# ***DOCUMENTACION DE SISTEMAS***

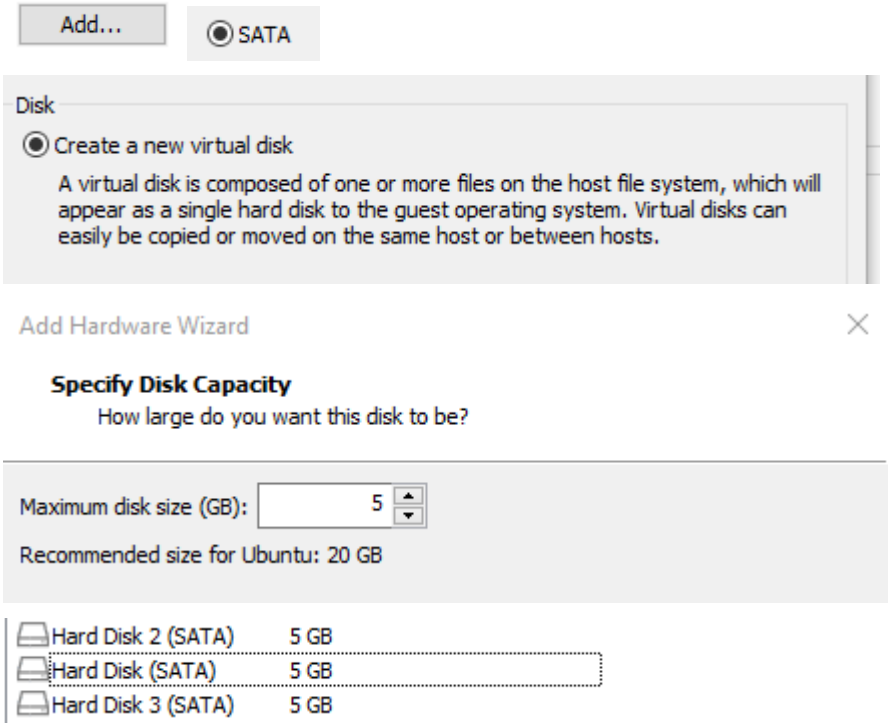
## ÍNDICE:

# Esquema Sistemas:

https://miro.com/app/board/uXjVMKKm1kc=/

# RAID

Comenzaremos añadiendo 3 discos de 5GB para nuestro Raid 5




Revisamos que se han creado correctamente los discos

```
root@Reto:/home/gaizka# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   20G  0 disk
├─sda1   8:1    0   18G  0 part /
├─sda2   8:2    0    1K  0 part
└─sda5   8:5    0    2G  0 part [SWAP]
sdb      8:16   0    5G  0 disk
sdc      8:32   0    5G  0 disk
sdd      8:48   0    5G  0 disk
sr0     11:0    1 55,4M  0 rom
```

Cambiaremos el tipo de los discos introducidos a “linux raid autodetect”
Este proceso lo haremos 3 veces, una por cada disco

```
root@Reto:/home/gaizka# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.27.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

El dispositivo no contiene una tabla de particiones reconocible.
Created a new DOS disklabel with disk identifier 0x9248d6f8.

Orden (m para obtener ayuda): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p):

Using default response p.
Número de partición (1-4, default 1):
First sector (2048-10485759, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-10485759, default 10485759):

Created a new partition 1 of type 'Linux' and of size 5 GiB.

Orden (m para obtener ayuda): t
Selected partition 1
Partition type (type L to list all types): fd
Changed type of partition 'Linux' to 'Linux raid autodetect'.

Orden (m para obtener ayuda): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.
```

Revisamos que los discos se han particionado correctamente

```
root@Reto:/home/gaizka# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   20G  0 disk
├─sda1   8:1    0   18G  0 part /
├─sda2   8:2    0    1K  0 part
└─sda5   8:5    0    2G  0 part [SWAP]
sdb      8:16   0    5G  0 disk
└─sdb1   8:17   0    5G  0 part
sdc      8:32   0    5G  0 disk
└─sdc1   8:33   0    5G  0 part
sdd      8:48   0    5G  0 disk
└─sdd1   8:49   0    5G  0 part
sr0     11:0    1 55,4M  0 rom
```

Comenzaremos creando el RAID 5

```
root@Reto:/home/gaizka# mdadm -C /dev/md5 -l raid5 -n3 /dev/sd[b-c-d]1
mdadm: Defaulting to version 1.2 metadata
[  389.152149] md/raid:md5: raid level 5 active with 2 out of 3 devices, algorithm 2
mdadm: array /dev/md5 started.
```

Comprobamos que se ha creado correctamente

```
root@Reto:/home/gaizka# cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md5 : active raid5 sdd1[3] sdc1[1] sdb1[0]
      10475520 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/3] [UUU]

unused devices: <none>
```

```
root@Reto:/home/gaizka# mdadm --detail /dev/md5
/dev/md5:
           Version : 1.2
     Creation Time : Tue Apr 18 08:14:36 2023
        Raid Level : raid5
        Array Size : 10475520 (9.99 GiB 10.73 GB)
     Used Dev Size : 5237760 (5.00 GiB 5.36 GB)
      Raid Devices : 3
     Total Devices : 3
       Persistence : Superblock is persistent

       Update Time : Tue Apr 18 08:15:03 2023
             State : clean
    Active Devices : 3
   Working Devices : 3
    Failed Devices : 0
     Spare Devices : 0

            Layout : left-symmetric
        Chunk Size : 512K

              Name : Reto:5  (local to host Reto)
              UUID : 23a60fb0:235de91d:96ccd8a4:c70775ac
            Events : 18

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       33        1      active sync   /dev/sdc1
       3       8       49        2      active sync   /dev/sdd1
```

Copiamos el contenido de la salida del comando “mdadm –detail –scan” a la ruta /etc/mdadm/mdadm.conf

```
root@Reto:/home/gaizka# mdadm --detail --scan >> /etc/mdadm/mdadm.conf
```

