

Le quitamos un disco duro a la máquina de UbuntuServer:
Para ellos vamos a detalles -> Almacenamiento
y eliminamos el disco duro.

Con ello hemos simulado que se ha caído un disco duro de nuestro RAID.

Iniciamos UbuntuServer

Intentamos descubrir que ha pasado.

Para ello utilizamos el comando **dmesg** que nos da información sobre el kernel.

Ahi podemos ver que el último mensaje del kernel es sobre el RAID.

No queda muy claro lo que ha pasado, pero aparece que se ha interrumpido la ejecución.

Ahora que sabemos que el fallo está relacionado con el RAID, consultamos información sobre el RAID:

cat /proc/mdstat.

de ahí sacamos que los md están inactivos.

```
[ 2.704635] raid6: sse2x2  xor()  7903 MB/s
[ 2.767356] raid6: sse2x1  gen() 10400 MB/s
[ 2.826532] raid6: sse2x1  xor()  5988 MB/s
[ 2.826895] raid6: using algorithm avx2x4 gen() 32479 MB/s
[ 2.827253] raid6: ..... xor() 19806 MB/s, rmw enabled
[ 2.827611] raid6: using avx2x2 recovery algorithm
[ 2.829681] xor: automatically using best checksumming function  avx
[ 2.831194] async_tx: api initialized (async)
done.
Begin: Running /scripts/init-premount ... done.
Begin: Mounting root file system ... Begin: Running /scripts/local-top ... Volume group "vg0" not
found
    Cannot process volume group vg0
cryptsetup: Waiting for encrypted source device
    UUID=679ea870-9bdb-4548-9d66-af33a8457dbf...
        ALERT! encrypted source device UUID=679ea870-9bdb-4548-9d66-af33a8457dbf does not exist, can
't unlock dm_crypt-0.
    Check cryptopts=source= bootarg: cat /proc/cmdline
        or missing modules, devices: cat /proc/modules; ls /dev
Dropping to a shell.

BusyBox v1.30.1 (Ubuntu 1:1.30.1-4ubuntu6.2) built-in shell (ash)
Enter 'help' for a list of built-in commands.

(initramfs) cat procmdstat
cat: can't open 'procmdstat': No such file or directory
(initramfs) cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : inactive sda2[0](S)
      306176 blocks super 1.2

md127 : inactive sda3[0](S)
      10166272 blocks super 1.2

unused devices: <none>
(initramfs) _
```

Esto se debe a que cuando el RAID detecta un problema, no se carga, sino que se queda inactivo.

Ahora utilizamos **mdadm** para administrar los md.

mdadm -R /dev/md126

mdadm -R /dev/md127

```
found
    Cannot process volume group vgo
cryptsetup: Waiting for encrypted source device
    UUID=679ea870-9bdb-4548-9d66-af33a8457dbf...
        ALERT! encrypted source device UUID=679ea870-9bdb-4548-9d66-af33a8457dbf does not exist, can't unlock dm_crypt-0.
        Check cryptopts=source= bootarg: cat /proc/cmdline
        or missing modules, devices: cat /proc/modules; ls /dev
Dropping to a shell.

BusyBox v1.30.1 (Ubuntu 1:1.30.1-4ubuntu6.2) built-in shell (ash)
Enter 'help' for a list of built-in commands.

(initramfs) cat procmdstat
cat: can't open 'procmdstat': No such file or directory
(initramfs) cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : inactive sda2[0](S)
    306176 blocks super 1.2

md127 : inactive sda3[0](S)
    10166272 blocks super 1.2

unused devices: <none>
(initramfs) mdadm -R /dev/md12
md126  md127
(initramfs) mdadm -R /dev/md126
[ 1761.093870] md/raid1:md126: active with 1 out of 2 mirrors
[ 1761.094601] md126: detected capacity change from 0 to 313524224
mdadm: started array /dev/md/md-boot
[ 1761.135745] md126: p1
(initramfs) mdadm -R /dev/md127
[ 1770.938547] md/raid1:md127: active with 1 out of 2 mirrors
[ 1770.938925] md127: detected capacity change from 0 to 10410262528
mdadm: started array /dev/md/md-lvm
(initramfs) -
```

Si ahora volvemos a hacer **cat /proc/mdstat** veremos que si están activos

```
mdadm: started array /dev/md/md-lvm
(initramfs) cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : active (auto-read-only) raid1 sda2[0]
    306176 blocks super 1.2 [2/1] [U_]

md127 : active (auto-read-only) raid1 sda3[0]
    10166272 blocks super 1.2 [2/1] [U_]

unused devices: <none>
(initramfs)
```

Para que continúe pulsamos **ctrl+d**.
Solicita la clave para desencriptar.

Ahora tendríamos un RAID que funciona pero tiene un disco duro caído. Eso no es ideal porque si se cae el otro disco perderíamos toda la información.

Para discos duros que son muy parecidos, que son de la misma tirada y tal, no es raro que fallen uno cerca del otro(temporalmente).

Conviene arreglarlo añadiendo otro disco duro.

Antes de añadirlo:

```
Usage of /home: 0.3% of 665MB  Users logged in:      0
Memory usage:   56%           IPv4 address for enp0s3: 10.0.2.15
Swap usage:    0%            IPv4 address for enp0s8: 192.168.56.105

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  Simple, hardened, Kubernetes for production, from RaspberryPi to DC.

  https://microk8s.io/high-availability

116 updates can be installed immediately.
27 of these updates are security updates.
To see these additional updates run: apt list --upgradable

Last login: Mon Nov  9 14:34:02 UTC 2020 from 192.168.56.1 on pts/0
antonio@ubuntu-server:~$ lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
loop0       7:0    0 55.3M  1 loop  /snap/core18/1885
loop1       7:1    0 55.4M  1 loop  /snap/core18/1932
loop2       7:2    0 70.6M  1 loop  /snap/lxd/16922
loop3       7:3    0 67.8M  1 loop  /snap/lxd/18150
loop5       7:5    0 31M   1 loop  /snap/snapd/9721
loop6       7:6    0 31.1M  1 loop  /snap/snapd/10492
sda        8:0    0 10G   0 disk
└─sda1      8:1    0 1M    0 part
└─sda2      8:2    0 300M  0 part
  └─md126    9:126 0 299M  0 raid1
    ├─md126p1 259:0 0 294M  0 part  /boot
    └─sda3      8:3    0 9.7G  0 part
      └─md127    9:127 0 9.7G  0 raid1
        └─dm_crypt-0 253:0 0 9.7G  0 crypt
          ├─vg0-lv--0--root 253:1 0 8G   0 lvm   /
          ├─vg0-lv--0--swap 253:2 0 1G   0 lvm   [SWAP]
          └─vg0-lv--0--home 253:3 0 692M 0 lvm   /home
sr0        11:0   1 1024M 0 rom
sr1        11:1   1 1024M 0 rom
antonio@ubuntu-server:~$ _
```

