وَقُل رَّبِّ زِدْنِي عِلْمًا

FINAL PROJECT

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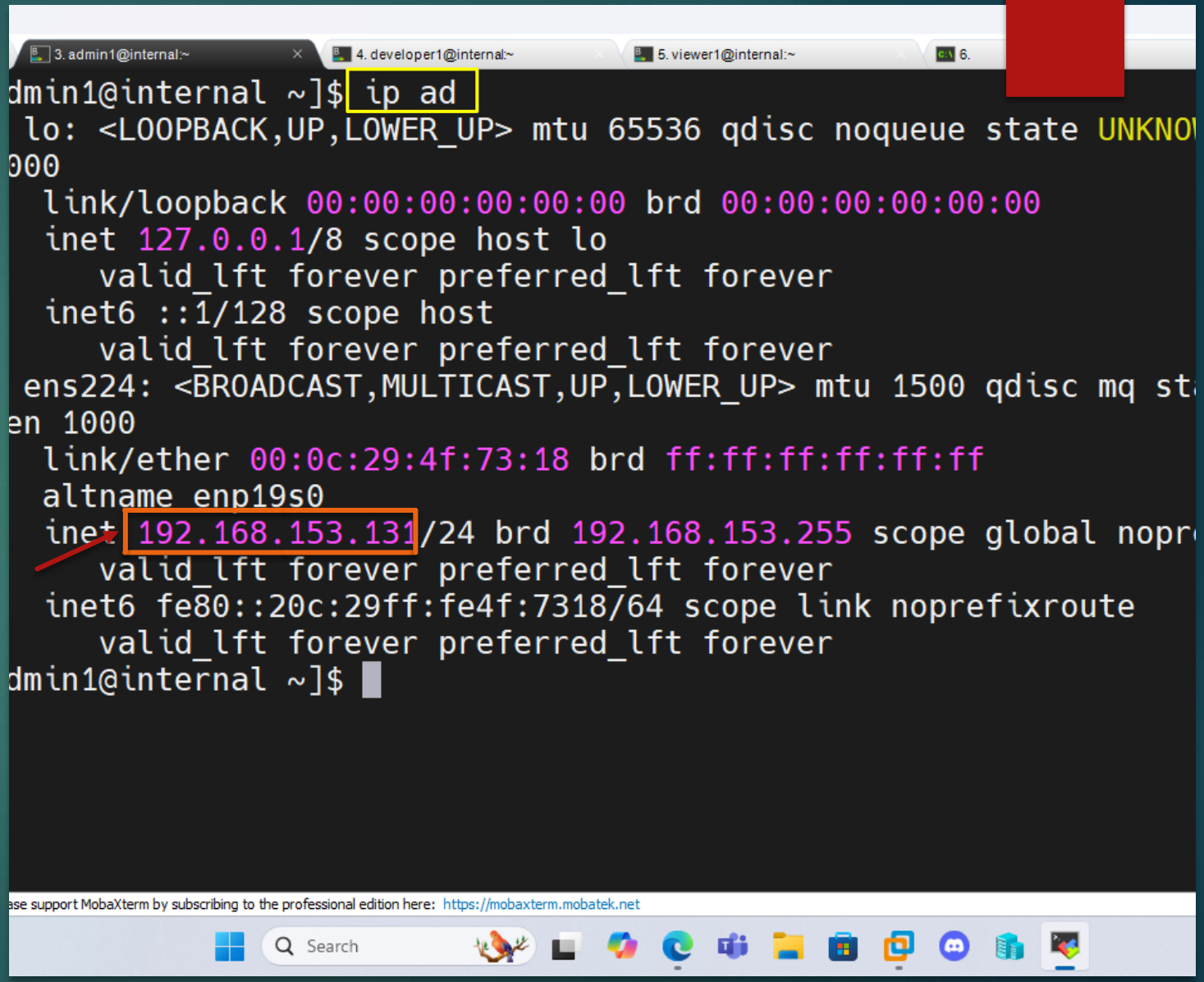
Made by ENG : Mahmoud Hamed

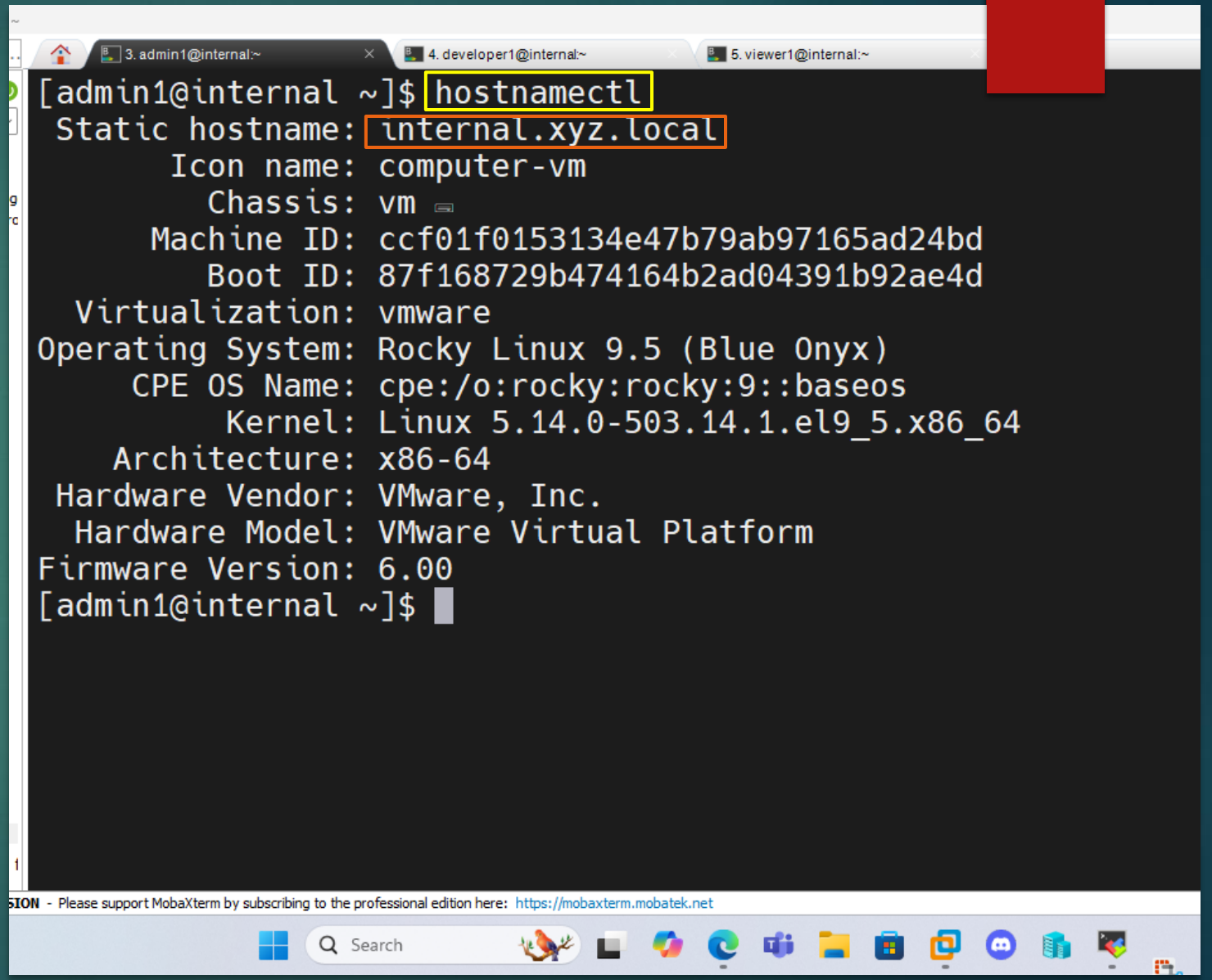
IP Address Configuration (nmcli&ip add)

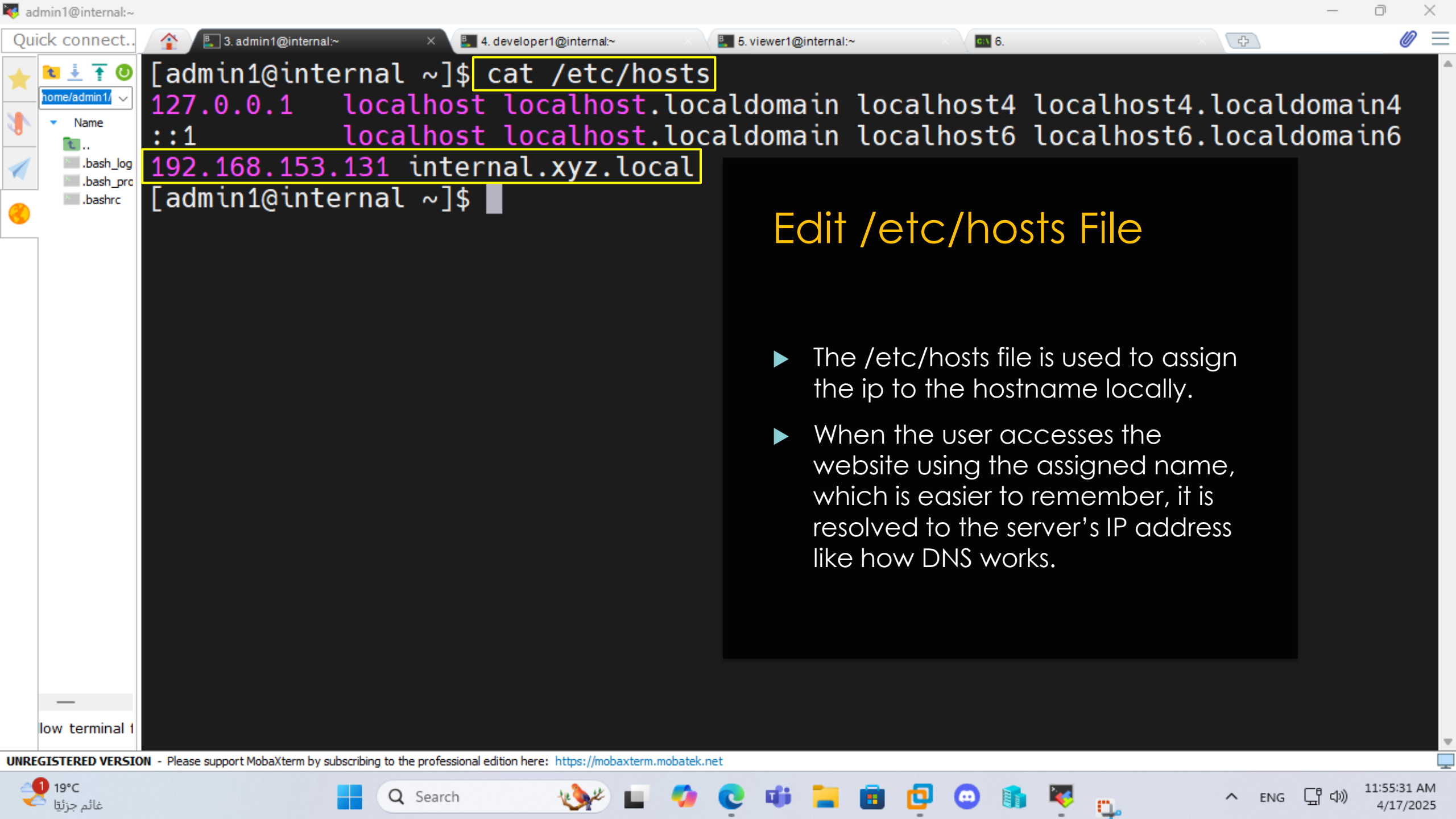
- Configuring the IP address is crucial for ensuring that the server can communicate with other devices on the internal network. By using the command nmcli to modify in the network interface and make it static.
- Using ip ad command to show our ip address that we assign



Hostname Configuration (hostnamectl)

- Setting the correct hostname ensures that the server can be easily identified on the network.
- The hostnamectl command was used to set the hostname of the server to internal.xyz.local.




admin1@internal:~
Quick connect...
3. admin1@internal:~
4. developer1@internal:~
5. viewer1@internal:~
6.
[admin1@internal ~]$ cat /etc/hosts
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
192.168.153.131 internal.xyz.local
[admin1@internal ~]$
Edit /etc/hosts File
The /etc/hosts file is used to assign the ip to the hostname locally.
When the user accesses the website using the assigned name, which is easier to remember, it is resolved to the server's IP address like how DNS works.
