

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

```
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 192.168.1.53/24 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 screenshot shows a terminal window titled "li@uss: ~". The window displays a Star Trek-themed boot message for the "USS COMPETENCIAL". It includes a list of "RECORDATORIOS DE FLOTA" (B1: No ejecutes comandos como root sin pensar dos veces., B2: Los logs lo ven TODO., B3: Backups diarios, drama cero.), a "FIN DEL CANAL DE ESTATUS" section with a stylized graphic, and a "NOTAS DEL INGENIERO:" section containing commands like "sudo find / -iname \"archivo.txt\"". Below this is an "IMPORTANTE" section with the message "MENSAJE FLOTA ESTELAR: Tu primera misión es la 47-A". At the bottom, there is a prompt "li@uss:~\$ |".

Instalar netdiscover

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

- sudo netdiscover

```
Currently scanning: 172.16.104.0/16 | Screen View: Unique Hosts
1866 Captured ARP Req/Rep packets, from 21 hosts. Total size: 111798
----- 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.

Copia todo el contenido del 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»
```

Cree un nuevo archivo, pegue todo el contenido copiado en él y conceda permisos de ejecución al archivo

- sudo nano /etc/update-motd.d/01-lcars
- sudo chmod +x /etc/update-motd.d/01-lcars

```
li@uss:~$ sudo nano /etc/update-motd.d/01-lcars
li@uss:~$ sudo chmod +x /etc/update-motd.d/01-lcars
```

Modifique el contenido

```
Fecha_Estelar=$(date +"%Y/%m/%d %H:%M:%S")
cat << "EOF"
-----
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
    "Todos los sistemas operativos."
```

```
Cadate: Li Xinyuan  
ID Grupo: 12138  
EOF  
echo "Fecha Estelar: $Fecha_Estelar"  
cat << "EOF"  
  
"Todos los sistemas operativos."
```

"Bienvenido, querido capitán."



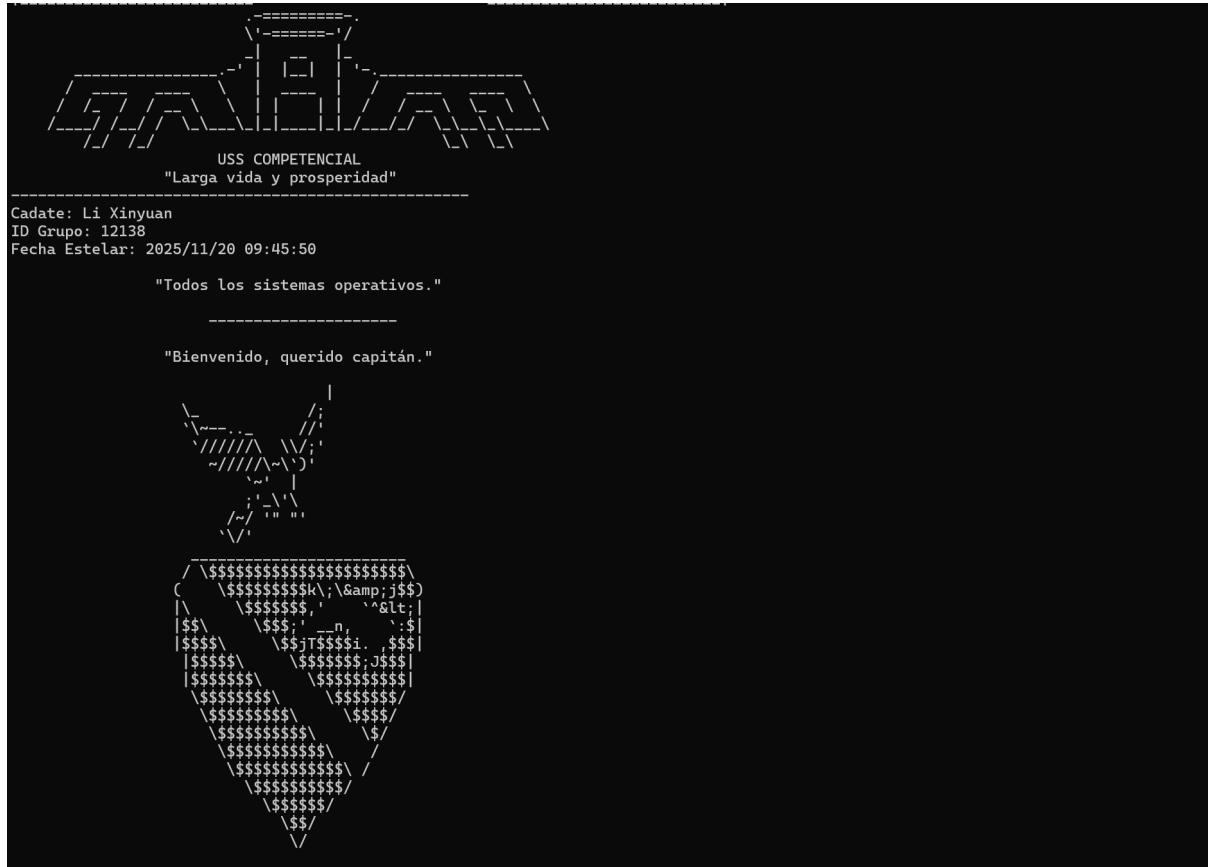
EOF

Borre el contenido existente de /etc/motd

- sudo truncate -s 0 /etc/motd

