

Examen

Ver dirección IP inicial

```
li@uss:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: ens18: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether bc:24:11:3b:4f:71 brd ff:ff:ff:ff:ff:ff
    altname enp0s18
    inet 192.168.1.208/24 metric 100 brd 192.168.1.255 scope global dynamic ens18
        valid_lft 602731sec preferred_lft 602731sec
    inet6 fe80::be24:11ff:fe3b:4f71/64 scope link
        valid_lft forever preferred_lft forever
```

Edita el archivo para modificar la dirección IP

- sudo nano /etc/netplan/50-cloud-init.yaml

```
network:
  version: 2
  ethernets:
    ens18:
      dhcp4: false
      addresses:
        - 192.168.1.53/24
      routes:
        - to: 0.0.0.0/0
          via: 192.168.1.1
      nameservers:
        addresses:
          - 1.1.1.1
          - 8.8.8.8
```

Cambios completados

```
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    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: ens18: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether bc:24:11:3b:4f:71 brd ff:ff:ff:ff:ff:ff
    altname enp0s18
    inet 192.168.1.53/24 brd 192.168.1.255 scope global ens18
        valid_lft forever preferred_lft forever
    inet6 fe80::be24:11ff:fe3b:4f71/64 scope link
        valid_lft forever preferred_lft forever
li@uss:~$
```

Cambiar contraseña

```
li@uss:~$ passwd
Changing password for li.
Current password:
New password:
Retype new password:
passwd: password updated successfully
```

Actualizar el sistema

```
li@uss:~$ sudo apt update && sudo apt upgrade
```

Conexión SSH desde el host local a la máquina virtual

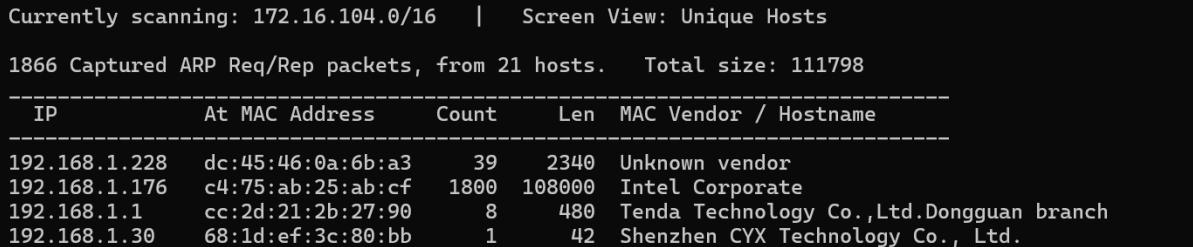


The terminal window shows a Star Trek-themed login screen for the USS Competencial. It features a Klingon-like logo at the top, followed by a message about not running as root and backup policies. Below this is a stylized Klingon ship graphic. The text "USS COMPETENCIAL" and the motto "Larga vida y prosperidad". It also displays notes for the engineer regarding file search commands. A section titled "IMPORTANTE" contains a message about the first mission. The prompt "li@uss:~\$ |" is visible at the bottom.

Instalar netdiscover

```
li@uss:~$ sudo apt install netdiscover
```

```
- sudo netdiscover
```



The terminal window shows the output of the netdiscover command. It starts with a header indicating it's scanning the subnet 172.16.104.0/16. It then lists 1866 captured ARP requests from 21 hosts, totaling 111798 bytes. The output includes a table with columns for IP, At MAC Address, Count, Len, MAC Vendor / Hostname. The table shows several entries, including an unknown vendor, Intel Corporate, Tenda Technology Co., Ltd., and Shenzhen CYX Technology Co., Ltd.

IP	At MAC Address	Count	Len	MAC Vendor / Hostname
192.168.1.228	dc:45:46:0a:6b:a3	39	2340	Unknown vendor
192.168.1.176	c4:75:ab:25:ab:cf	1800	108000	Intel Corporate
192.168.1.1	cc:2d:21:2b:27:90	8	480	Tenda Technology Co.,Ltd.Dongguan branch
192.168.1.30	68:1d:ef:3c:80:bb	1	42	Shenzhen CYX Technology Co., Ltd.

1.