Formateamos la RAID

```
root@Reto:/home/gaizka# mkfs -t ext4 /dev/md5
```

Montamos la RAID

```
root@Reto:/home/gaizka# mkdir /mnt/raid5
root@Reto:/home/gaizka# mount /dev/md5 /mnt/raid5
```

Añadimos la siguiente línea al archivo fstab para hacer que la RAID sea permanente

```
 GNU nano 2.5.3                  Archivo: /etc/fstab                                  Modificado

# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point>   <type>  <options>       <dump>  <pass>
# / was on /dev/sda1 during installation
UUID=98aad38f-cea5-4b42-9299-b05f367e1ce5 /               ext4    errors=remount-ro 0       1
# swap was on /dev/sda5 during installation
UUID=44d85921-fb38-464c-9e37-ebeefd2e5ae3 none            swap    sw                0       0

#RAID 5
/dev/md5        /mnt/raid5      ext4    defaults        0       0_
```

Actualizamos toda la información de la raid y hacemos reboot

```
root@Reto:/home/gaizka# update-initramfs -u
update-initramfs: Generating /boot/initrd.img-4.4.0-87-generic
```

Creamos el grupo donde meteremos los usuarios

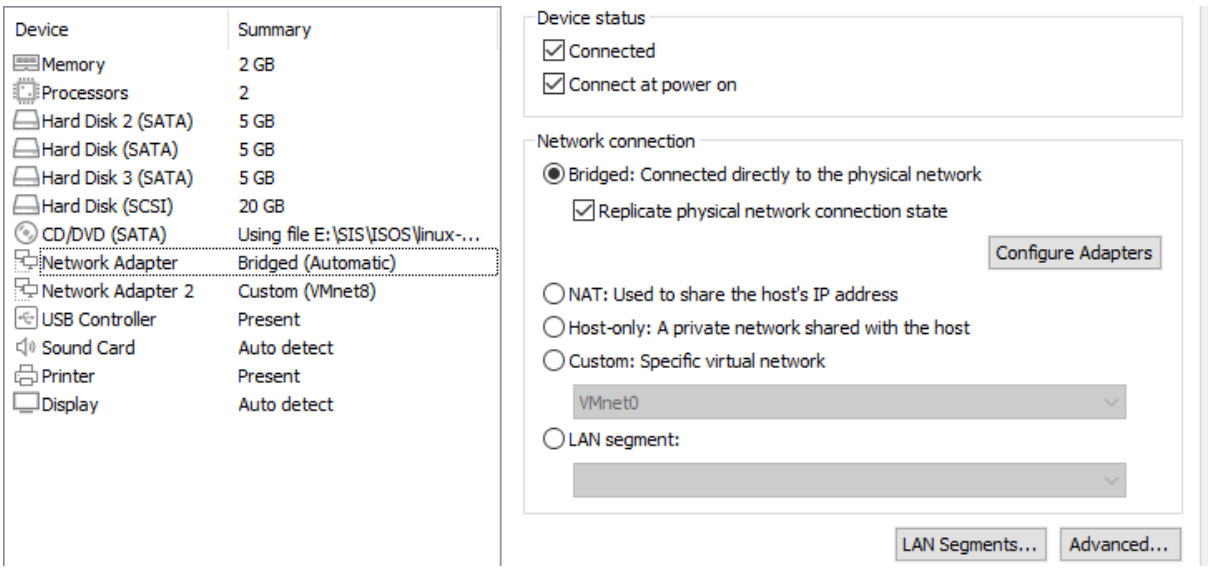
```
root@Reto:/home/gaizka# groupadd Grupo3
```

Creamos y añadimos los usuarios a nuestro grupo

```
root@Reto:/home/gaizka# adduser adrian Grupo3
Añadiendo al usuario `adrian' al grupo `Grupo3' ...
Adding user adrian to group Grupo3
Hecho.
root@Reto:/home/gaizka# adduser paula Grupo3
Añadiendo al usuario `paula' al grupo `Grupo3' ...
Adding user paula to group Grupo3
Hecho.
root@Reto:/home/gaizka# adduser gaizka Grupo3
Añadiendo al usuario `gaizka' al grupo `Grupo3' ...
Adding user gaizka to group Grupo3
Hecho.
```

# NETWORK

Cambiamos nuestro adaptador a Bridged




Revisamos el adaptador

```
root@Reto:/home/gaizka# ip link
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen
1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP mode DEFAULT group de
fault qlen 1000
    link/ether 00:0c:29:e1:78:4b brd ff:ff:ff:ff:ff:ff
3: ens38: <BROADCAST,MULTICAST> mtu 1500 qdisc noop state DOWN mode DEFAULT group default qlen 1000
    link/ether 00:0c:29:e1:78:55 brd ff:ff:ff:ff:ff:ff
```

Configuramos nuestra ip

```
root@Reto:/home/gaizka# nano /etc/network/interfaces_
```

```
  GNU nano 2.5.3                Archivo: /etc/network/interfaces

# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto ens33
iface ens33 inet static
address 192.168.20.66/22
gateway 192.168.23.254
dns-nameserver 10.22.87.1
dns-nameserver 8.8.8.8
```

Reiniciamos el servicio

```
root@Reto:/home/gaizka# service networking restart
root@Reto:/home/gaizka# service networking status
• networking.service - Raise network interfaces
   Loaded: loaded (/lib/systemd/system/networking.service; enabled; vendor preset: enabled)
  Drop-In: /run/systemd/generator/networking.service.d
           └─50-insserv.conf-$network.conf
   Active: active (exited) since mar 2023-04-18 09:19:34 CEST; 2s ago
     Docs: man:interfaces(5)
  Process: 19322 ExecStop=/sbin/ifdown -a --read-environment --exclude=lo (code=exited, status=0/SUC
  Process: 19375 ExecStart=/sbin/ifup -a --read-environment (code=exited, status=0/SUCCESS)
  Process: 19366 ExecStartPre=/bin/sh -c [ "$CONFIGURE_INTERFACES" != "no" ] && [ -n "$(ifquery --re
 Main PID: 19375 (code=exited, status=0/SUCCESS)

abr 18 09:19:34 Reto systemd[1]: Starting Raise network interfaces...
abr 18 09:19:34 Reto systemd[1]: Started Raise network interfaces.
```

