برابر با

Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.4147.105 Safari/537.36 OPR/70.0.3728.106 مى باشد. اين بخش مرور گر مورد استفاده كاربر را نشان مى دهد.

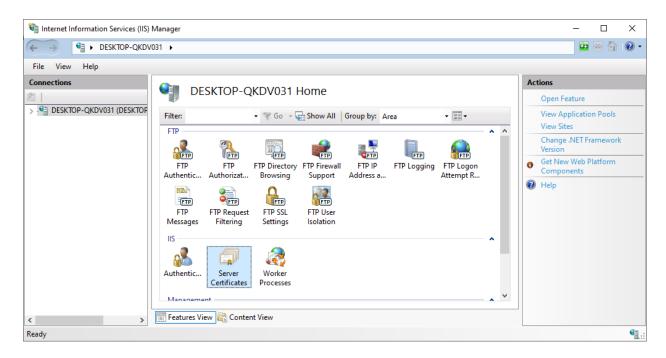
```
Flags: 0x002 (SYN)

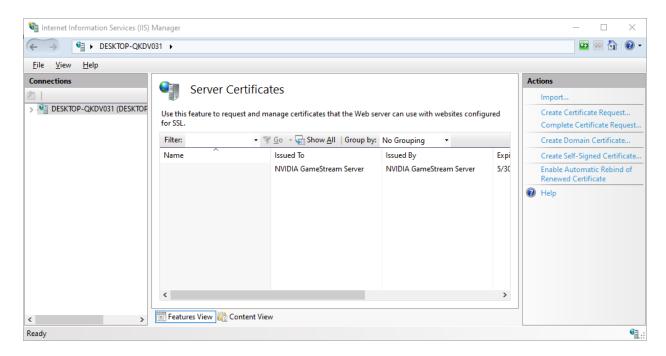
000. ... = Reserved: Not set
...0 ... = Nonce: Not set
...0 ... = Congestion Window Reduced (CWR): Not set
...0 ... = ECN-Echo: Not set
...0 ... = Urgent: Not set
...0 ... = Acknowledgment: Not set
...0 ... = Push: Not set
...0 ... = Reset: Not set
...0 ... = Reset: Not set
...0 = Fin: Not set
...0 = Fin: Not set
```

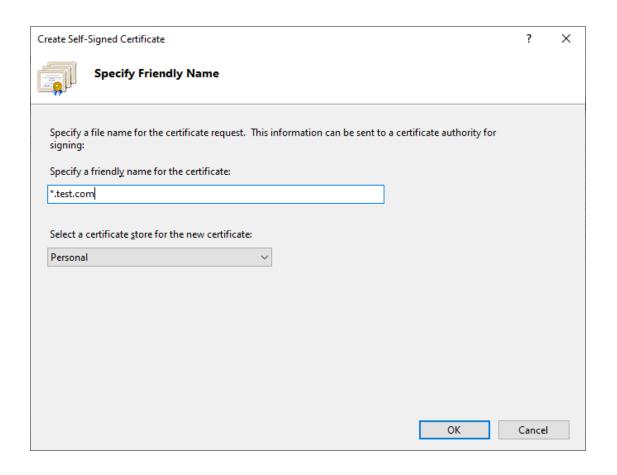
پاسخ سوال ۵: تنها Flag مربوط به Syn ست شده است که یعنی این یک پیام SYN میباشد.

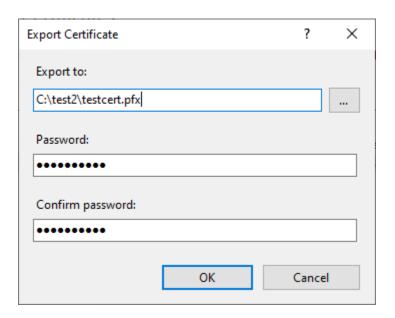
پاسخ سوال ۶: آدرس Host آنها متفاوت است.