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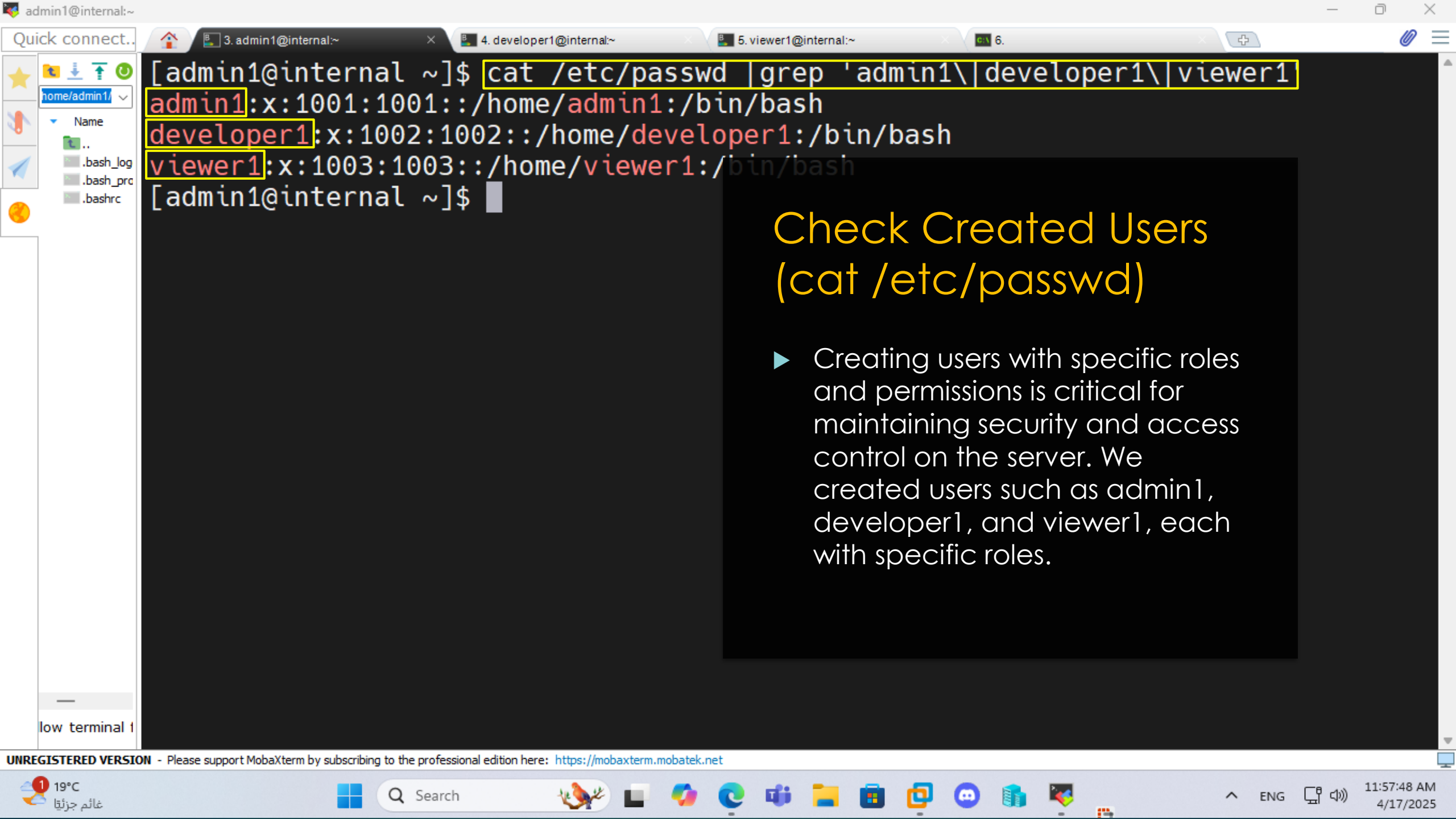
admin1@internal:~
Quick connect...
3. admin1@internal:~
4. developer1@internal:~
5. viewer1@internal:~
6.
[admin1@internal ~]$ cat /etc/passwd |grep 'admin1\|developer1\|viewer1'
admin1:x:1001:1001::/home/admin1:/bin/bash
developer1:x:1002:1002::/home/developer1:/bin/bash
viewer1:x:1003:1003::/home/viewer1:/bin/bash
[admin1@internal ~]$
Check Created Users (cat /etc/passwd)
Creating users with specific roles and permissions is critical for maintaining security and access control on the server. We created users such as admin1, developer1, and viewer1, each with specific roles.