Comprobamos si podemos salir a internet

```
root@Reto:/home/gaizka# ping -c4 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=128 time=31.2 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=128 time=27.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=128 time=19.1 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=128 time=23.3 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3004ms
rtt min/avg/max/mdev = 19.144/25.333/31.217/4.523 ms
```

# SSH

Instalamos el servicio SSH

```
root@Reto:/home/gaizka# apt-get update && apt-get install openssh-server
```

Comprobamos que la instalación se ha completado correctamente

```
root@Reto:/home/gaizka# dpkg -l openssh-server
Deseado=desconocido(U)/Instalar/eliminaR/Purgar/retener(H)
| Estado=No/Inst/ficheros-Conf/desempaqUetado/medio-conF/medio-inst(H)/espera-disparo(W)/pendienTe-d
isparo
|/ Err?=(ninguno)/requiere-Reinst (Estado,Err: mayúsc.=malo)
||/ Nombre             Versión        Arquitectura   Descripción
+++-==================-==============-==============-=============================================
ii  openssh-server      1:7.2p2-4ubunt i386           secure shell (SSH) server, for secure acces
```

Entramos al archivo de configuración sshd_config

```
root@Reto:/home/gaizka# nano /etc/ssh/sshd_config
```

Permitir que el root se pueda logear

```
# Authentication:
LoginGraceTime 120
PermitRootLogin yes
StrictModes yes
```

Autenticación de contraseña

```
# Change to no to disable tunnelled clear text passwords
PasswordAuthentication yes
```

Reiniciamos el servicio y vemos el estado del mismo

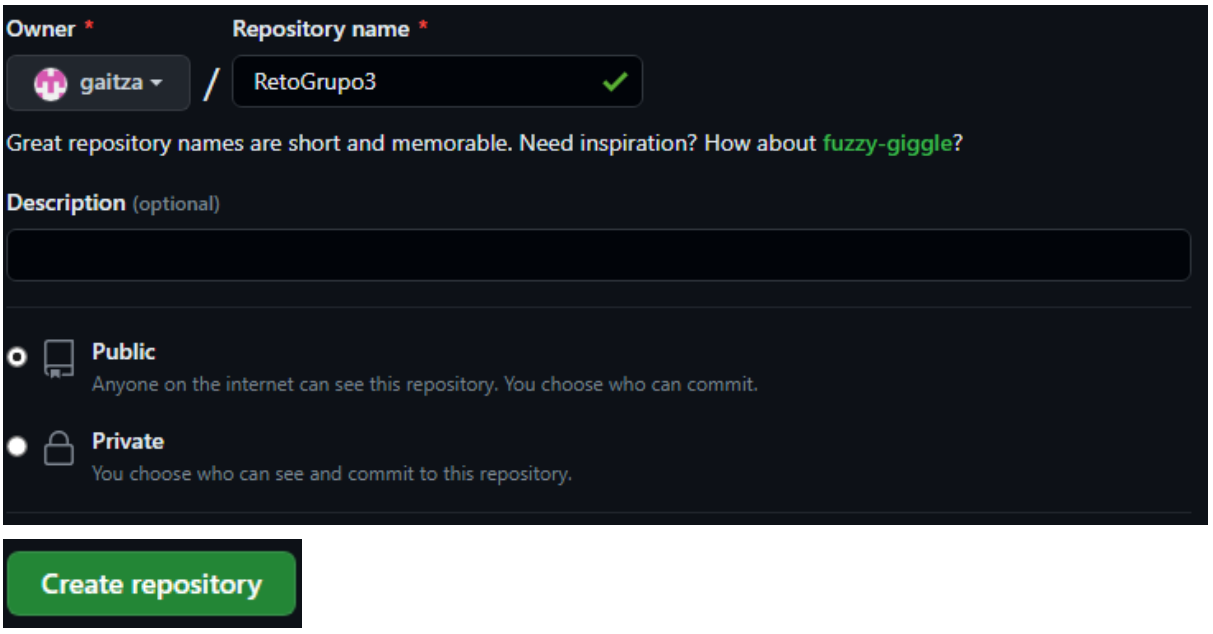
```
root@Reto:/home/gaizka# service sshd restart
root@Reto:/home/gaizka# service sshd status
• ssh.service - OpenBSD Secure Shell server
   Loaded: loaded (/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
   Active: active (running) since mar 2023-04-18 10:45:58 CEST; 3s ago
  Process: 1800 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCESS)
 Main PID: 1804 (sshd)
    Tasks: 1
   Memory: 524.0K
      CPU: 13ms
   CGroup: /system.slice/ssh.service
           └─1804 /usr/sbin/sshd -D

abr 18 10:45:58 Reto systemd[1]: Starting OpenBSD Secure Shell server...
abr 18 10:45:58 Reto sshd[1804]: Server listening on 0.0.0.0 port 22.
abr 18 10:45:58 Reto sshd[1804]: Server listening on :: port 22.
abr 18 10:45:58 Reto systemd[1]: Started OpenBSD Secure Shell server.
```