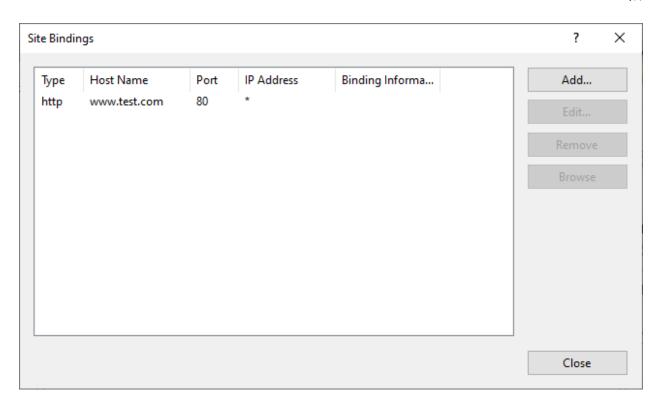
پاسخ سوال ۷: زیرا دو Host متفاوت در این آدرس قرار دارند و وبسرور نمی داند منظور ما کدام یک است.

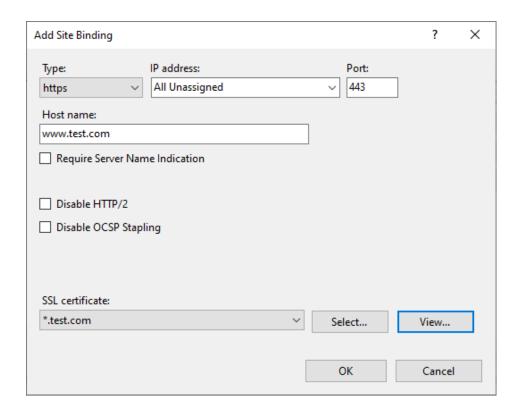


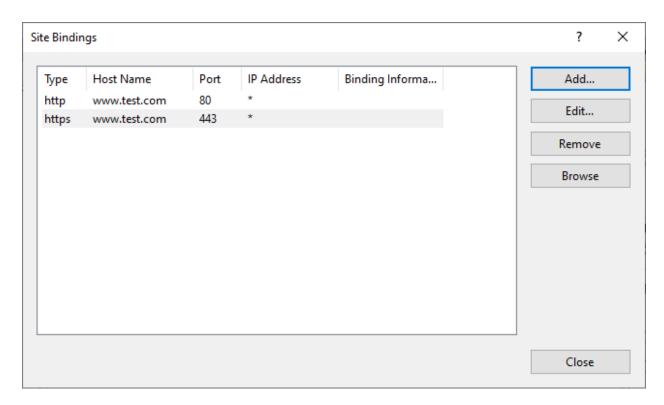


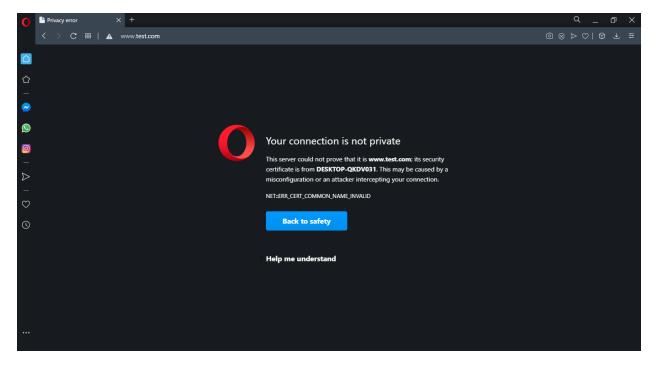












پاسخ سوال ۸: بله، مرورگر در مورد امنیت ارتباط اخطار میدهد.

پيغام TLS به نامشخص بودن گواهي اشاره مي كند.





Your connection is not private

This server could not prove that it is **www.test.com**; its security certificate is from **DESKTOP-QKDV031**. This may be caused by a misconfiguration or an attacker intercepting your connection.