Editar el archivo MOTD

- sudo nano /etc/motd

```
GNU nano 7.2                                /etc/motd *
```

LCARS TERMINAL INTERFACE SECTOR: /var/log

NODO: Lxin-Server NCC-0704
ROL : Servidor de Entrenamiento ASIR
MODO: Simulación de puente de mando
Cadate: Li Xinyuan
ID Grupo: 12138
Saludo LCARS: "Todos los sistemas operativos."
Fecha Estelar: \$(date)

MODOS RÁPIDOS

01	Estado del núcleo warp	-> sudo systemctl status
02	Sensores de red	-> ip a / ss -tulnp
03	Registros de la Flota	-> journalctl / tail -f /var/log/*
04	Cámaras de ingeniería	-> top / htop

PROTOCOLO DE ACCESO

A1	Identidad de oficial:	lxin0704
A2	Código de autenticación:	«larga vida y prosperidad»

Iniciar sesión

LCARS TERMINAL INTERFACE

SECTOR: /var/log

NODO: Lxin-Server NCC-0704
ROL : Servidor de Entrenamiento ASIR
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PROTOCOLO DE ACCESO

A1	Identidad de oficial:	lxin0704
A2	Código de autenticación:	«larga vida y prosperidad»

COMPUTADORA DE A BORDO:

- » Credenciales vulcanas aceptadas.
- » Lógica confirmada.
- » Núcleo warp estable.

Próxima acción sugerida:

- Revisar anomalías en el sector /var/log
- Comprobar integridad de escudos (firewall / ssh)

RECORDATORIOS DE FLOTA

B1	No ejecutes comandos como root sin pensar dos veces.
B2	Los logs lo ven TODO.
B3	Backups diarios, drama cero.

----- FIN DEL CANAL DE ESTATUS -----

USS COMPETENCIAL

"Larga vida y prosperidad"

2.

Instalar, habilitar y verificar Apache, MySQL y PHP:

- sudo apt update
- sudo apt install -y apache2 mysql-server php php-mysql libapache2-mod-php

```
li@uss:$ sudo apt update
```

```
li@uss:$ sudo apt install -y apache2 mysql-server php php-mysql libapache2-mod-php
```

- sudo mysql_secure_installation

```
li@uss:$ sudo mysql_secure_installation
```

```
Securing the MySQL server deployment.
```

```
Connecting to MySQL using a blank password.
```

Habilitar:

- sudo systemctl start apache2
- sudo systemctl enable apache2

```
li@uss:$ sudo systemctl start apache2
```

```
li@uss:$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable apache2
```

- sudo systemctl start mysql
- sudo systemctl enable mysql

```
li@uss:$ sudo systemctl start mysql
li@uss:$ sudo systemctl enable mysql
Synchronizing state of mysql.service with SysV service script with /usr/lib/systemd/systemd-sysv-install
Executing: /usr/lib/systemd/systemd-sysv-install enable mysql
```

Verificación:

- sudo systemctl status apache2

```
li@uss:$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
  Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
  Active: active (running) since Tue 2025-11-18 11:23:07 UTC; 12min ago
    Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 10410 (Apache2)
```

- sudo systemctl status mysql

```
li@uss:$ sudo systemctl status mysql
● mysql.service - MySQL Community Server
  Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
  Active: active (running) since Tue 2025-11-18 11:33:01 UTC; 3min 24s ago
    Main PID: 12310 (mysql)
      Status: "Server is operational"
```

```
- sudo mysql -u root -p  
Li@uss:/$ sudo mysql -u root -p  
Enter password:  
Welcome to the MySQL monitor. Commands end with ; or \g.  
Your MySQL connection id is 10  
Server version: 8.0.43-0ubuntu0.24.04.2 (Ubuntu)  
  
Copyright (c) 2000, 2025, Oracle and/or its affiliates.  
  
Oracle is a registered trademark of Oracle Corporation and/or its  
affiliates. Other names may be trademarks of their respective  
owners.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
mysql> |
```

3.