# GITHUB

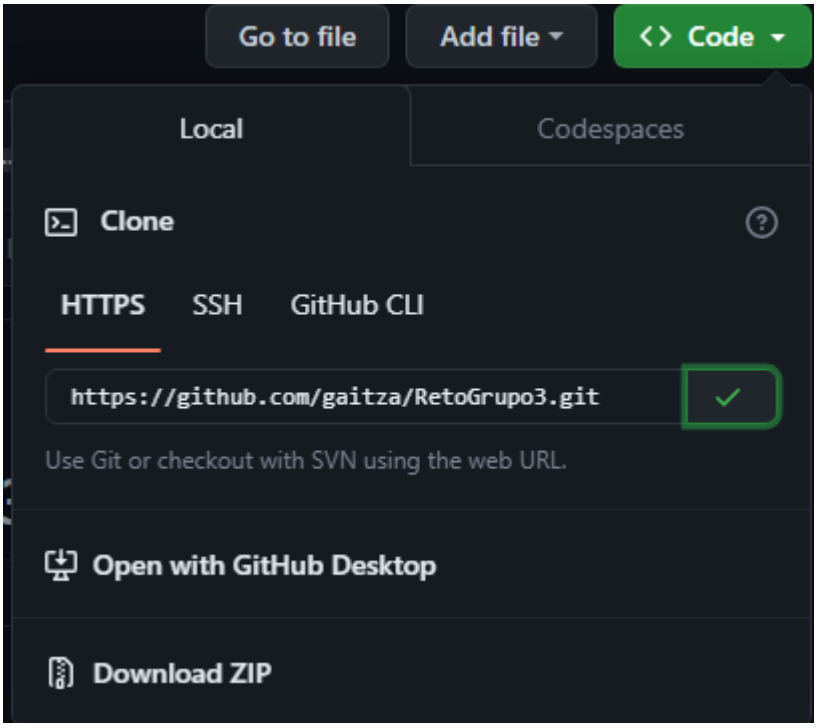
Instalamos Github

```
root@Reto:/mnt/raid5/github/RetoGrupo3# apt install git
```

Creamos un repositorio




Creamos una carpeta en nuestro escritorio


Abriremos github bash desde la carpeta creada anteriormente, en ella almacenaremos nuestro reto.
Para ello comenzaremos clonando nuestro proyecto de github

```
1dam@HZ301203 MINGW64 ~
$ cd Desktop/RetoGrupo3/

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3
$ git clone https://github.com/gaitza/RetoGrupo3.git
Cloning into 'RetoGrupo3'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
```

Entramos a nuestro repositorio clonado y creamos una nueva rama

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3
$ cd RetoGrupo3/

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (main)
$ git branch RamaGaizka

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (main)
$ git checkout RamaGaizka
Switched to branch 'RamaGaizka'
```

Después de haber accedido a la rama iniciaremos nuestro repositorio y haremos una prueba de acceso mediante ssh

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git init
Reinitialized existing Git repository in C:/Users/1dam/Desktop/RetoGrupo3/RetoGr
upo3/.git/

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ ssh gaizka@192.168.20.66
gaizka@192.168.20.66's password:
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-87-generic i686)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

Pueden actualizarse 26 paquetes.
17 actualizaciones son de seguridad.

New release '18.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


Last login: Wed Apr 19 13:52:18 2023 from 192.168.23.118
```

Continuamos añadiendo nuestro túnel ssh para usarlo con el server

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoPrueba/RetoPrueba (RamaGaizka)
$ git remote add serverssh ssh://gaizka@192.168.20.66/mnt/raid5/github/RetoGrupo
3
```

Ahora vemos los tuneles que tenemos creados

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git remote -v
origin  https://github.com/gaitza/RetoGrupo3.git (fetch)
origin  https://github.com/gaitza/RetoGrupo3.git (push)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github (fetch)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github (push)
```

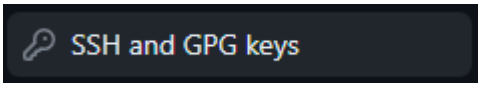
## SERVER

Creamos una clave ssh pública

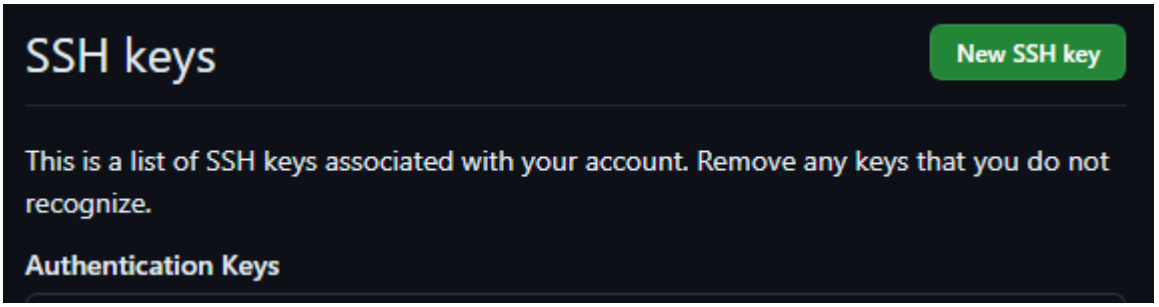
```
root@Reto:/mnt/raid5/github/RetoPrueba# ssh-keygen
```