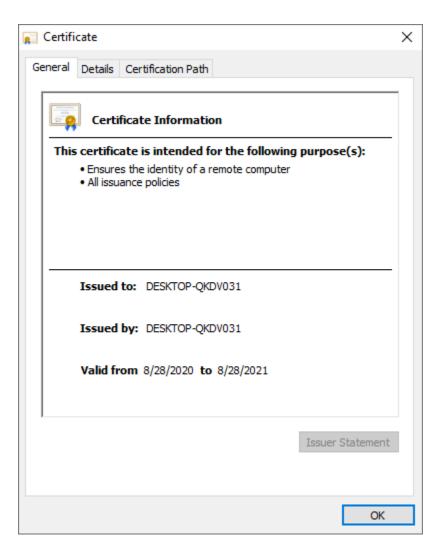
NET::ERR CERT COMMON NAME INVALID

Back to safety

Help me understand

When you connect to a secure website, the server hosting that site presents your browser with something called a "certificate" to verify its identity. This certificate contains identity information, such as the address of the website, which is verified by a third party that your computer trusts. By checking that the address in the certificate matches the address of the website, it is possible to verify that you are securely communicating with the website you intended, and not a third party (such as an attacker on your network).

Proceed to www.test.com (unsafe)

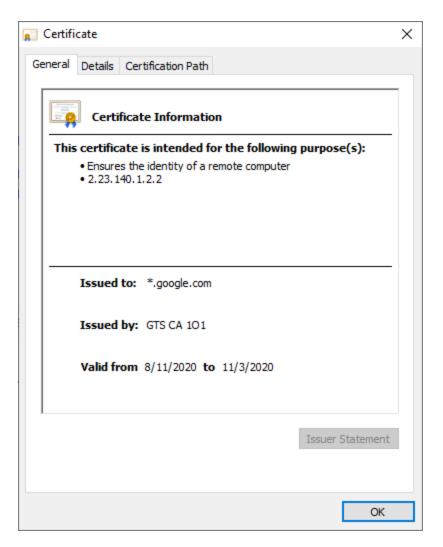


پاسخ سوال ۹: گواهی را DESKTOP-QKDV031 برای DESKTOP-QKDV031 صادر کرده است. مدت زمان اعتبار آن یک سال میباشد. کلید عمومی صادر کننده (RSA (2048 Bits است و امضای دیجیتال انجام شده با الگوریتم sha256RSA میباشد.

۲۳.

No.	Time	Source	Destination	Protocol	Length	Info
Г	3 1.663617	127.0.0.1	127.0.0.1	TCP	108	62037 → 443 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	4 1.663727	127.0.0.1	127.0.0.1	TCP	108	443 → 62037 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	5 1.663784	127.0.0.1	127.0.0.1	TCP	84	62037 → 443 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
	6 1.664230	127.0.0.1	127.0.0.1	TLSv1.2	601	Client Hello
	7 1.664276	127.0.0.1	127.0.0.1	TCP	84	443 → 62037 [ACK] Seq=1 Ack=518 Win=2619648 Len=0
	8 1.675884	127.0.0.1	127.0.0.1	TLSv1.2	1332	Server Hello, Certificate, Server Key Exchange, Server Hello Done
	9 1.675931	127.0.0.1	127.0.0.1	TCP	84	62037 + 443 [ACK] Seq=518 Ack=1249 Win=2618368 Len=0
	10 1.676166	127.0.0.1	127.0.0.1	TLSv1.2	91	Alert (Level: Fatal, Description: Certificate Unknown)
	11 1.676206	127.0.0.1	127.0.0.1	TCP	84	443 → 62037 [ACK] Seq=1249 Ack=525 Win=2619648 Len=0
	12 1.676366	127.0.0.1	127.0.0.1	TCP	84	62037 → 443 [FIN, ACK] Seq=525 Ack=1249 Win=2618368 Len=0
	13 1.676399	127.0.0.1	127.0.0.1	TCP	84	443 → 62037 [RST, ACK] Seq=1249 Ack=525 Win=0 Len=0
L	14 1.676415	127.0.0.1	127.0.0.1	TCP	84	443 → 62037 [RST] Seq=1249 Win=0 Len=0