Después de añadirlo: Aparece sdb.

```
  └─vg0-lv--0--root 253:1 0 8G   0 lvm   /
    ├─vg0-lv--0--swap 253:2 0 1G   0 lvm   [SWAP]
    └─vg0-lv--0--home 253:3 0 692M 0 lvm   /home
sr0        11:0   1 1024M 0 rom
sr1        11:1   1 1024M 0 rom
antonio@ubuntu-server:~$ lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
loop0       7:0    0 55.3M  1 loop  /snap/core18/1885
loop1       7:1    0 55.4M  1 loop  /snap/core18/1932
loop2       7:2    0 70.6M  1 loop  /snap/lxd/16922
loop3       7:3    0 67.8M  1 loop  /snap/lxd/18150
loop5       7:5    0 31M   1 loop  /snap/snapd/9721
loop6       7:6    0 31.1M  1 loop  /snap/snapd/10492
sda        8:0    0 10G   0 disk
└─sda1      8:1    0 1M    0 part
└─sda2      8:2    0 300M  0 part
  └─md126    9:126 0 299M  0 raid1
    ├─md126p1 259:0 0 294M  0 part  /boot
    └─sda3      8:3    0 9.7G  0 part
      └─md127    9:127 0 9.7G  0 raid1
        └─dm_crypt-0 253:0 0 9.7G  0 crypt
          ├─vg0-lv--0--root 253:1 0 8G   0 lvm   /
          ├─vg0-lv--0--swap 253:2 0 1G   0 lvm   [SWAP]
          └─vg0-lv--0--home 253:3 0 692M 0 lvm   /home
sdb        8:16   0 10G   0 disk
sr0        11:0   1 1024M 0 rom
sr1        11:1   1 1024M 0 rom
antonio@ubuntu-server:~$ _
```

Tenemos que darle tres particiones a sdb:

Son sdb1(1M), sdb2(300M) y sdb3(9.7G)

sudo su

fdisk /dev/sdb

```
Command (m for help): n
Partition type
  p  primary (0 primary, 0 extended, 4 free)
  e  extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-20971519, default 2048):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (2048-20971519, default 20971519): +1M
Created a new partition 1 of type 'Linux' and of size 1 MiB.

Command (m for help): n
Partition type
  p  primary (1 primary, 0 extended, 3 free)
  e  extended (container for logical partitions)
Select (default p): p
Partition number (2-4, default 2):
First sector (4096-20971519, default 4096):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (4096-20971519, default 20971519): 300M
Value out of range.
Last sector, +/-sectors or +/-size{K,M,G,T,P} (4096-20971519, default 20971519): +300M
Created a new partition 2 of type 'Linux' and of size 300 MiB.

Command (m for help): n
Partition type
  p  primary (2 primary, 0 extended, 2 free)
  e  extended (container for logical partitions)
Select (default p): p
Partition number (3,4, default 3):
First sector (618496-20971519, default 618496):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (618496-20971519, default 20971519): -0
Created a new partition 3 of type 'Linux' and of size 9.7 GiB.

Command (m for help): w
```

Ya estarán creadas las 3 particiones:

```
Partition number (3,4, default 3):
First sector (618496-20971519, default 618496):
Last sector, +/-sectors or +/-size{K,M,G,T,P} (618496-20971519, default 20971519): -0
Created a new partition 3 of type 'Linux' and of size 9.7 GiB.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

root@ubuntu-server:/home/antonio# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
loop0      7:0    0 55.3M  1 loop  /snap/core18/1885
loop1      7:1    0 55.4M  1 loop  /snap/core18/1932
loop2      7:2    0 70.6M  1 loop  /snap/1xd/16922
loop3      7:3    0 67.8M  1 loop  /snap/1xd/18150
loop5      7:5    0 31M   1 loop  /snap/snapd/9721
loop6      7:6    0 31.1M  1 loop  /snap/snapd/10492
sda        8:0    0  10G  0 disk
└─sda1     8:1    0   1M  0 part
└─sda2     8:2    0 300M  0 part
└─md126    9:126  0 299M  0 raid1
  └─md126p1 259:0  0 294M  0 part  /boot
└─sda3     8:3    0  9.7G 0 part
  └─md127    9:127  0  9.7G 0 raid1
    └─dm_crypt-0 253:0  0  9.7G 0 crypt
      ├─vg0-1v--0--root 253:1  0   8G 0 lvm   /
      ├─vg0-1v--0--swap 253:2  0   1G 0 lvm   [SWAP]
      └─vg0-1v--0--home 253:3  0 692M 0 lvm   /home
sdb        8:16   0  10G  0 disk
└─sdb1     8:17   0   1M  0 part
└─sdb2     8:18   0 300M  0 part
└─sdb3     8:19   0  9.7G 0 part
sr0       11:0   1 1024M 0 rom
sr1       11:1   1 1024M 0 rom
root@ubuntu-server:/home/antonio#
```