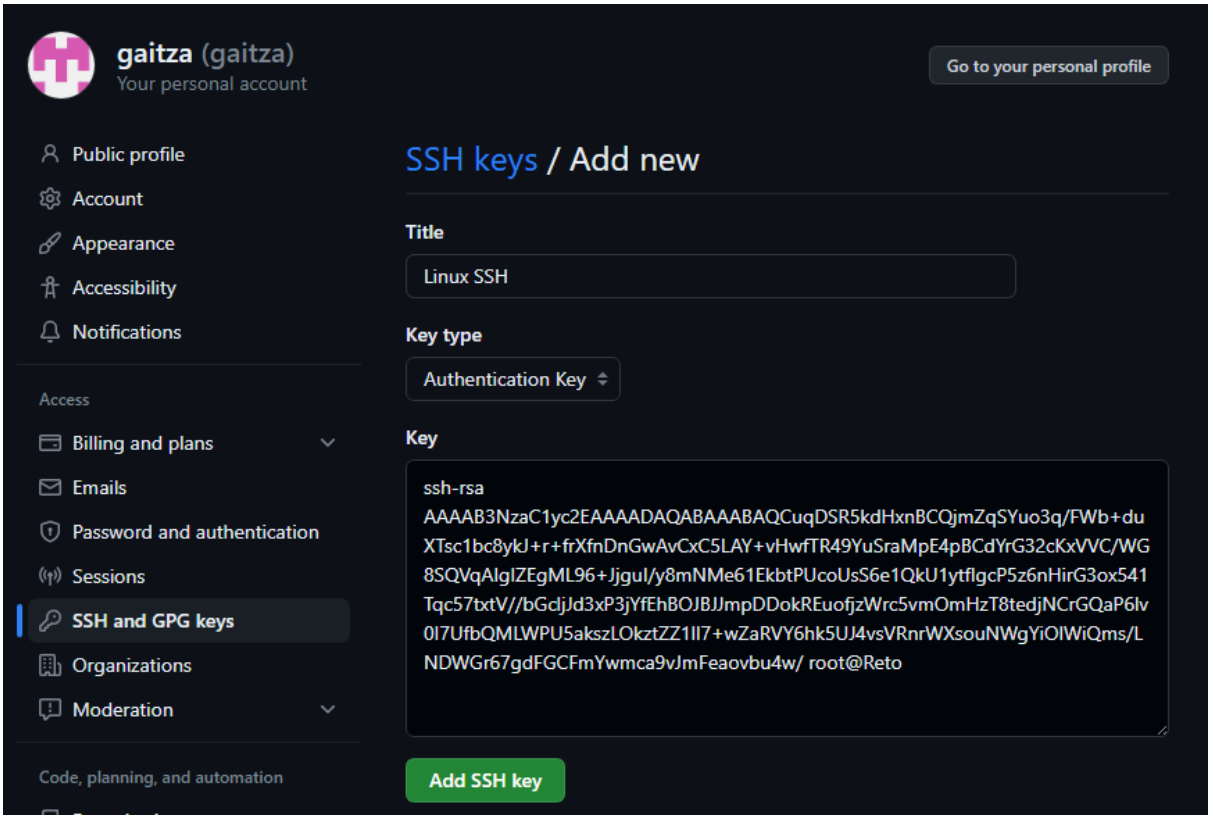
```
root@Reto:/mnt/hgfs/retofinal# cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCuqDSR5kdHxnBCQjmZqSYuo3q/FWb+duXTsc1bc8ykJ+r+frXfnDnGwAvCxC5L
AY+vHwfTR49YuSraMpE4pBCdYrG32cKxVVC/WG8SQVqAIgIZEgML96+JjguI/y8mNMe61EkbtPUcoUsS6e1QkU1ytfIgcP5z6nHi
rG3ox541Tqc57txtV//bGcljJd3xP3jYfEhBOJBJJmpDDokREuofjzWrc5vmOmHzT8tedjNCrGQaP6lv0I7UfbQMLWPU5akszLOk
ztZZ1117+wZaRVY6hk5UJ4vsVRnrWXsouNWgYiOlWiQms/LNDWGr67gdFGCFmYwmca9vJmFeaovbu4w/ root@Reto
root@Reto:/mnt/hgfs/retofinal# cp ~/.ssh/id_rsa.pub rsa.txt
```

Nos dirigimos a los ajustes de nuestro usuario github y nos dirigimos al apartado “SSH and GPG keys”



Creamos una llave SSH y añadimos la clave SSH generada anteriormente en nuestro servidor ubuntu




Nos dirigimos al servidor y usaremos el siguiente comando para confirmar que nuestro servidor se conecta al github correctamente

```
root@Reto:/mnt/raid5/github/RetoPrueba# ssh -T git@github.com
Hi gaitza! You've successfully authenticated, but GitHub does not provide shell access.
```

Creamos una carpeta donde guardamos toda la información de nuestro repositorio

```
root@Reto:/mnt/raid5# mkdir github
```

Iniciamos nuestra carpeta y accedemos a ella

```
root@Reto:/mnt/raid5/github# git init --bare --shared
```

A continuación, colocamos nuestro repositorio github en la carpeta creada anteriormente

```
root@Reto:/mnt/raid5/github# git config --global http.sslverify false
root@Reto:/mnt/raid5/github# git clone git@github.com:gaitza/RetoGrupo3.git
Clonar en «RetoGrupo3»...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), done.
Comprobando la conectividad… hecho.
```

Accedemos al repositorio clonado

```
root@Reto:/mnt/raid5/github# cd RetoGrupo3/
```

Creado una rama nueva y accedemos a ella

```
root@Reto:/mnt/raid5/github/RetoGrupo3# git branch RamaGaizka
root@Reto:/mnt/raid5/github/RetoGrupo3# git checkout RamaGaizka
Switched to branch 'RamaGaizka'
```

Configuramos la configuración global del github con nuestro email y usuario

```
root@Reto:/mnt/raid5/github/RetoGrupo3# git config --global user.email gaizkagorrotxategi87@gmail.co
m
root@Reto:/mnt/raid5/github/RetoGrupo3# git config --global user.name gaitza
```

Daremos permisos a el grupo y usuarios

```
root@Reto:/mnt/raid5/github# setfacl -Rm g:Grupo3:rwx /mnt/raid5/github/RetoGrupo3/
root@Reto:/mnt/raid5/github/RetoPrueba# chown :Grupo3 /mnt/raid5/github/RetoPrueba/
```

**En el GitHub**

Pasos para subir archivos al github

Revisamos con un status los cambios realizados, realizamos un add -A para confirmar los cambios

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git status
On branch RamaAdrian
Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        deleted:    DocumentacionSIS.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        DocumentacionSistemas.docx

no changes added to commit (use "git add" and/or "git commit -a")