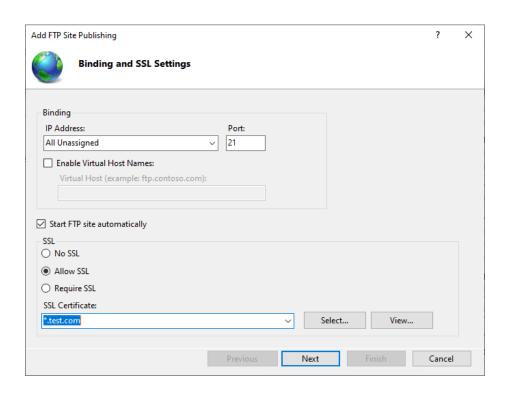
پاسخ سوال ۱۰: متن ارتباط قابل خواندن نیست. زیرا رمزگذاری شده است.

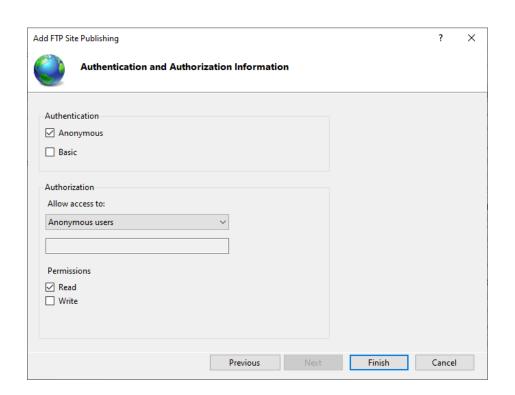


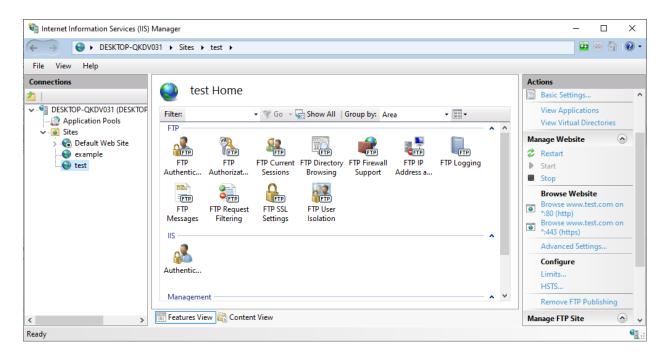
پاسخ سوال ۱۱: توسط GTS CA 101 برای google.com.* صادر شده و مدت اعتبار آن کمتر از ۳ ماه است. همچنین کلید عمومی آن ECC (256 Bits) میباشد.

تنظيمات سرور FTP

١.