Instalar y habilitar UFW (Si UFW no está instalado)

- sudo apt install ufw -y

```
Li@uss:/$ sudo apt install ufw -y
```

- sudo ufw enable

```
Li@uss:/$ sudo ufw enable  
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y  
Firewall is active and enabled on system startup
```

Permitir SSH, HTTP, HTTPS

- sudo ufw allow ssh
- sudo ufw allow http
- sudo ufw allow https

```
Li@uss:/$ sudo ufw allow ssh  
Rule added  
Rule added (v6)  
Li@uss:/$ sudo ufw allow http  
Rule added  
Rule added (v6)  
Li@uss:/$ sudo ufw allow https  
Rule added  
Rule added (v6)
```

Verificación

```
li@uss:/$ sudo ufw status
Status: active

To                         Action    From
--                         ----     ---
22/tcp                      ALLOW     Anywhere
80/tcp                      ALLOW     Anywhere
443                         ALLOW     Anywhere
22/tcp (v6)                 ALLOW     Anywhere (v6)
80/tcp (v6)                 ALLOW     Anywhere (v6)
443 (v6)                    ALLOW     Anywhere (v6)
```

Cree un archivo PHP para mostrar el estado del firewall en una página web

- sudo nano firewall_status.php

```
li@uss:/var/www/html$ sudo nano firewall_status.php
```

```
<!DOCTYPE html>
<html lang="es">
<head>
    <meta charset="UTF-8">
    <title>Estado del Escudo Deflector</title>
    <style>
        body { background-color: black; color: #00FFFF; font-family: Arial, sans-serif; }
        .panel { border: 2px solid #FF9999; padding: 20px; margin: 20px auto; max-width: 600px; }
        h1, h2 { color: #FF9999; }
    </style>
</head>
<body>
    <div class="panel">
        <h1>USS Enterprise NCC-1701-D - Escudo Deflector</h1>
        <h2>Estado del Escudo</h2>
        <?php
            $ufw_status = shell_exec('sudo ufw status');
            echo "<pre>$ufw_status</pre>";
        ?>
        <p>Escudos levantados. Solo permitido SSH, HTTP y HTTPS.</p>
    </div>
</body>
</html>
```

```

GNU nano 7.2                               firewall_status.php
<!DOCTYPE html>
<html lang="es">
<head>
    <meta charset="UTF-8">
    <title>Estado del Escudo Deflector</title>
    <style>
        body { background-color: black; color: #00FFFF; font-family: Arial, sans-serif; }
        .panel { border: 2px solid #FF9999; padding: 20px; margin: 20px auto; max-width: 600px; }
        h1, h2 { color: #FF9999; }
    </style>
</head>
<body>
    <div class="panel">
        <h1>USS Enterprise NCC-1701-D - Escudo Deflector</h1>
        <h2>Estado del Escudo</h2>
        <?php
            $ufw_status = shell_exec('sudo ufw status');
            echo "<pre>$ufw_status</pre>";
        ?>
        <p>Escudos levantados. Solo permitido SSH, HTTP y HTTPS.</p>
    </div>
</body>
</html>

```

Conceder permiso a PHP para ejecutar el comando ufw status.

- sudo visudo

Añadir al final del documento :www-data ALL=(ALL) NOPASSWD: /usr/sbin/ufw
status

```

# Allow members of group sudo to execute any command
%sudo    ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "@include" directives:

@include /etc/sudoers.d
www-data ALL=(ALL) NOPASSWD: /usr/sbin/ufw status ←
| 

```

Acceso al navegador: http://IP/firewall_status.php

To	Action	From
22/tcp	ALLOW	Anywhere
80/tcp	ALLOW	Anywhere
443	ALLOW	Anywhere
22/tcp (v6)	ALLOW	Anywhere (v6)
80/tcp (v6)	ALLOW	Anywhere (v6)
443 (v6)	ALLOW	Anywhere (v6)

 A note at the bottom states 'Escudos levantados. Solo permitido SSH, HTTP y HTTPS.'"/>

4.