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git add -A
```

Volvemos a hacer un status para revisar que hemos confirmado los cambios que vamos ha realizar y hacemos un commit para comentar los cambios realizados.

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git status
On branch RamaAdrian
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        deleted:    DocumentacionSIS.txt
        new file:   DocumentacionSistemas.docx


1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git commit -m "Documentacion Sistemas actualizada"
[RamaAdrian c4fb950] Documentacion Sistemas actualizada
 Committer: 1dam <1dam@TartangaLH.eus>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 2 files changed, 235 deletions(-)
 delete mode 100755 DocumentacionSIS.txt
 create mode 100644 DocumentacionSistemas.docx
```

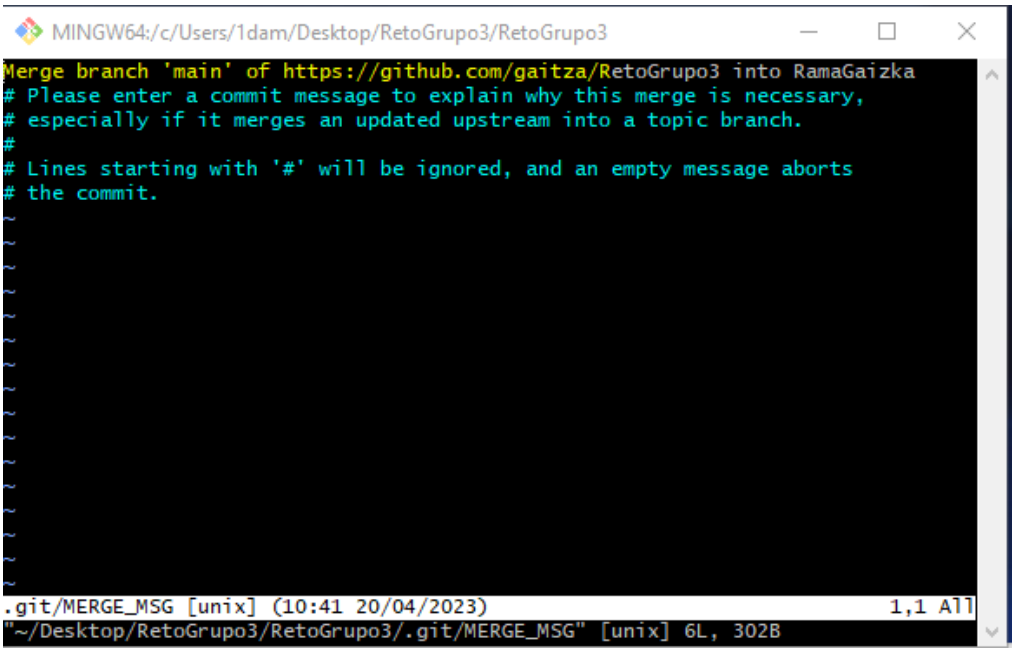
Para Subir los Archivos Hacemos

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoPrueba/RetoPrueba (RamaGaizka)
$ git push serverssh RamaGaizka
gaizka@192.168.20.66's password:
Enumerating objects: 19, done.
Counting objects: 100% (19/19), done.
Delta compression using up to 8 threads
Compressing objects: 100% (13/13), done.
Writing objects: 100% (19/19), 12.59 KiB | 4.20 MiB/s, done.
Total 19 (delta 3), reused 19 (delta 3), pack-reused 0
To ssh://192.168.20.66/mnt/raid5/github/RetoGrupo3
 * [new branch]      RamaGaizka -> RamaGaizka
```

Para Bajar los Archivos del GitHub

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git pull origin main
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (1/1), 659 bytes | 164.00 KiB/s, done.
From https://github.com/gaitza/RetoGrupo3
 * branch            main       -> FETCH_HEAD
   1452426..56756bf  main       -> origin/main
Updating 1452426..56756bf
Fast-forward
 RetoFinal.zip | Bin 1034488 -> 1020132 bytes
 1 file changed, 0 insertions(+), 0 deletions(-)
```

A la hora de hacer un git pull desde el git Bash en nuestro equipo local saldrá la siguiente página
Para salir de ella pondremos **:qa!**




Para ver los cambios en la terminal

# GITHUB METODO HTTP

```
root@Reto:/mnt/raid5/github/RetoGrupo3# apt-get install apache2 apache2-utils
```

```
root@Reto:/mnt/raid5/github/RetoGrupo3# a2enmod cgi alias env
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0
.1.1. Set the 'ServerName' directive globally to suppress this message
Your MPM seems to be threaded. Selecting cgid instead of cgi.
Module cgid already enabled
Module alias already enabled
Module env already enabled
```

```
root@Reto:/var/www# mkdir git
```

```
root@Reto:/var/www/git# chgrp -R www-data /var/www/git
```

```
root@Reto:/etc/apache2/sites-available# nano git.conf
```

```
  GNU nano 2.5.3          Archivo: /etc/apache2/sites-available/git.conf                Modificado

<VirtualHost *:80>
  ServerAdmin webmaster@localhost

  SetEnv GIT_PROJECT_ROOT /var/www/git
  SetEnv GIT_HTTP_EXPORT_ALL
  ScriptAlias /git/ /usr/lib/git-core/git-http-backend/

  Alias /git /var/www/git

  <Directory "/usr/lib/git-core*">
    Options ExecCGI Indexes
    Order allow,deny
    Allow from all
    Require all granted
  </Directory>

  <Files "git-http-backend">
        AuthType Basic
        AuthName "Git Access"
        AuthUserFile /opt/git/.htpasswd
        Require expr !(%{QUERY_STRING} -strmatch '*service=git-receive-pack*' || %{REQUEST_URI} =~ $
        Require valid-user
  </Files>

  ErrorLog ${APACHE_LOG_DIR}/error.log
  LogLevel warn
  CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

```
root@Reto:/opt/git# htdigest -c /opt/git/htpasswd "Git Access" gaizka
Adding password for gaizka in realm Git Access.
New password:
Re-type new password:
```