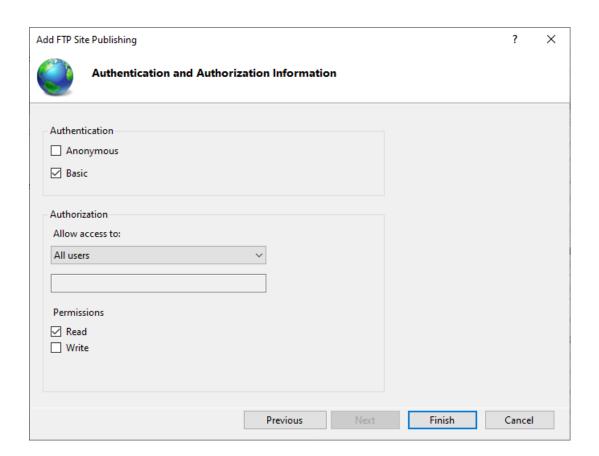






No.	Time	Source	Destination	Protocol	Length Info
	4 11.306443	127.0.0.1	127.0.0.1	TCP	108 63744 → 21 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	5 11.306589	127.0.0.1	127.0.0.1	TCP	108 21 → 63744 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
	6 11.306671	127.0.0.1	127.0.0.1	TCP	84 63744 → 21 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
	7 11.311687	127.0.0.1	127.0.0.1	FTP	111 Response: 220 Microsoft FTP Service
	8 11.311738	127.0.0.1	127.0.0.1	TCP	84 63744 → 21 [ACK] Seq=1 Ack=28 Win=2619648 Len=0
	9 11.311885	127.0.0.1	127.0.0.1	FTP	100 Request: USER anonymous
	10 11.311934	127.0.0.1	127.0.0.1	TCP	84 21 → 63744 [ACK] Seq=28 Ack=17 Win=2619648 Len=0
	11 11.312918	127.0.0.1	127.0.0.1	FTP	156 Response: 331 Anonymous access allowed, send identity (e-mail name) as password.
	12 11.312948	127.0.0.1	127.0.0.1	TCP	84 63744 → 21 [ACK] Seq=17 Ack=100 Win=2619648 Len=0
	13 11.313044	127.0.0.1	127.0.0.1	FTP	109 Request: PASS chrome@example.com
	14 11.313081	127.0.0.1	127.0.0.1	TCP	84 21 → 63744 [ACK] Seq=100 Ack=42 Win=2619648 Len=0
	15 11.314634	127.0.0.1	127.0.0.1	FTP	105 Response: 230 User logged in.
	16 11.314674	127.0.0.1	127.0.0.1	TCP	84 63744 → 21 [ACK] Seq=42 Ack=121 Win=2619648 Len=0
	17 11.314766	127.0.0.1	127.0.0.1	FTP	90 Request: SYST
	18 11.314797	127.0.0.1	127.0.0.1	TCP	84 21 → 63744 [ACK] Seq=121 Ack=48 Win=2619648 Len=0
	19 11.314835	127.0.0.1	127.0.0.1	FTP	100 Response: 215 Windows_NT
	20 11.314863	127.0.0.1	127.0.0.1	TCP	84 63744 → 21 [ACK] Seq=48 Ack=137 Win=2619648 Len=0
	21 11.314942	127.0.0.1	127.0.0.1	FTP	89 Request: PWD
	22 11.314978	127.0.0.1	127.0.0.1	TCP	84 21 → 63744 [ACK] Seq=137 Ack=53 Win=2619648 Len=0
	23 11.315009	127.0.0.1	127.0.0.1	FTP	115 Response: 257 "/" is current directory.
	24 11.315047	127.0.0.1	127.0.0.1	TCP	84 63744 + 21 [ACK] Seq=53 Ack=168 Win=2619392 Len=0

پاسخ سوال ۱۲: برای لیست کردن فایل های دایر کتوری از دستور I- LIST استفاده شده است. از نام کاربری anonymous برای دسترسی به سایت استفاده شده برای این بسته ها است. آدرس پورت مبدا 63744 و آدرس پورت مقصد 21 می باشد.