Instalar Docker

- sudo apt install -y apt-transport-https ca-certificates curl software-properties-common gnupg lsb-release
- curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
- echo "deb [arch=\$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu \$(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
- sudo apt update && sudo apt install -y docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin

Crear script de generación de datos de telemetría

- sudo nano telem_generator.php

```
Li@uss:/var/www/html$ sudo nano telem_generator.php
```

```
<?php
$telemetry = [
    'apache_status' => shell_exec('systemctl is-active apache2'),
    'mysql_status' => shell_exec('systemctl is-active mariadb'),
    'php_version' => phpversion(),
    'docker_version' => shell_exec('docker --version 2>/dev/null') ?: 'Docker no instalado',
    'kernel_version' => shell_exec('uname -r'),
    'uptime' => shell_exec('uptime -p')
];

header('Content-Type: application/json');
echo json_encode($telemetry, JSON_PRETTY_PRINT);
?>
```

```
GNU nano 7.2                                     telem_generator.php
<?php
$telemetry = [
    'apache_status' => shell_exec('systemctl is-active apache2'),
    'mysql_status' => shell_exec('systemctl is-active mariadb'),
    'php_version' => phpversion(),
    'docker_version' => shell_exec('docker --version 2>/dev/null') ?: 'Docker no instalado',
    'kernel_version' => shell_exec('uname -r'),
    'uptime' => shell_exec('uptime -p')
];

header('Content-Type: application/json');
echo json_encode($telemetry, JSON_PRETTY_PRINT);
?>
```

Crear página de visualización de telemetría:

- sudo nano telem_panel.html

```
li@uss:/var/www/html$ sudo nano telem_panel.html
```

```
<!DOCTYPE html>
<html lang="es">
<head>
    <meta charset="UTF-8">
    <title>Panel de Diagnóstico de Ingeniería</title>
    <style>
        body { background-color: black; color: #00FFFF; font-family: Arial, sans-serif; }
        .lcars-panel { border: 3px solid #FF9999; padding: 15px; margin: 10px auto; max-width: 800px; }
        .lcars-title { color: #FF9999; border-bottom: 2px solid #FF9999; padding-bottom: 5px; }
        .telemetry-item { margin: 10px 0; padding: 5px; border: 1px solid #00FFFF; }
        .telemetry-label { color: #FF9999; font-weight: bold; }
    </style>
</head>
<body>
    <div class="lcars-panel">
        <h1 class="lcars-title">Panel de Diagnóstico de Ingeniería - USS Enterprise NCC-1701-D</h1>
        <div id="telemetry-data" class="telemetry-item">
            Cargando datos de telemetría...
        </div>
    </div>

    <script>
        fetch('telem_generator.php')
            .then(response => response.json())
            .then(data => {
                const telemetryDiv = document.getElementById('telemetry-data');
                telemetryDiv.innerHTML =
                    <div><span class="telemetry-label">Estado Apache:</span>
${data.apache_status}</div>
                    <div><span class="telemetry-label">Estado MySQL:</span>
${data.mysql_status}</div>
                    <div><span class="telemetry-label">Versión PHP:</span>
${data.php_version}</div>
```

```

        <div><span class="telemetry-label">Versión Docker:</span>
${data.docker_version}</div>
        <div><span class="telemetry-label">Versión Kernel:</span>
${data.kernel_version}</div>
        <div><span class="telemetry-label">Tiempo Activo:</span>
${data.uptime}</div>
        `;
    }
    .catch(error => {
        document.getElementById('telemetry-data').innerHTML =
            <div class="error">Error al cargar telemetría:
${error.message}</div>
        `;
    });
</script>
</body>
</html>

```

```

GNU nano 7.2                               telem_panel.html
<!DOCTYPE html>
<html lang="es">
<head>
<meta charset="UTF-8">
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</style>
</head>
<body>
<div class="lcars-panel">
    <h1 class="lcars-title">Panel de Diagnóstico de Ingeniería - USS Enterprise NCC-1701-D</h1>
    <div id="telemetry-data" class="telemetry-item">
        Cargando datos de telemetría...
    </div>
</div>
<script>

```



Acceder a través del navegador http://IP/telem_panel.html

5.

Crear repositorio GitHub e inicializar

<https://github.com/>

The screenshot shows the GitHub interface for creating a new repository. It's a dark-themed page. Step 1: General. Owner dropdown: lixin0704-12138. Repository name input: starfleet-prueba-competencial-LiXinyuan. A note says it's available. Description input: Examen. Step 2: Configuration. Choose visibility dropdown: Public. Add README switch: Off.