```
root@Reto:/etc/apache2/sites-available# a2dissite 000-default.conf
Site 000-default already disabled
```

```
root@Reto:/etc/apache2/sites-available# a2ensite git.conf
Site git already enabled
```

```
root@Reto:/etc/apache2/sites-available# service apache2 restart
```

```
  GNU nano 2.5.3          Archivo: /usr/local/bin/git-create-repo.sh

#!/bin/bash

GIT_DIR="/var/www/git"
REPO_NAME=$1

mkdir -p "${GIT_DIR}/${REPO_NAME}.git"
cd "${GIT_DIR}/${REPO_NAME}.git"

git init --bare &> /dev/null
touch git-daemon-export-ok
cp hooks/post-update.sample hooks/post-update
git config http.receivepack true
git update-server-info

chown -Rf www-data:www-data "${GIT_DIR}/${REPO_NAME}.git"

echo "Git repository '${REPO_NAME}' created in ${GIT_DIR}/${REPO_NAME}.git"
```

```
root@Reto:/etc/apache2# sudo chmod +x /usr/local/bin/git-create-repo.sh
root@Reto:/etc/apache2# sudo git-create-repo.sh RetoGrupo3
Git repository 'RetoGrupo3' created in /var/www/git/RetoGrupo3.git
root@Reto:/etc/apache2# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1
    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
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 10
00
    link/ether 00:0c:29:70:27:31 brd ff:ff:ff:ff:ff:ff
    inet 192.168.20.66/22 brd 192.168.23.255 scope global ens33
       valid_lft forever preferred_lft forever
    inet6 fe80::20c:29ff:fe70:2731/64 scope link
       valid_lft forever preferred_lft forever
```

```
root@Reto:/var/www# setfacl -Rm g:Grupo3:rwx /var/www/git/RetoGrupo3.git/
root@Reto:/var/www# chown :Grupo3 /var/www/git/RetoGrupo3.git/
```

```
root@Reto:/var/www/git/RetoGrupo3.git# ls -la
total 44
drwxrwsr-x+ 7 www-data Grupo3 4096 may 11 10:10 .
drwxrwsr-x+ 8 root     Grupo3 4096 may 11 09:59 ..
drwxrwxr-x+ 2 www-data Grupo3 4096 may 11 09:49 branches
-rw-rwxr--+ 1 root     Grupo3  153 may 11 10:10 config
-rw-rwxr--+ 1 www-data Grupo3   73 may 11 09:49 description
-rw-rwxr--+ 1 www-data Grupo3    0 may 11 09:49 git-daemon-export-ok
-rw-rwxr--+ 1 www-data Grupo3   23 may 11 09:49 HEAD
drwxrwxr-x+ 2 www-data Grupo3 4096 may 11 09:49 hooks
drwxrwxr-x+ 2 www-data Grupo3 4096 may 11 09:49 info
drwxrwxr-x+ 4 www-data Grupo3 4096 may 11 09:49 objects
drwxrwsr-x+ 4 www-data Grupo3 4096 may 11 09:49 refs
```

Ahora desde git bash añadiremos un túnel llamado serverhttp

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git remote add serverhttp http://github.com/gaitza/RetoGrupo3.git
```

Revisamos los túneles que tenemos disponibles, en caso de haber hecho la práctica correctamente deben salir 6 túneles

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git remote -v
origin  https://github.com/gaitza/RetoGrupo3.git (fetch)
origin  https://github.com/gaitza/RetoGrupo3.git (push)
serverhttp      http://github.com/gaitza/RetoGrupo3.git (fetch)
serverhttp      http://github.com/gaitza/RetoGrupo3.git (push)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github/RetoGrupo3 (fetch)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github/RetoGrupo3 (push)
```

**En el GitHub**

Pasos para subir archivos al github

Revisamos con un status los cambios realizados, realizados un add -A para confirmar los cambios

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git status
On branch RamaAdrian
Changes not staged for commit:
  (use "git add/rm <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        deleted:    DocumentacionSIS.txt

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        DocumentacionSistemas.docx

no changes added to commit (use "git add" and/or "git commit -a")

1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git add -A
```

Volvemos a hacer un status para revisar que hemos confirmado los cambios que vamos ha realizar y hacemos un commit para comentar los cambios realizados.

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git status
On branch RamaAdrian
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        deleted:    DocumentacionSIS.txt
        new file:   DocumentacionSistemas.docx