No.	Time	Source	Destination	Protocol	Length Info
_	46 5.619870	127.0.0.1	127.0.0.1	TCP	108 49279 → 21 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK PERM=1
	47 5.620000	127.0.0.1	127.0.0.1	TCP	108 21 → 49279 [SYN, ACK] Seg=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK PERM=1
	48 5.620083	127.0.0.1	127.0.0.1	TCP	84 49279 + 21 [ACK] Seg=1 Ack=1 Win=2619648 Len=0
	49 5.620366	127.0.0.1	127.0.0.1	FTP	111 Response: 220 Microsoft FTP Service
	50 5.620462	127.0.0.1	127.0.0.1	TCP	84 49279 -> 21 [ACK] Seq=1 Ack=28 Win=2619648 Len=0
()	51 5.620640	127.0.0.1	127.0.0.1	FTP	96 Request: USER matin
·	52 5.620686	127.0.0.1	127.0.0.1	TCP	84 21 → 49279 [ACK] Seq=28 Ack=13 Win=2619648 Len=0
	53 5.620726	127.0.0.1	127.0.0.1	FTP	107 Response: 331 Password required
	54 5.620767	127.0.0.1	127.0.0.1	TCP	84 49279 → 21 [ACK] Seq=13 Ack=51 Win=2619648 Len=0
	55 5.620831	127.0.0.1	127.0.0.1	FTP	101 Request: PASS and the page
	56 5.620873	127.0.0.1	127.0.0.1	TCP	84 21 → 49279 [ACK] Seq=51 Ack=30 Win=2619648 Len=0
	57 5.621393	127.0.0.1	127.0.0.1	FTP	105 Response: 230 User logged in.
	58 5.621462	127.0.0.1	127.0.0.1	TCP	84 49279 → 21 [ACK] Seq=30 Ack=72 Win=2619648 Len=0
	59 5.621620	127.0.0.1	127.0.0.1	FTP	90 Request: SYST
	60 5.621689	127.0.0.1	127.0.0.1	TCP	84 21 → 49279 [ACK] Seq=72 Ack=36 Win=2619648 Len=0
	61 5.621728	127.0.0.1	127.0.0.1	FTP	100 Response: 215 Windows_NT
	62 5.621752	127.0.0.1	127.0.0.1	TCP	84 49279 → 21 [ACK] Seq=36 Ack=88 Win=2619648 Len=0
	63 5.621835	127.0.0.1	127.0.0.1	FTP	89 Request: PWD
	64 5.621893	127.0.0.1	127.0.0.1	TCP	84 21 → 49279 [ACK] Seq=88 Ack=41 Win=2619648 Len=0
	65 5.621932	127.0.0.1	127.0.0.1	FTP	115 Response: 257 "/" is current directory.
	66 5.621960	127.0.0.1	127.0.0.1	TCP	84 49279 -> 21 [ACK] Seq=41 Ack=119 Win=2619648 Len=0

پاسخ سوال ۱۳: بله، نام کاربری و پسورد قابل خواندن هستند.

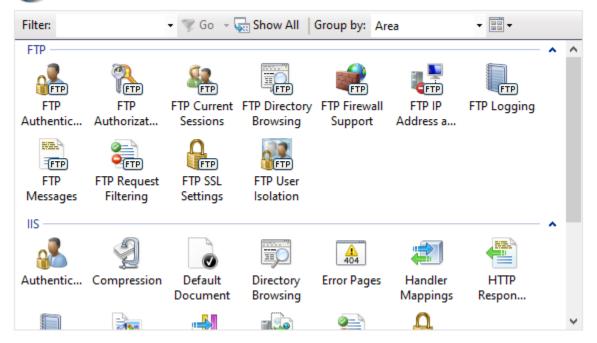
Sites Sites

Filter: ▼ Go → 🔄 Show All Group by: No Grouping →							
Name	ID	Status	Binding	Path			
Default Web Site	1	Started (ht	*:80 (http)	%SystemDrive%			
example	2	Started (ht	www.example.com on *:80 (http)	C:\test			
€ test	3	Started (ht	www.test.com on *:80 (http),ww	C:\test2			