Ahora vamos a asignar a cada md un disco con **mdadm**

mdadm /dev/md126 --add sdb2

mdadm /dev/md127 --add sdb3

```
root@ubuntu-server:/home/antonio# mdadm /dev/md126 --add /dev/sdb2
mdadm: added /dev/sdb2
root@ubuntu-server:/home/antonio# mdadm /dev/md127 --add /dev/sdb3
mdadm: added /dev/sdb3
root@ubuntu-server:/home/antonio# lsblk
NAME      MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
loop0       7:0    0 55.3M  1 loop  /snap/core18/1885
loop1       7:1    0 55.4M  1 loop  /snap/core18/1932
loop2       7:2    0 70.6M  1 loop  /snap/lxd/16922
loop3       7:3    0 67.8M  1 loop  /snap/lxd/18150
loop5       7:5    0   31M  1 loop  /snap/snapd/9721
loop6       7:6    0 31.1M  1 loop  /snap/snapd/10492
sda        8:0    0 10G   0 disk
└─sda1      8:1    0   1M   0 part
└─sda2      8:2    0 300M  0 part
  └─md126    9:126  0 299M  0 raid1
    ├─md126p1 259:0  0 294M  0 part  /boot
    └─sda3      8:3    0 9.7G  0 part
  └─md127    9:127  0 9.7G  0 raid1
    ├─dm_crypt-0 253:0  0 9.7G  0 crypt
    │  ├─vg0-lv--0--root 253:1  0   8G  0 lvm   /
    │  ├─vg0-lv--0--swap 253:2  0   1G  0 lvm   [SWAP]
    │  ├─vg0-lv--0--home 253:3  0 692M  0 lvm   /home
sdb        8:16   0 10G   0 disk
└─sdb1      8:17   0   1M   0 part
└─sdb2      8:18   0 300M  0 part
  └─md126    9:126  0 299M  0 raid1
    ├─md126p1 259:0  0 294M  0 part  /boot
    └─sdb3      8:19   0 9.7G  0 part
  └─md127    9:127  0 9.7G  0 raid1
    ├─dm_crypt-0 253:0  0 9.7G  0 crypt
    │  ├─vg0-lv--0--root 253:1  0   8G  0 lvm   /
    │  ├─vg0-lv--0--swap 253:2  0   1G  0 lvm   [SWAP]
    │  ├─vg0-lv--0--home 253:3  0 692M  0 lvm   /home
sr0        11:0   1 1024M 0 rom
sr1        11:1   1 1024M 0 rom
root@ubuntu-server:/home/antonio# -
```

Ahora visualizamos el fichero de monitorización:

cat /proc/mdstat

```
md127 : active raid1 sdb3[2] sda3[0]
      10166272 blocks super 1.2 [2/1] [U_]
      [======>.....]  recovery = 37.4% (3812736/10166272) finish=2.3min speed=44886K/sec

unused devices: <none>
root@ubuntu-server:/home/antonio# cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : active raid1 sdb2[2] sda2[0]
      306176 blocks super 1.2 [2/2] [UU]

md127 : active raid1 sdb3[2] sda3[0]
      10166272 blocks super 1.2 [2/1] [U_]
      [======>.....]  recovery = 40.6% (4137728/10166272) finish=1.8min speed=54038K/sec

unused devices: <none>
root@ubuntu-server:/home/antonio# cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : active raid1 sdb2[2] sda2[0]
      306176 blocks super 1.2 [2/2] [UU]

md127 : active raid1 sdb3[2] sda3[0]
      10166272 blocks super 1.2 [2/1] [U_]
      [======>.....]  recovery = 41.0% (4175360/10166272) finish=1.8min speed=52392K/sec

unused devices: <none>
root@ubuntu-server:/home/antonio# cat /proc/mdstat
Personalities : [linear] [multipath] [raid0] [raid1] [raid6] [raid5] [raid4] [raid10]
md126 : active raid1 sdb2[2] sda2[0]
      306176 blocks super 1.2 [2/2] [UU]

md127 : active raid1 sdb3[2] sda3[0]
      10166272 blocks super 1.2 [2/1] [U_]
      [======>.....]  recovery = 42.7% (4345088/10166272) finish=1.7min speed=56625K/sec

unused devices: <none>
root@ubuntu-server:/home/antonio#
```

Aparece una barra de progreso porque ya al añadir el disco se están copiando los datos al nuevo disco.

Por último, vamos a copiar el grub en la primera partición

grub-install /dev/sdb

para asegurarnos de que también se pueda utilizar ese disco duro para iniciar el SO.

Ejercicio 1: Instalación de zabbix 5.0

Realice una instalación de Zabbix 5.0 en su servidor con Ubuntu Server20.04 y configürepara que se monitorice a él mismo y para que monitorice a la máquina con CentOS.Puede configurar varios parámetros para monitorizar, uso de CPU, memoria, etc. perodebe configurar de manera obligatoria la monitorización de los servicios SSH y HTTP.

En UbuntuServer:

1.- Instalamos el repositorio de zabbix

Elegimos la plataforma, la versión de zabbix que queremos instalar, la base de datos y el servidor web:

The screenshot shows a Firefox browser window with several tabs open. The active tab is 'Download Zabbix' from the official Zabbix website. The page displays a table for selecting software components based on the chosen platform. The 'ZABBIX VERSION' column has '5.2', '5.0 LTS' (selected), '4.0 LTS', and '3.0 LTS'. The 'OS DISTRIBUTION' column has 'Red Hat Enterprise Linux', 'CentOS', 'Oracle Linux', and 'Ubuntu' (selected). The 'OS VERSION' column has '20.04 (Focal)', '18.04 (Bionic)', '16.04 (Xenial)', and '14.04 (Trusty)'. The 'DATABASE' column has 'MySQL' and 'PostgreSQL'. The 'WEB SERVER' column has 'Apache' and 'NGINX'. A 'DOWNLOAD' button is located at the bottom right of the table area.