```
li@uss:~$ sudo truncate -s 0 /etc/motd
```

Vuelve a iniciar sesión



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 (mysqld)
      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-Ubuntu0.24.04.2 (Ubuntu)

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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:

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

```

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

USS Enterprise NCC-1701-D - Escudo Deflector

Estado del Escudo

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)

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>

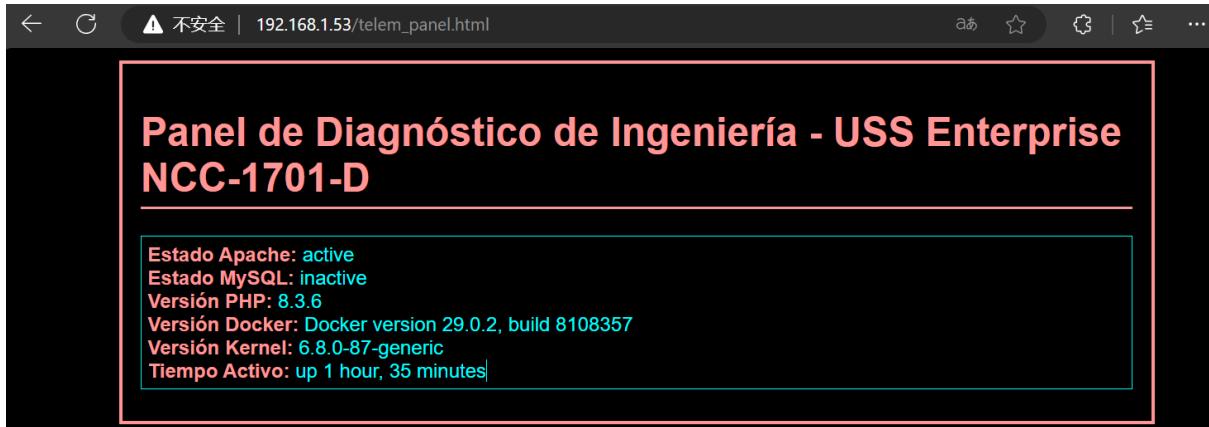
<script>
    fetch('telem_generator.php')
        .then(response => response.json())
        .then(data => {
            const telemetryDiv = document.getElementById('telemetry-data');
            telemetryDiv.innerHTML = `

                <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">
    <title>Panel de Diagnóstico de Ingeniería</title>
    <style>
        body { background-color: black; color: #00FFFF; font-family: Arial, sans-serif; }
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        .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>
```



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

5.

Crear repositorio GitHub e inicializar

<https://github.com/>

Create a new repository

Repositories contain a project's files and version history. Have a project elsewhere? [Import a repository](#).

Required fields are marked with an asterisk (*).

1 General

Owner * lxin0704-12138 / **Repository name *** starfleet-prueba-competencial-LiXinyuan
starfleet-prueba-competencial-LiXinyuan is available.

Great repository names are short and memorable. How about [upgraded-disco](#)?

Description
Examiner
6 / 350 characters

2 Configuration

Choose visibility * Public
Choose who can see and commit to this repository

Add README 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
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