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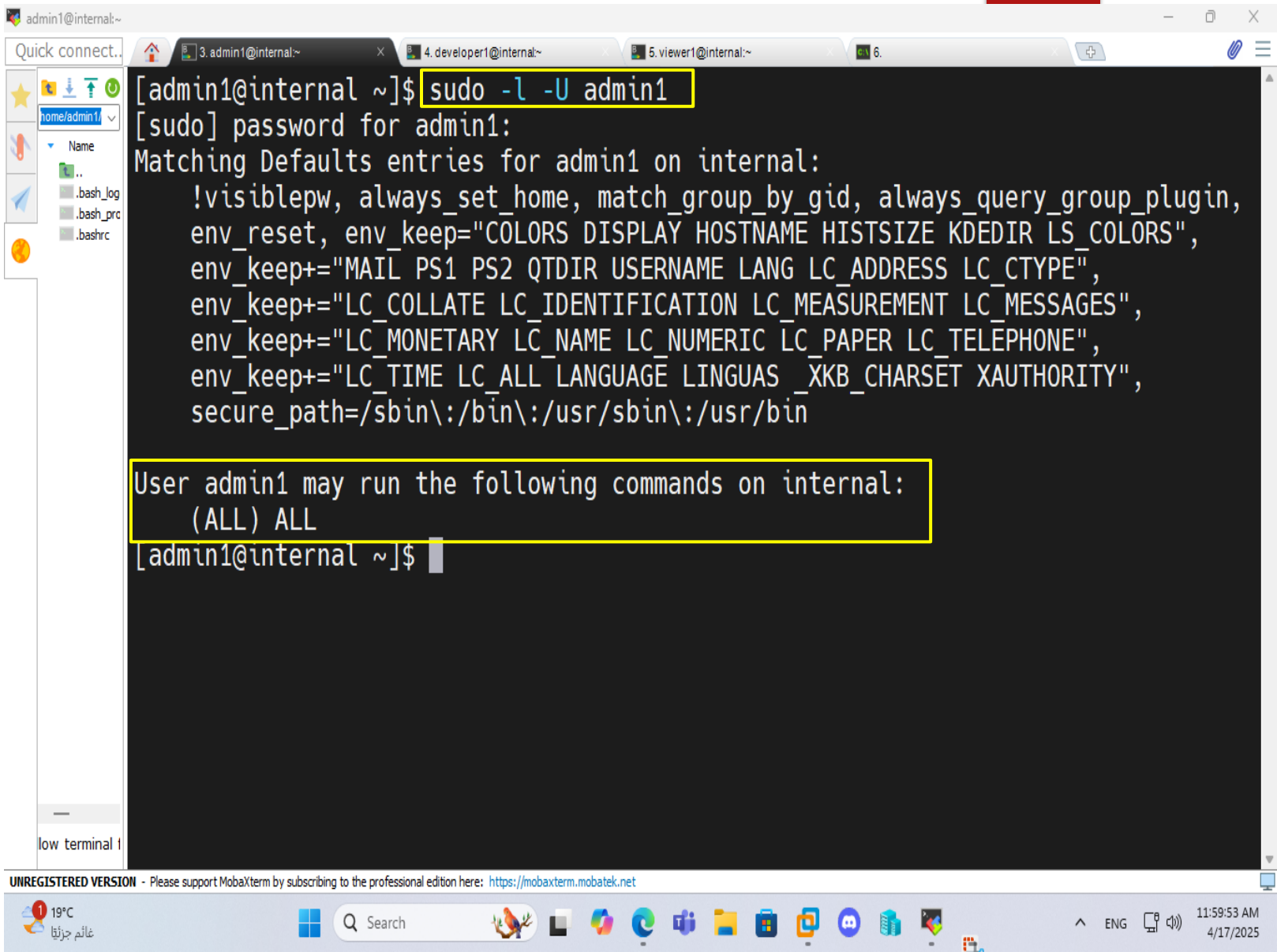
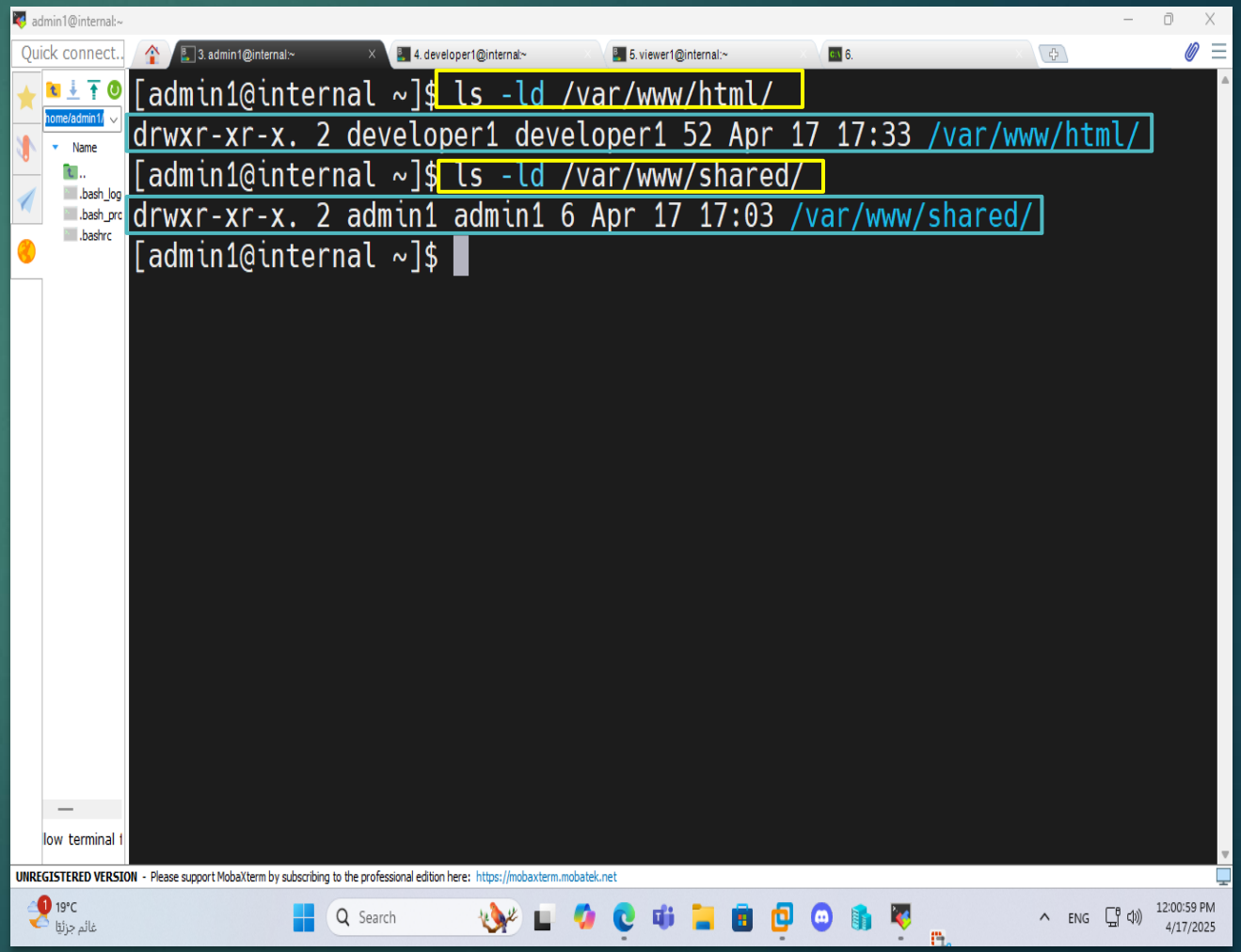
Checking Sudo Privileges for Admin (sudo -l -U admin1)

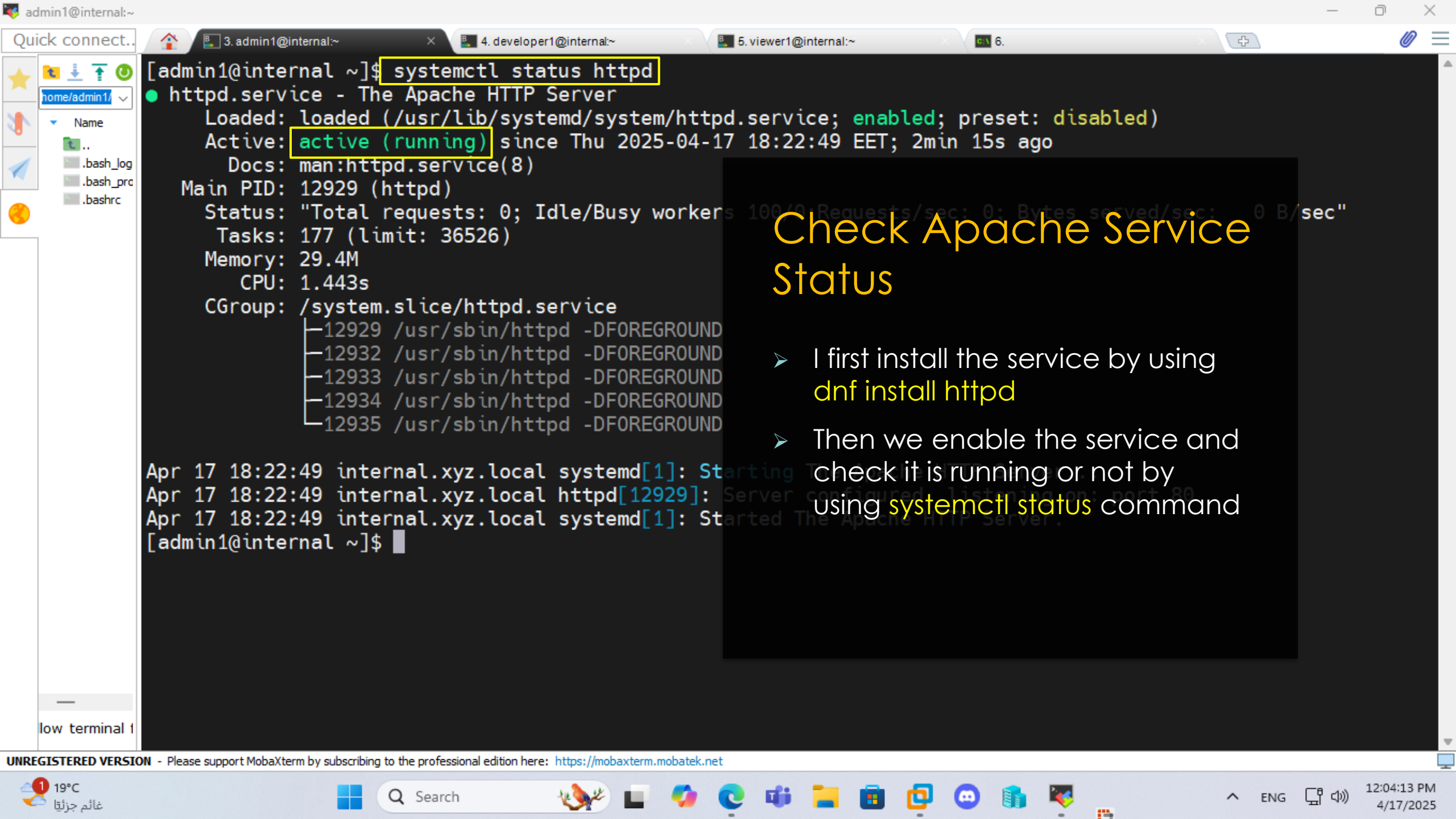
- To allow the system administrator to perform privileged tasks, we need to confirm that the admin1 user has the necessary sudo privileges.
- We add admin1 to the group of the wheel to become admin.



Verify Directory Permissions

- This ensures that only developer1 can modify files in the website directory and admin1 has access to the shared files.
- we use the command chown to change the owner of the files and chmod to set permissions




admin1@internal:~
Quick connect..
3. admin1@internal:~
4. developer1@internal:~
5. viewer1@internal:~
6.