ZABBIX VERSION	OS DISTRIBUTION	OS VERSION	DATABASE	WEB SERVER
5.2	Red Hat Enterprise Linux	20.04 (Focal)	MySQL	Apache
5.0 LTS	CentOS	18.04 (Bionic)	PostgreSQL	NGINX
4.0 LTS	Oracle Linux	16.04 (Xenial)		
3.0 LTS	Ubuntu	14.04 (Trusty)		

Deabajo nos aparece el comando que tenemos que utilizar para descargar el repositorio de zabbix:

wget

https://repo.zabbix.com/zabbix/5.0/ubuntu/pool/main/z/zabbix-release/zabbix-release_5.0-1+focal_all.deb

```
antonio@ubuntu-server:~$ sudo su
[sudo] password for antonio:
root@ubuntu-server:/home/antonio# wget https://repo.zabbix.com/zabbix/5.0/ubuntu/pool/main/z/zabbix-
release/zabbix-release_5.0-1+focal_all.deb
--2020-12-12 15:40:24-- https://repo.zabbix.com/zabbix/5.0/ubuntu/pool/main/z/zabbix-release/zabbix-
release_5.0-1+focal_all.deb
Resolving repo.zabbix.com (repo.zabbix.com)... 178.128.6.101, 2604:a880:2:d0::2062:d001
Connecting to repo.zabbix.com (repo.zabbix.com)|178.128.6.101|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4244 (4.1K) [application/octet-stream]
Saving to: 'zabbix-release_5.0-1+focal_all.deb'

zabbix-release_5.0-1+foc 100%[=====] 4.14K --.-KB/s in 0s

2020-12-12 15:40:25 (343 MB/s) - 'zabbix-release_5.0-1+focal_all.deb' saved [4244/4244]

root@ubuntu-server:/home/antonio# _
```

Ahora hay que desempaquetarlo e instalarlo:

```
# dpkg -i zabbix-release_5.0-1+focal_all.deb
```

```
zabbix-release_5.0-1+foc 100%[=====] 4.14K --.-KB/s in 0s
2020-12-12 15:40:25 (343 MB/s) - 'zabbix-release_5.0-1+focal_all.deb' saved [4244/4244]
root@ubuntu-server:/home/antonio# dpkg -i zabbix-release_5.0-1+focal_all.deb
Selecting previously unselected package zabbix-release.
(Reading database ... 75361 files and directories currently installed.)
Preparing to unpack zabbix-release_5.0-1+focal_all.deb ...
Unpacking zabbix-release (1:5.0-1+focal) ...
Setting up zabbix-release (1:5.0-1+focal) ...
root@ubuntu-server:/home/antonio#
```

Después de esto actualizamos los repositorios.

```
# apt update
```

2.- Instalamos el servidor, el front-end y el agent de zabbix.

El servidor será el componente central al que los agentes y representantes de Zabbix informarán sobre la disponibilidad e integridad de los sistemas .

```
# apt -y install zabbix-server-mysql (-y para decir "si" a todo).
```

```
Preparing to unpack .../4-11bsnmp35_5.8+dfsg-2ubuntu2.3_amd64.deb ...
Unpacking libsnmp35:amd64 (5.8+dfsg-2ubuntu2.3) ...
Selecting previously unselected package snmpd.
Preparing to unpack .../5-snmpd_5.8+dfsg-2ubuntu2.3_amd64.deb ...
Unpacking snmpd (5.8+dfsg-2ubuntu2.3) ...
Selecting previously unselected package libodbc1:amd64.
Preparing to unpack .../6-libodbc1_2.3.6-0.1build1_amd64.deb ...
Unpacking libodbc1:amd64 (2.3.6-0.1build1) ...
Selecting previously unselected package libopenipmi0.
Preparing to unpack .../7-libopenipmi0_2.0.27-0ubuntu2_amd64.deb ...
Unpacking libopenipmi0 (2.0.27-0ubuntu2) ...
Selecting previously unselected package fping.
Preparing to unpack .../8-fping_4.2-1_amd64.deb ...
Unpacking fping (4.2-1) ...
Selecting previously unselected package zabbix-server-mysql.
Preparing to unpack .../9-zabbix-server-mysql_1%3a5.0.6-2+focal_amd64.deb ...
Unpacking zabbix-server-mysql (1:5.0.6-2+focal) ...
Setting up libmysqlclient21:amd64 (8.0.22-0ubuntu0.20.04.3) ...
Setting up libsnmp-base (5.8+dfsg-2ubuntu2.3) ...
Setting up libsensors-config (1:3.6.0-2ubuntu1) ...
Setting up libodbc1:amd64 (2.3.6-0.1build1) ...
Setting up libsensors5:amd64 (1:3.6.0-2ubuntu1) ...
Setting up libopenipmi0 (2.0.27-0ubuntu2) ...
Setting up fping (4.2-1) ...
Setting up libsnmp35:amd64 (5.8+dfsg-2ubuntu2.3) ...
Setting up zabbix-server-mysql (1:5.0.6-2+focal) ...
Setting up snmpd (5.8+dfsg-2ubuntu2.3) ...
adduser: Warning: The home directory '/var/lib/snmp' does not belong to the user you are currently creating.
Created symlink /etc/systemd/system/multi-user.target.wants/snmpd.service → /lib/systemd/system/snmpd.service.
Processing triggers for libc-bin (2.31-0ubuntu9) ...
Processing triggers for systemd (245.4-4ubuntu3.2) ...
Processing triggers for man-db (2.9.1-1) ...
root@ubuntu-server:/home/antonio# apt -y install zabbix-server-mysql
```

A continuación, instalamos Zabbix-FrontEnd

```
# apt -y install zabbix-frontend-php
```

```
Creating config file /etc/php/7.4/mods-available/bcmath.ini with new version
Setting up libjbig0:amd64 (2.1-3.1build1) ...
Setting up libwebp0:amd64 (0.6.1-2) ...
Setting up fonts-dejavu-core (2.37-1) ...
Setting up libjpeg-turbo0:amd64 (2.0.3-0ubuntu1.20.04.1) ...
Setting up php7.4-ldap (7.4.3-4ubuntu2.4) ...

Creating config file /etc/php/7.4/mods-available/ldap.ini with new version
Setting up ttf-dejavu-core (2.37-1) ...
Setting up libonig5:amd64 (6.9.4-1) ...
Setting up libjpeg8:amd64 (8c-2ubuntu8) ...
Setting up php-xml (2:7.4+75) ...
Setting up php-bcmath (2:7.4+75) ...
Setting up fontconfig-config (2.13.1-2ubuntu3) ...
Setting up php7.4-mbstring (7.4.3-4ubuntu2.4) ...

Creating config file /etc/php/7.4/mods-available(mbstring).ini with new version
Setting up php-mbstring (2:7.4+75) ...
Setting up php-ldap (2:7.4+75) ...
Setting up libtiff5:amd64 (4.1.0~git191117-2build1) ...
Setting up libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
Setting up libgd3:amd64 (2.2.5-5.2ubuntu2) ...
Setting up php7.4-gd (7.4.3-4ubuntu2.4) ...

Creating config file /etc/php/7.4/mods-available/gd.ini with new version
Setting up zabbix-frontend-php (1:5.0.6-2+focal) ...
update-alternatives: using /usr/share/fonts/truetype/dejavu/DejaVuSans.ttf to provide /usr/share/zabbix/assets/fonts/graphfont.ttf (zabbix-frontend-font) in auto mode
Setting up php-gd (2:7.4+75) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.4) ...
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.4) ...
root@ubuntu-server:/home/antonio# apt -y install zabbix-frontend-php
```