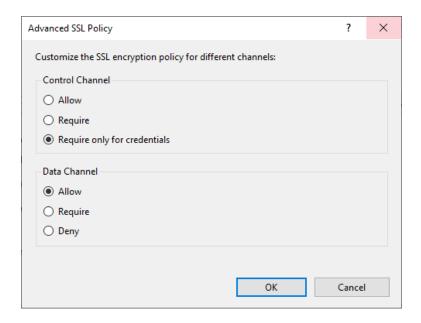
٨



test Home

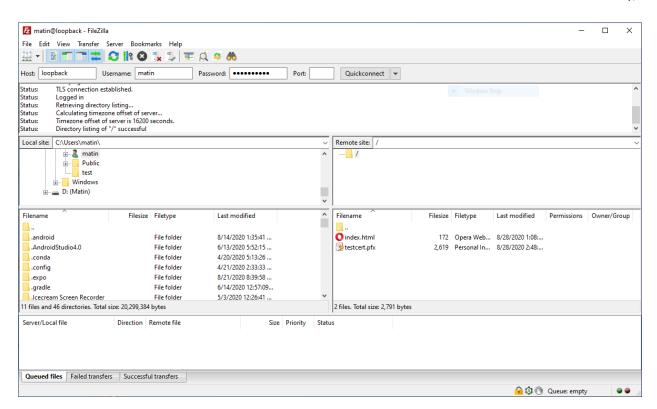


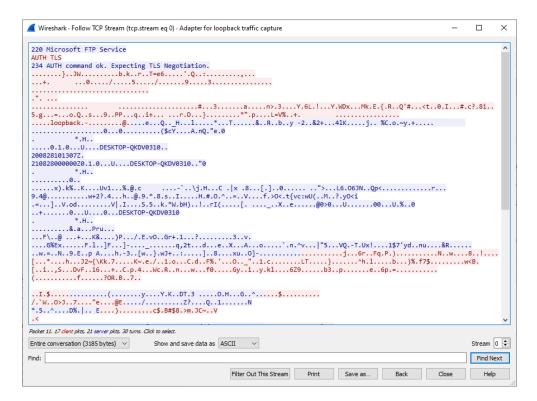
پاسخ سوال ۱۴: Anonymous Authentication غیرفعال است و Basic Authentication فعال است. همچنین به همه کاربران اجازه دسترسی (Read) داده شده است.



پاسخ سوال ۱۵: خیر، اجازه دسترسی داده نمی شود.

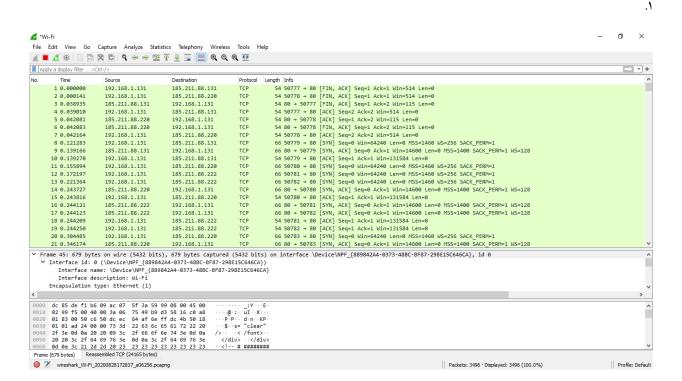
پاسخ سوال ۱۶: برای اینکه اجازه دسترسی داده شود، ارتباط باید از نوع SSL باشد.

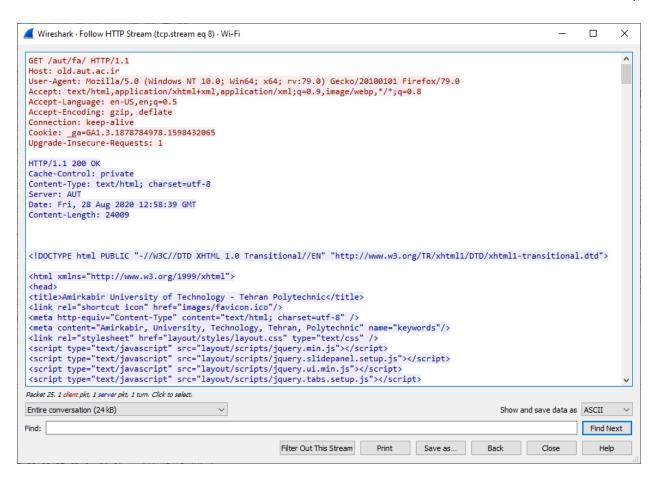




همانطور که مشاهده می شود، اطلاعات رمز گذاری شده است و قابل خواندن نیست.