[admin1@internal ~]$ systemctl status httpd
● httpd.service - The Apache HTTP Server
Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; preset: disabled)
Active: active (running) since Thu 2025-04-17 18:22:49 EET; 2min 15s ago
Docs: man:httpd.service(8)
Main PID: 12929 (httpd)
Status: "Total requests: 0; Idle/Busy workers 100/0;Requests/sec: 0; Bytes served/sec: 0 B/sec"
Tasks: 177 (limit: 36526)
Memory: 29.4M
CPU: 1.443s
CGroup: /system.slice/httpd.service
├─12929 /usr/sbin/httpd -DFOREGROUND
├─12932 /usr/sbin/httpd -DFOREGROUND
├─12933 /usr/sbin/httpd -DFOREGROUND
├─12934 /usr/sbin/httpd -DFOREGROUND
└─12935 /usr/sbin/httpd -DFOREGROUND
Apr 17 18:22:49 internal.xyz.local systemd[1]: Starting The Apache HTTP Server...
Apr 17 18:22:49 internal.xyz.local httpd[12929]: Server configured, listening on: port 80
Apr 17 18:22:49 internal.xyz.local systemd[1]: Started The Apache HTTP Server.
[admin1@internal ~]$
Check Apache Service Status
I first install the service by using dnf install httpd
Then we enable the service and check it is running or not by using systemctl status command
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admin1@internal:~
Quick connect...
3. admin1@internal:~
4. developer1@internal:~
5. viewer1@internal:~
6.
[admin1@internal ~]$ ls -l /var/www/html/
total 4
-rw-r--r--. 1 developer1 developer1 54 Apr 17 17:16 index.html
-rw-r--r--. 1 developer1 developer1 0 Apr 17 17:33 test_permission.html
[admin1@internal ~]$
List Website Files by ls –l command
We make sure here that the developers owns the directory of /html/ and the files under it as they can modify files in it.