1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaAdrian)
$ git commit -m "Documentacion Sistemas actualizada"
[RamaAdrian c4fb950] Documentacion Sistemas actualizada
 Committer: 1dam <1dam@TartangaLH.eus>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 2 files changed, 235 deletions(-)
 delete mode 100755 DocumentacionSIS.txt
 create mode 100644 DocumentacionSistemas.docx
```

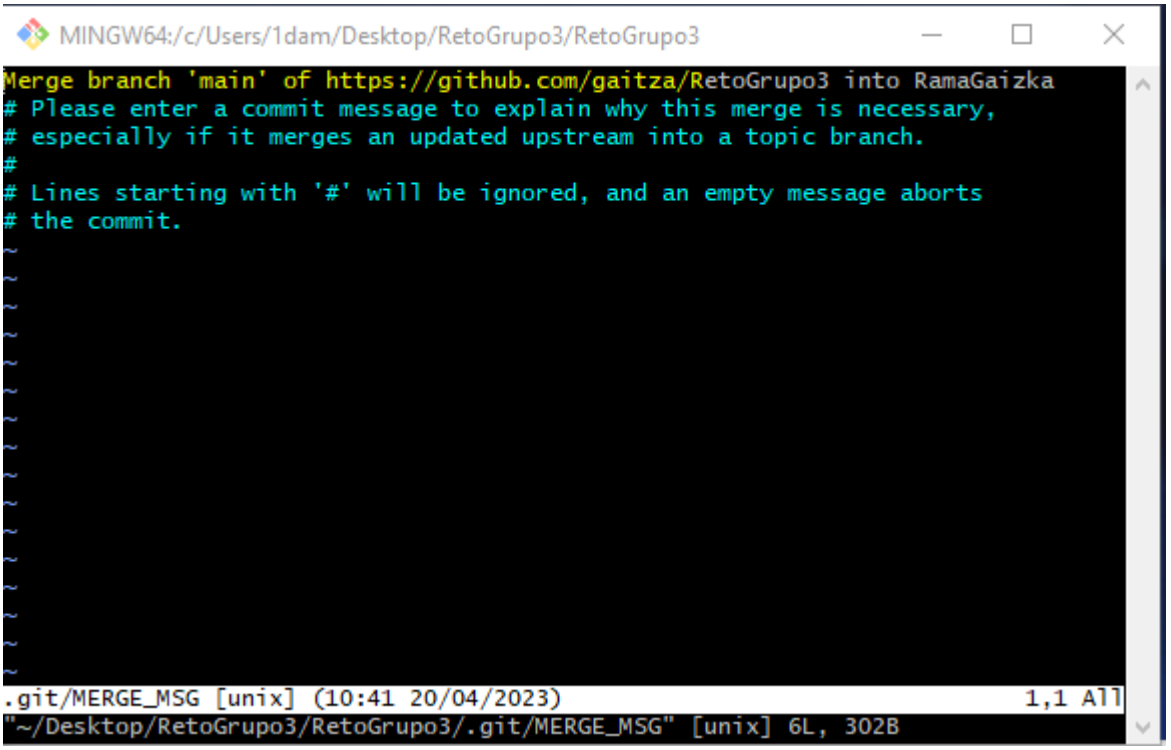
Para bajar los archivos usaremos el comando git pull

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoPrueba/RetoPrueba (RamaGaizka)
$ git pull origin main
remote: Enumerating objects: 2, done.
remote: Counting objects: 100% (2/2), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 2 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (2/2), 1.21 KiB | 207.00 KiB/s, done.
From https://github.com/gaitza/RetoPrueba
 * branch            main       -> FETCH_HEAD
   6fbb217..061e865  main       -> origin/main
Updating 14f716a..061e865
Fast-forward
```

Para pasarlos a nuestro servidor usaremos el git push

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoPrueba/RetoPrueba (RamaPaula)
$ git push serverhttp RamaPaula
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 8 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 487 bytes | 487.00 KiB/s, done.
Total 4 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 1 local object.
To https://github.com/gaitza/RetoPrueba.git
   813f028..499c5a9  RamaPaula -> RamaPaula
```

A la hora de hacer un git pull desde el git Bash en nuestro equipo local saldrá la siguiente página. Para salir de ella pondremos **:qa!**



Con el siguiente comando revisamos nuestro árbol de ramas github

```
root@Reto:/mnt/raid5/github/RetoGrupo3# git log --graph_
```

```
*   commit e6aceb836b0d4a2bb6a741501d857a217dd6aa03
|\  Merge: 862ad71 5054745
| | Author: 1dam <1dam@TartangaLH.eus>
| | Date:   Tue May 9 08:30:05 2023 +0200
| |
| |     Merge branch 'Paula' of https://github.com/gaitza/RetoGrupo3 into RamaGaizka
| |
| * commit 5054745f8be69b40ebc9f1b99cee1d167e3a0e5f
| | Author: Paulaa123123 <paulajimenezbenito@gmail.com>
| | Date:   Mon May 8 13:47:21 2023 +0200
| |
| |     Pgr actualizado
| |
*   |   commit 862ad711b0daa26faece0a5147e8d755fc351107
|\  \   Merge: b833511 b40f0ae
| | | | Author: 1dam <1dam@TartangaLH.eus>
| | | | Date:   Mon May 8 14:06:37 2023 +0200
| | | |
| | | |     Merge branch 'RamaGaizka2' of http://github.com/gaitza/RetoGrupo3 into RamaGaizka
| | | |
| * | | commit b40f0aed5869f71df94b2d1cc9245edcecbd3c59
| | | | Author: 1dam <1dam@TartangaLH.eus>
| | | | Date:   Thu Apr 27 10:20:30 2023 +0200
| | | |
| | | |     Documentacion Sistemas
| | | |
| * | | commit e54fde72873cb945979a0da9891e69e74263bfb3
| | | | Author: 1dam <1dam@TartangaLH.eus>
| | | | Date:   Thu Apr 27 10:17:29 2023 +0200
| | | |
| | | |     Eliminacion de documento
| | | |
*   | | commit b833511648cff43a779671fe942ee548e244982a
| | | | Author: 1dam <1dam@TartangaLH.eus>
| | | | Date:   Mon May 8 11:45:50 2023 +0200
| | | |
```

**Clave TOKEN**

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

# Dirección IP del servidor GIT (LAN).

192.168.20.66

# URLs de acceso al repositorio que sirve el servidor GIT (LAN).

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git remote -v
origin  https://github.com/gaitza/RetoGrupo3.git (fetch)
origin  https://github.com/gaitza/RetoGrupo3.git (push)
serverhttp      http://192.168.20.66/git/RetoGrupo3.git (fetch)
serverhttp      http://192.168.20.66/git/RetoGrupo3.git (push)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github/RetoGrupo3 (fetch)
serverssh       ssh://gaizka@192.168.20.66/mnt/raid5/github/RetoGrupo3 (push)
```

# URLs de acceso al repositorio GitHub (internet).

https://github.com/gaitza/RetoGrupo3

# Nombre de todas las ramas de desarrollo y persona responsable de cada rama.

```
1dam@HZ301203 MINGW64 ~/Desktop/RetoGrupo3/RetoGrupo3 (RamaGaizka)
$ git branch
  RamaAdrian
* RamaGaizka
  RamaGaizka2
  RamaPaula
  RamaPaula2
  main
```