پروتکل HTTP





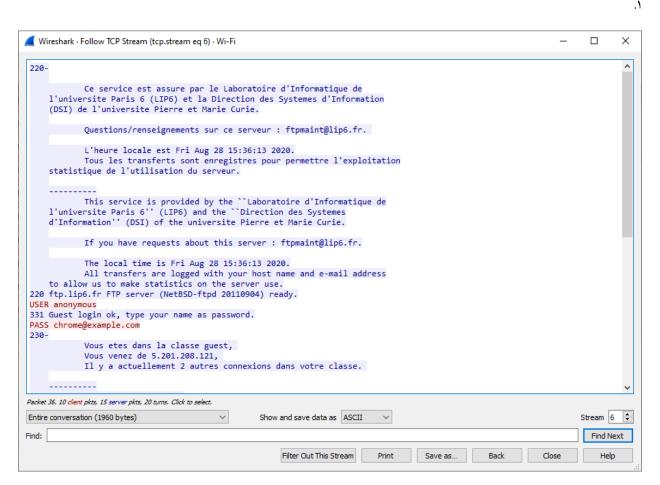
GET /aut/fa/ HTTP/1.1
Host: old.aut.ac.ir
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:79.0) Gecko/20100101 Firefox/79.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Cookie: _ga=GA1.3.1878784978.1598432065
Upgrade-Insecure-Requests: 1

مقدار بخش connection برابر با keep-alive مىباشد. درخواست HTTP از نوع GET است. مقدار User-Agent برابر با Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:79.0) Gecko/20100101 Firefox/79.0

میباشد و نوع مرورگر کاربر را نشان میدهد.

Acknowledgment و Push پرچمهای Set شده هستند و بقیه Not set می باشند.

پروتکل FTP



No.	Time	Source	Destination	Protocol	Length Info
_ 29	8.092883	192.168.1.131	195.83.118.1	TCP	66 64847 → 21 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=256 SACK_PERM=1
32	8.513894	195.83.118.1	192.168.1.131	TCP	66 21 → 64847 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=1400 WS=128 SACK_PERM=1
33	8.513998	192.168.1.131	195.83.118.1	TCP	54 64847 → 21 [ACK] Seq=1 Ack=1 Win=131584 Len=0
34	9.023544	195.83.118.1	192.168.1.131	FTP	60 Response: 220-
35	9.063810	192.168.1.131	195.83.118.1	TCP	54 64847 → 21 [ACK] Seq=1 Ack=7 Win=131584 Len=0
36	9.228276	195.83.118.1	192.168.1.131	FTP	1038 Response:
37	9.228643	192.168.1.131	195.83.118.1	FTP	70 Request: USER anonymous
38	9.535424	195.83.118.1	192.168.1.131	FTP	103 Response: 331 Guest login ok, type your name as password.
39	9.535615	192.168.1.131	195.83.118.1	FTP	79 Request: PASS chrome@example.com
43	9.845175	195.83.118.1	192.168.1.131	FTP	60 Response: 230-
44	9.885012	192.168.1.131	195.83.118.1	TCP	54 64847 → 21 [ACK] Seq=42 Ack=1046 Win=130304 Len=0
47	10.151647	195.83.118.1	192.168.1.131	FTP	397 Response: \tVous etes dans la classe guest,
48	10.151878	192.168.1.131	195.83.118.1	FTP	60 Request: SYST
49	10.354652	195.83.118.1	192.168.1.131	FTP	103 Response: 215 UNIX Type: L8 Version: NetBSD-ftpd 20110904
50	10.354863	192.168.1.131	195.83.118.1	FTP	59 Request: PWD
51	10.459530	195.83.118.1	192.168.1.131	FTP	89 Response: 257 "/" is the current directory.
52	10.459736	192.168.1.131	195.83.118.1	FTP	62 Request: TYPE I
53	10.664366	195.83.118.1	192.168.1.131	FTP	74 Response: 200 Type set to I.
54	10.664617	192.168.1.131	195.83.118.1	FTP	62 Request: SIZE /
56	11.065821	195.83.118.1	192.168.1.131	FTP	80 Response: 550 /: not a plain file.
57	11.066009	192.168.1.131	195.83.118.1	FTP	61 Request: CWD /

TCP پروتکل لایه Transport استفاده شده برای این بسته ها است. آدرس پورت مبدا برابر با 64847 و آدرس پورت مقصد برابر با 21 می باشد.

```
USER anonymous
331 Guest login ok, type your name as password.
PASS chrome@example.com
230-
```

همانطور که مشاهده می شود، مقدار Username برابر با anonymous و مقدار Password برابر با Username می باشد.