- mkdir starfleet-prueba-competencial-LiXinyuan

```
li@uss:/var/www/html$ cd
li@uss:~$ mkdir starfleet-prueba-competencial-LiXinyuan
li@uss:~$ cd starfleet-prueba-competencial-LiXinyuan
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ |
```

- git init

```
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/li/starfleet-prueba-competencial-LiXinyuan/.git/
```

Copiar archivos al directorio

- cp /var/www/html/firewall_status.php .
- cp /var/www/html/telem_generator.php .
- cp /var/www/html/telem_panel.html .
- cp /etc/motd .

```

li@uss:~/starfleet-prueba-competencial-LiXinyuan$ cp /var/www/html/firewall_status.php .
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ ls
firewall_status.php
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ cp /var/www/html/telem_generator.php .
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ cp /var/www/html/telem_panel.html .
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ cp /etc/motd .
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ ls
firewall_status.php  motd  telem_generator.php  telem_panel.html

```

Editar el archivo README.md

```

li@uss:~/starfleet-prueba-competencial-LiXinyuan$ sudo nano README.md

```

GNU nano 7.2	README.md *
Examen del cadate:Li Xinyuan ID Grupo:12138 Saludo LCARS:"Todos los sistemas operativos." Fecha: 2025/11/18	

Configurar la información global del usuario

- git config --global user.name "lxin0704-12138"
- git config --global user.email "lxin0704@gmail.com"

```

li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git config --global user.name "lxin0704-12138"
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git config --global user.email "lxin0704@gmail.com"

```

Confirmar en Git

- git add .
- git commit -m "Examen_2025_11_18"
- git branch -M main
- git remote add origin <https://github.com/lxin0704-12138/starfleet-prueba-competencial-LiXinyuan.git>
- git push -u origin main

```

li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git add .
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git commit -m "Examen_2025_11_18"
[master (root-commit) 4961789] Examen_2025_11_18
 5 files changed, 146 insertions(+)
 create mode 100644 README.md
 create mode 100644 firewall_status.php
 create mode 100644 motd
 create mode 100644 telem_generator.php
 create mode 100644 telem_panel.html
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git branch -M main
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git remote add origin https://github.com/lxin0704-12138/starfleet-prueba-competencial-LiXinyuan.git
li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git push -u origin main

```

```

li@uss:~/starfleet-prueba-competencial-LiXinyuan$ git push -u origin main
Username for 'https://github.com': lxin0704-12138
Password for 'https://lxin0704-12138@github.com':
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Compressing objects: 100% (7/7), done.
Writing objects: 100% (7/7), 2.98 KiB | 2.98 MiB/s, done.
Total 7 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/lxin0704-12138/starfleet-prueba-competencial-LiXinyuan.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

```

A screenshot of a GitHub repository page. The URL is https://github.com/ixin0704-12138/starfleet-prueba-competencial-LiXinyuan. The repository name is starfleet-prueba-competencial-LiXinyuan. The main branch is main, with 1 branch and 0 tags. There is 1 commit from 4961789, 4 minutes ago. The repository is public. The sidebar shows sections for About, Examen, Releases, and Packages. The About section includes Readme, Activity, 0 stars, 0 watching, and 0 forks.

Code

Issues

Pull requests

Actions

Projects

Wiki

Security

Insights

Settings

starfleet-prueba-competencial-LiXinyuan Public

main 1 Branch 0 Tags

Go to file

Code

About

Examen

Readme

Activity

0 stars

0 watching

0 forks

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Inicie sesión en el sitio web de GitHub, abra el contenedor creado y seleccione «Subir archivos» (subir archivos PDF, capturas de pantalla, etc.).

<https://github.com/>

A screenshot of a GitHub repository page, identical to the one above, but with a red arrow pointing to the 'Upload files' option in the 'Add file' dropdown menu. This indicates where the user should click to upload files to the repository.

Pin

Watch 0

Fork 0

Star 0

Add file

+ Create new file

Upload files

README

Examen del cadate:Li Xinyuan ID Grupo:12138 Saludo LCARS:"Todos los sistemas operativos." Fecha: 2025/11/18