UT 12.
NETWORK TOOLS

**Computer Systems
CFGS DAW**

Activities

Aarón Martín Bermejo

a.martinbermejo@edu.gva.es

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Nomenclature

Throughout this unit different symbols will be used to distinguish important elements within the content. These symbols are:

🕮 Important

✒ Attention

🔊 Interesting

UT 12. NETWORK TOOLS
ACTIVITIES

You will need CURL, WGET and DIG installed in your machine in order to carry out these exercises. If you don't want those tools installed in your computer, remember that you can use a virtual machine and installed them there (which I suggest it to you).

1.   CURL

1   Part 1

Specify the CURL command to retrieve the post with the id 5 from jsonplaceholder[1] remembering   that   the   URL   for   it   is https://jsonplaceholder.typicode.com/posts

SOLUTION

```
curl https://jsonplaceholder.typicode.com/posts/5
```

2   Part 2

Specify the CURL commands to create a post in jsonplaceholder and, after it, retrieve it. This is the documentation for it:

https://jsonplaceholder.typicode.com/guide/

SOLUTION

```
curl -X POST -H "Content-Type: application/json" -d '{"title":
"My New Post", "body": "This is my new post!", "userId": 1}'
https://jsonplaceholder.typicode.com/posts
```

After it, the answer will specify the id of the newly created post. To retrieve it, you can use the command of Part 1 changing the id to the one answered by the server.

3   Part 3

Delete the post that you previously created in the part 2. Specify the CURL command to do it.

SOLUTION

```
curl -X DELETE https://jsonplaceholder.typicode.com/posts/[id]
```

Where [id] needs to be replaced by the id got in Part 2.

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1   https://jsonplaceholder.typicode.com/guide/

2. WGET I

Part 1

Try to download the posts from jsonplaceholder using wget. Specify which command would you need to do it.

SOLUTION

```
wget https://jsonplaceholder.typicode.com/posts/
```

Part 2

Try to download the post with id 5 from jsonplaceholder using wget. Specify which command would you need to do it.

SOLUTION

```
wget https://jsonplaceholder.typicode.com/posts/5
```

Part 3

1. How can you create a post using wget?

2. Which are the differences between wget and curl?

SOLUTION

1. You can't, with wget you can only make HTTP GET requests, not without any other HTTP method.

2. The main difference is that WGET only works with HTTP and FTP, CURL works with many different protocols and their specificities.

3. WGET II

Try to download the whole old spacejam website using WGET. You will try to look at the arguments you can specify to achieve it. The URL of the old website is the next one:

https://www.spacejam.com/1996/

SOLUTION

```
mkdir spacejamweb
cd spacejameweb
wget -mpEk https://www.spacejam.com/1996/
```

-m: mirror, shortcut for -N -r -l inf

    -r: recursive

    -l: levels of recursion (inf means infinite)

    -N: only retrieve newer files

-p: get all resources needed to display the HTML page

-E: save HTML resources with proper extensions

-k: convert links

4. DIG

Part 1

Specify the command to get ONLY the IP that resolves of the domain name "portal.edu.gva.es" and "aules.edu.gva.es".

Do they have the same or different IPs? What does that mean?

SOLUTION

```
dig +short portal.edu.gva.es

dig +short aules.edu.gva.es
```

They are not the same, because they are being hosted in different servers.

Part 2

Specify the command to get the path that the DNS query takes from the local machine to the authorative DNS server for the domains "portal.edu.gva.es" and "aules.edu.gva.es"

Are they the same? What does that mean?

SOLUTION

```
dig +trace portal.edu.gva.es

dig +trace aules.edu.gva.es
```

They are not the same, because they are being hosted in different servers.

Part 3

1. Edit the file at /etc/resolv.conf and set the first nameserver to the address 8.8.8.8

2. Repeat the dig trace

3. Is it different from before? Do you know what's happening?

Part 4

1. Modify your hosts file so the domain aules.edu.gva.es is mapped to the address 127.0.0.1.

2. Try the dig again to checkout if it works.

3. Try to access aules. What's happening?

5.   RSYNC

Part 1

Specify the command to synchronize in your local folder /home/youruser/backupsamba a samba that it's mounted in the path /mnt/remotesamba/

SOLUTION

```
rsync /mnt/remotesamba /home/youruser/backupsamba
```

Part 2

Specify the command to synchronize in your local folder "/home/youruser/remotejohn" a remote folder accessible through ssh in the path "/home/john/files" if the IP of the computer is 172.21.17.45.

SOLUTION

```
rsync john@172.21.17.45:/home/john/files /home/youruser/remotejohn
```