Para poder monitorizar nuestra máquina de Ubuntu Server, instalamos en ella el agente de zabbix.

```
# apt -y install zabbix-agent
```

```
Setting up libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
Setting up libgd3:amd64 (2.2.5-5.2ubuntu2) ...
Setting up php7.4-gd (7.4.3-4ubuntu2.4) ...

Creating config file /etc/php/7.4/mods-available/gd.ini with new version
Setting up zabbix-frontend-php (1:5.0.6-2+focal) ...
update-alternatives: using /usr/share/fonts/truetype/dejavu/DejaVuSans.ttf to provide /usr/share/zabbix/assets/fonts/graphfont.ttf (zabbix-frontend-font) in auto mode
Setting up php-gd (2:7.4+75) ...
Processing triggers for libc-bin (2.31-0ubuntu9) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.4) ...
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.4) ...
root@ubuntu-server:/home/antonio# apt -y install zabbix-agent
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  zabbix-agent
0 upgraded, 1 newly installed, 0 to remove and 106 not upgraded.
Need to get 201 kB of archives.
After this operation, 802 kB of additional disk space will be used.
Get:1 http://repo.zabbix.com/zabbix/5.0/ubuntu focal/main amd64 zabbix-agent amd64 1:5.0.6-2+focal [201 kB]
Fetched 201 kB in 1s (139 kB/s)
Selecting previously unselected package zabbix-agent.
(Reading database ... 77124 files and directories currently installed.)
Preparing to unpack .../zabbix-agent_1%3a5.0.6-2+focal_amd64.deb ...
Unpacking zabbix-agent (1:5.0.6-2+focal) ...
Setting up zabbix-agent (1:5.0.6-2+focal) ...
Created symlink /etc/systemd/system/multi-user.target.wants/zabbix-agent.service → /lib/systemd/system/zabbix-agent.service.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.2) ...
root@ubuntu-server:/home/antonio# apt -y install zabbix-agent
```

```

# apt -y install zabbix-apache-conf
#systemctl reload apache2
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.2) ...
root@ubuntu-server:/home/antonio# apt -y install zabbix-apache-conf
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  zabbix-apache-conf
0 upgraded, 1 newly installed, 0 to remove and 106 not upgraded.
Need to get 5568 B of archives.
After this operation, 17.4 kB of additional disk space will be used.
Get:1 http://repo.zabbix.com/zabbix/5.0/ubuntu focal/main amd64 zabbix-apache-conf all 1:5.0.6-2+focal [5568 B]
Fetched 5568 B in 1s (9092 B/s)
Selecting previously unselected package zabbix-apache-conf.
(Reading database ... 77136 files and directories currently installed.)
Preparing to unpack .../zabbix-apache-conf_1%3a5.0.6-2+focal_all.deb ...
Unpacking zabbix-apache-conf (1:5.0.6-2+focal) ...
Setting up zabbix-apache-conf (1:5.0.6-2+focal) ...
Enabling conf zabbix.
To activate the new configuration, you need to run:
  systemctl reload apache2
root@ubuntu-server:/home/antonio# systemctl reload apache2
root@ubuntu-server:/home/antonio# 

```

3.- Configuramos la base de datos.

- Creamos una base de datos.

```
# mysql -uroot -p
```

```
password = practicas,ISE
```

```
mysql> create database zabbix character set utf8 collate utf8_bin;
mysql> create user zabbix@localhost identified by 'practicas,ISE';
mysql> grant all privileges on zabbix.* to zabbix@localhost;
mysql> quit;
```

```

root@ubuntu-server:/home/antonio# mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.22-Ubuntu0.20.04.3 (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> create database zabbix character set utf8 collate utf8_bin;
Query OK, 1 row affected, 2 warnings (1.76 sec)

mysql> create user zabbix@localhost identified by 'practicas,ISE'
-> ;
Query OK, 0 rows affected (1.48 sec)

mysql> grant all privileges on zabbix.* to zabbix@localhost;
Query OK, 0 rows affected (0.86 sec)

mysql> 

```

- Importamos el esquema inicial y los datos al host del servidor de zabbix

```
# zcat /usr/share/doc/zabbix-server-mysql*/create.sql.gz | mysql -u zabbix -p zabbix
```

- Configuramos la base de datos de Zabbix server

```
#vi /etc/zabbix/zabbix_server.conf
DBUser=zabbix
DBPassword=practicas,ISE
```

```
# Default:
# DBUser=

DBUser=zabbix

### Option: DBPassword
#           Database password.
#           Comment this line if no password is used.
#
# Mandatory: no
# Default:
DBPassword=practicas,ISE

### Option: DBSocket
#           Path to MySQL socket.
#
# Mandatory: no
# Default:
# DBSocket=
```

"/etc/zabbix/zabbix_server.conf" 860L, 21596C written
root@ubuntu-server:/home/antonio# _

- Configuramos PHP para Zabbix frontend descomentando las dos líneas de la zona horaria y cambiando Riga por Madrid.

```
# vi /etc/zabbix/apache.conf
```

```
<IfModule mod_alias.c>
    Alias /zabbix /usr/share/zabbix
</IfModule>

<Directory "/usr/share/zabbix">
    Options FollowSymLinks
    AllowOverride None
    Order allow,deny
    Allow from all

    <IfModule mod_php5.c>
        php_value max_execution_time 300
        php_value memory_limit 128M
        php_value post_max_size 16M
        php_value upload_max_filesize 2M
        php_value max_input_time 300
        php_value max_input_vars 10000
        php_value always_populate_raw_post_data -1
        php_value date.timezone Europe/Madrid
    </IfModule>
    <IfModule mod_php7.c>
        php_value max_execution_time 300
        php_value memory_limit 128M
        php_value post_max_size 16M
        php_value upload_max_filesize 2M
        php_value max_input_time 300
        php_value max_input_vars 10000
        php_value always_populate_raw_post_data -1
        php_value date.timezone Europe/Madrid
    </IfModule>
</Directory>

<Directory "/usr/share/zabbix/conf">
    Order deny,allow
    Deny from all
</Directory>
```