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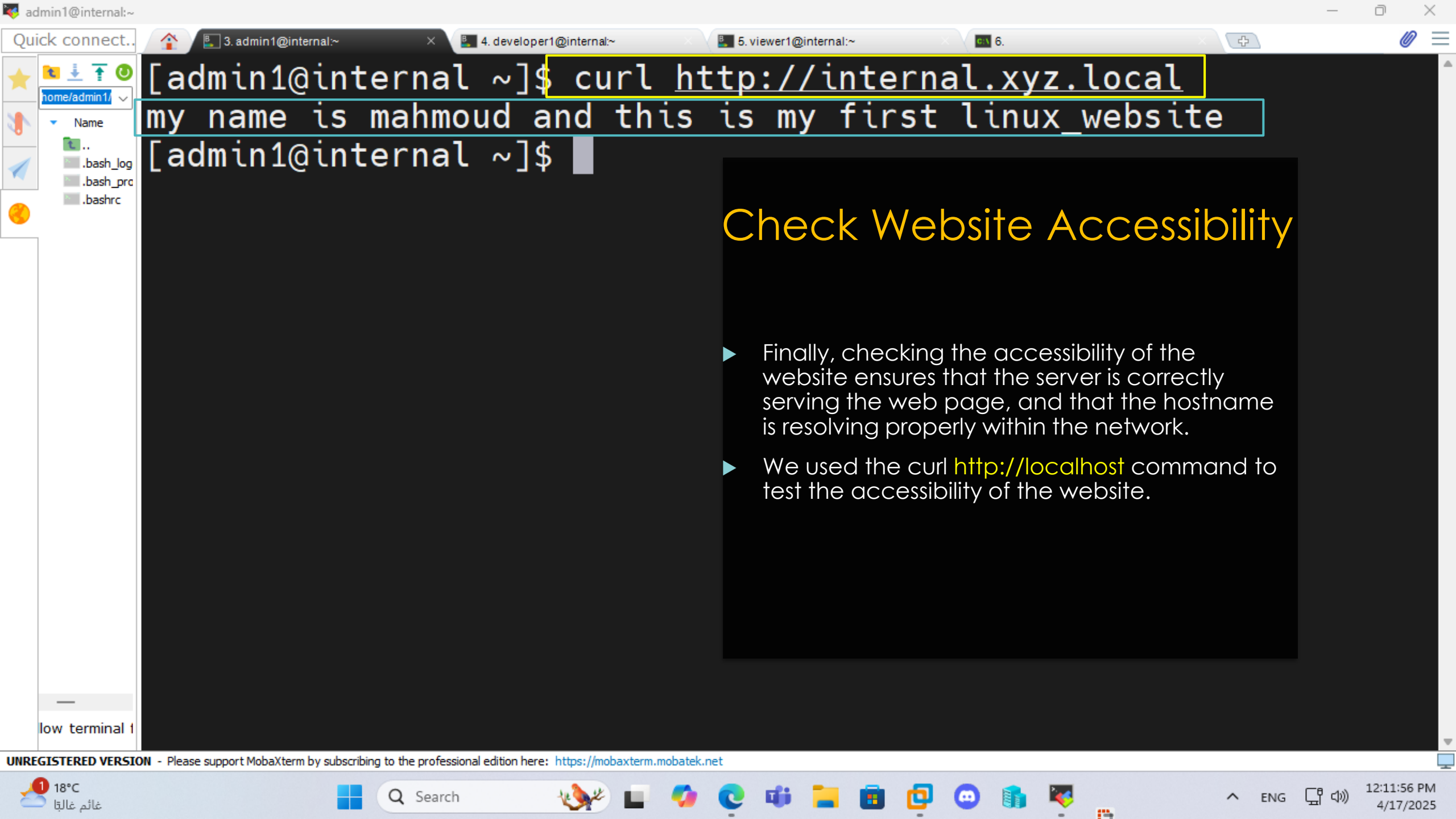
admin1@internal:~
Quick connect..
3. admin1@internal:~
4. developer1@internal:~
5. viewer1@internal:~
6.
[admin1@internal ~]$ curl http://internal.xyz.local
my name is mahmoud and this is my first linux_website
[admin1@internal ~]$
Check Website Accessibility
Finally, checking the accessibility of the website ensures that the server is correctly serving the web page, and that the hostname is resolving properly within the network.
We used the curl http://localhost command to test the accessibility of the website.
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