"/etc/zabbix/apache.conf" 68L, 1669C written
root@ubuntu-server:/home/antonio#

- Iniciamos los procesos de Zabbix server, zabbix agent y apache2

```
# systemctl restart zabbix-server zabbix-agent apache2
# systemctl enable zabbix-server zabbix-agent apache2
```

```
php_value post_max_size 16M
php_value upload_max_filesize 2M
php_value max_input_time 300
php_value max_input_vars 10000
php_value always_populate_raw_post_data -1
    php_value date.timezone Europe/Madrid
</IfModule>
<IfModule mod_php7.c>
    php_value max_execution_time 300
    php_value memory_limit 128M
    php_value post_max_size 16M
    php_value upload_max_filesize 2M
    php_value max_input_time 300
    php_value max_input_vars 10000
    php_value always_populate_raw_post_data -1
    php_value date.timezone Europe/Madrid
</IfModule>
</Directory>

<Directory "/usr/share/zabbix/conf">
    Order deny,allow
    Deny from all
</Directory>
"/etc/zabbix/apache.conf" 68L, 1669C written
root@ubuntu-server:/home/antonio# systemctl restart zabbix-server zabbix-agent apache2
root@ubuntu-server:/home/antonio# systemctl enable zabbix-server zabbix-agent apache2
Synchronizing state of zabbix-server.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable zabbix-server
Synchronizing state of zabbix-agent.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable zabbix-agent
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
Created symlink /etc/systemd/system/multi-user.target.wants/zabbix-server.service → /lib/systemd/system/zabbix-server.service.
root@ubuntu-server:/home/antonio# _
```

- Ahora modificamos el archivo zabbix_agentd.conf que está en /etc/zabbix/ para poder monitorizar UbuntuServer :

Server=192.168.56.105
 ServerActive=192.168.56.105
 Hostname=UbuntuServer

```
### Option: Server
#       List of comma delimited IP addresses, optionally in CIDR notation, or DNS names of Zabbix servers and Zabbix proxies.
#       Incoming connections will be accepted only from the hosts listed here.
#       If IPv6 support is enabled then '127.0.0.1', '::127.0.0.1', '::ffff:127.0.0.1' are treated equally
#       and '::/0' will allow any IPv4 or IPv6 address.
#       '0.0.0.0/0' can be used to allow any IPv4 address.
#       Example: Server=127.0.0.1,192.168.1.0/24,::1,2001:db8::/32,zabbix.example.com
#
# Mandatory: yes, if StartAgents is not explicitly set to 0
# Default:
# Server=

Server=192.168.56.105

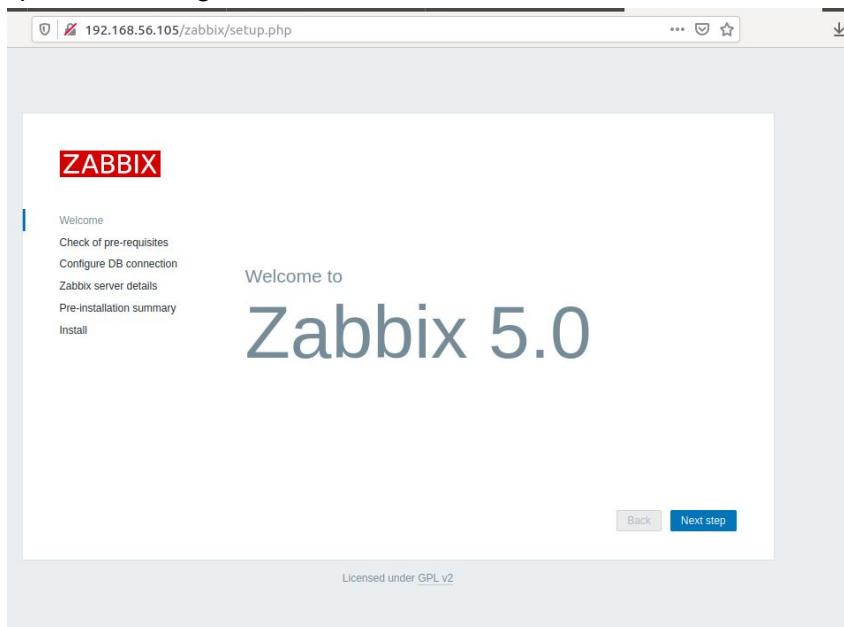
### Option: ListenPort
#       Agent will listen on this port for connections from the server.
#
# Mandatory: no
```

- Reiniciamos el agente de zabbix y le damos permiso con el cortafuegos

```
#      does not support user parameters or aliases.
#
"/etc/zabbix/zabbix_agentd.conf" 509L, 15106C written
root@ubuntu-server:/home/antonio# systemctl restart zabbix-agent
root@ubuntu-server:/home/antonio# ufw allow zabbix-agent
Rule added
Rule added (v6)
root@ubuntu-server:/home/antonio# _
```

Ahora accederemos a la versión web de zabbix para configurarla.

Para ello escribimos en nuestro navegador la dirección: 192.168.56.105/zabbix y nos aparecerá lo siguiente:



- Los requisitos deben estar todos en OK

The screenshot shows the 'Check of pre-requisites' step of the Zabbix setup. The title bar says 'ZABBIX'. The main content area has a red header 'Check of pre-requisites'. Below it is a table comparing current PHP settings against required values. All items are marked as 'OK'. At the bottom right are 'Back' and 'Next step' buttons.

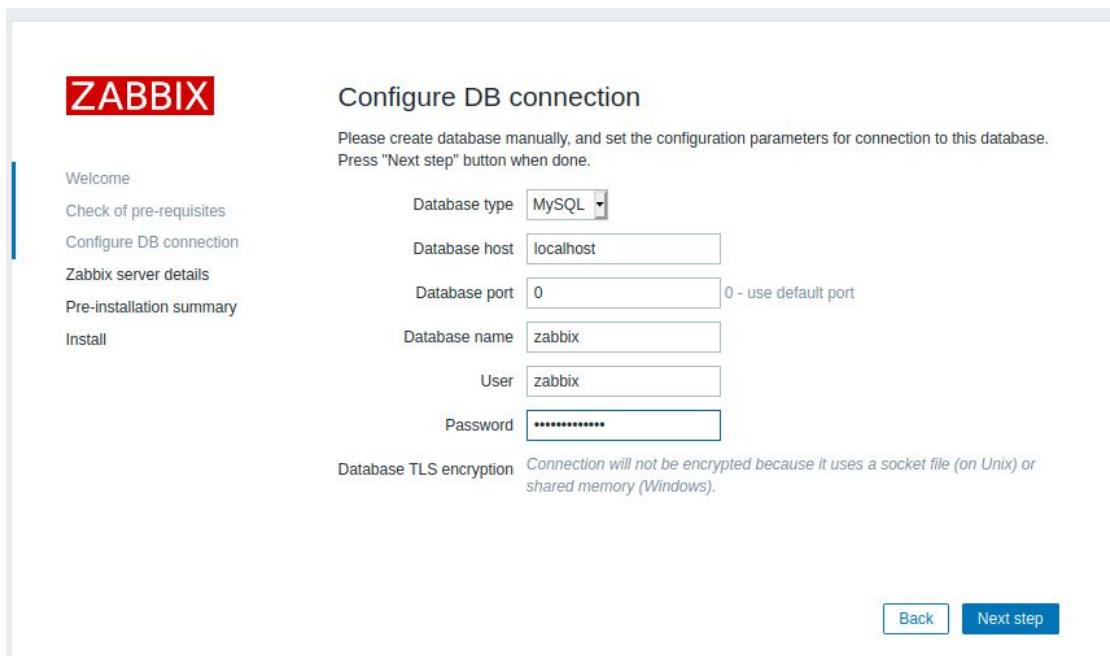
	Current value	Required
PHP version	7.4.3	7.2.0
PHP option "memory_limit"	128M	128M
PHP option "post_max_size"	16M	16M
PHP option "upload_max_filesize"	2M	2M
PHP option "max_execution_time"	300	300
PHP option "max_input_time"	300	300
PHP option "date.timezone"	Europe/Madrid	OK
PHP databases support	MySQL	OK
PHP bcmath	on	OK
PHP mbstring	on	OK

- **Configuramos la base de datos**

Database name = zabbix

user = zabbix

contraseña = practicas,ISE (la que introdujimos en el fichero de zabbix_server.conf.)



The screenshot shows the 'Configure DB connection' step of the Zabbix installation wizard. The title bar says 'ZABBIX'. The main heading is 'Configure DB connection'. A sub-instruction says 'Please create database manually, and set the configuration parameters for connection to this database. Press "Next step" button when done.' On the left, there's a vertical navigation menu with links: Welcome, Check of pre-requisites, Configure DB connection (which is highlighted in blue), Zabbix server details, Pre-installation summary, and Install. The right side contains form fields: 'Database type' is set to 'MySQL'; 'Database host' is 'localhost'; 'Database port' is '0' (with a note '0 - use default port'); 'Database name' is 'zabbix'; 'User' is 'zabbix'; and 'Password' is masked as '*****'. Below these fields, a note states 'Database TLS encryption' with the explanation 'Connection will not be encrypted because it uses a socket file (on Unix) or shared memory (Windows)'. At the bottom right are 'Back' and 'Next step' buttons.

- La siguiente página la dejamos por defecto

ZABBIX

Zabbix server details

Please enter the host name or host IP address and port number of the Zabbix server, as well as the name of the installation (optional).

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

Host

Port

Name

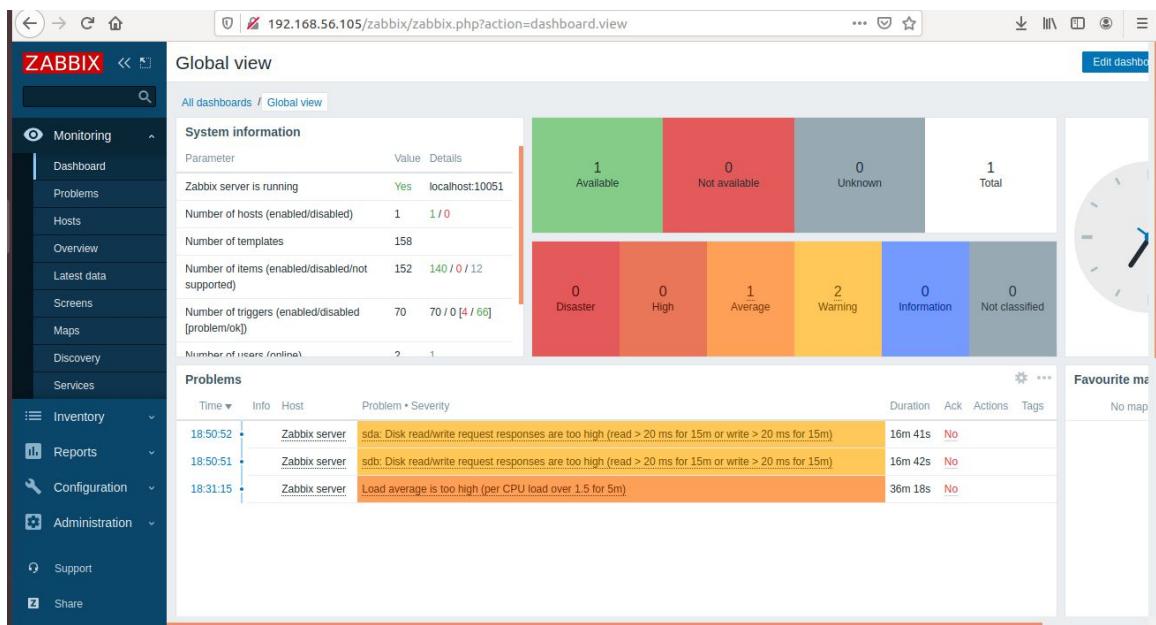
[Back](#) [Next step](#)

**Con esto habremos instalado el front-end de zabbix.
Nos pide identificarnos para acceder a la página principal de zabbix**

The image shows the Zabbix login interface. It features a red header bar with the word "ZABBIX". Below it is a white form area. The first field is labeled "Username" with the value "Admin". The second field is labeled "Password" with the value "*****". There is a checked checkbox labeled "Remember me for 30 days". At the bottom is a large blue "Sign in" button. At the very bottom of the page, there is a small link "Help • Support".

Username = Admin

Password = zabbix



- **Creamos un host de ubuntu para añadirlo como monitorizado:**
Configuration -> hosts -> create host

Antes de dar en "Add", vamos a "Templates" y añadimos el siguiente:

Podemos ver que está creado mirando en monitoring -> hosts

En CentOS:

Instalamos y configuraremos el servidor de Zabbix

- Instalamos el repositorio de zabbix

rpm -Uvh

https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm

```
[root@localhost antonio]# rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm
Recuperando https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm
curl: (60) SSL certificate problem: certificate is not yet valid
More details here: https://curl.haxx.se/docs/sslcerts.html

curl failed to verify the legitimacy of the server and therefore could not
establish a secure connection to it. To learn more about this situation and
how to fix it, please visit the web page mentioned above.
error: omitiendo https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm - transferencia fallida
[root@localhost antonio]#
```

Me dio este error, el cual solventé cambiando la hora de centOS.

```
[root@localhost antonio]# rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release5.0-1.el8.noarch.rpm
Recuperando https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release5.0-1.el8.noarch.rpm
curl: (22) The requested URL returned error: 404
error: omitiendo https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release5.0-1.el8.noarch.rpm - transferencia fallida
[root@localhost antonio]# rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm
Recuperando https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm
advertencia: /var/tmp/rpm-tmp.1000i3: EncabezadoV4 RSA/SHA512 Signature, ID de clave a14fe591: NOKEY
Verificando... #### [100%]
Preparando... #### [100%]
Actualizando / instalando...
 1:zabbix-release-5.0-1.el8 #### [100%]
[root@localhost antonio]#
```

- **Instalar el Zabbix agent**

```
# yum install zabbix-agent
```

```
1:zabbix-release-5.0-1.el8      ##### [100%]
[root@localhost antonio]# yum install zabbix-agent
Zabbix Official Repository - x86_64                               59 kB/s | 78 kB     00:01
Zabbix Official Repository non-supported - x86_64                1.1 kB/s | 1.2 kB     00:01
Dependencias resueltas.
=====
Paquete          Arquitectura    Versión        Repositorio      Tam.
=====
Instalando:
zabbix-agent      x86_64         5.0.6-1.el8   zabbix           464 k

Resumen de la transacción
=====
Instalar 1 Paquete

Tamaño total de la descarga: 464 k
Tamaño instalado: 1.9 M
¿Está de acuerdo [s/N]? s
Descargando paquetes:
zabbix-agent-5.0.6-1.el8.x86_64.rpm          233 kB/s | 464 kB     00:01
Total                                         233 kB/s | 464 kB     00:01
advertencia:/var/cache/dnf/zabbix-b7349cbb4866b08d/packages/zabbix-agent-5.0.6-1.el8.x86_64.rpm: EncabezadoV4 RSA/SHA512 Signature, ID de clave a14fe591: NOKEY
Zabbix Official Repository - x86_64          1.6 MB/s | 1.7 kB     00:00
Importando llave GPG 0xA14FE591:
  ID usuario: "Zabbix LLC <packager@zabbix.com>"
  Huella      : A184 8F53 52D8 22B9 471D 83D8 082A B56B A14F E591
  Desde       : /etc/pki/rpm-gpg/RPM-GPG-KEY-ZABBIX-A14FE591
¿Está de acuerdo [s/N]? _
```

- Ahora modificamos el archivo **zabbix_agentd.conf** que está en **/etc/zabbix/** :

```
Server=192.168.56.105
```

```
ServerActive=192.168.56.105
```

```
Hostname=CentOS
```

```
#
# Mandatory: no
# Default:
#ServerActive=127.0.0.1

ServerActive=192.168.56.105

### Option: Hostname
#           Unique, case sensitive hostname.
#           Required for active checks and must match hostname as configured on the server.
#           Value is acquired from HostnameItem if undefined.
#
# Mandatory: no
# Default:
#Hostname=Zabbix server

Hostname=CentOS →

### Option: HostnameItem
#           Item used for generating Hostname if it is undefined. Ignored if Hostname is defined.
#           Does not support UserParameters or aliases.
#
# Mandatory: no
"/etc/zabbix/zabbix_agentd.conf" 509L, 15133C written
[root@localhost antonio]#
```

- Iniciamos y habilitamos el servicio:
`# systemctl start zabbix-agent`
`# systemctl enable zabbix-agent`
- Por último abrimos el puerto 10050 que es el que utiliza zabbix:
`# firewall-cmd --add-port=10050/tcp`
`# firewall-cmd --add-port=10050/tcp --permanent`
`# firewall-cmd --reload`

```
[root@localhost antonio]# firewall-cmd --add-port=10050/tcp
success
[root@localhost antonio]# firewall-cmd --add-port=10050/tcp --permanent
success
[root@localhost antonio]# firewall-cmd --reload
success
[root@localhost antonio]# _
```

- Ahora vamos a crear el host de CentOS en el front-end de zabbix junto con sus items y triggers.

Para crear el host: configuración -> hosts -> create host

The screenshot shows the Zabbix configuration interface for creating a new host. The left sidebar has 'Monitoring', 'Inventory', 'Reports', and 'Configuration' sections. Under Configuration, 'Hosts' is selected. The main panel has tabs for Host, Templates, IPMI, Tags, Macros, Inventory, and Encryption. The 'Host' tab is active. The host name is 'CentOS', visible name is 'CentOS', and it belongs to the 'Linux servers' group. An interface is defined with the IP address '192.168.56.110' and port '10050'. The 'Enabled' checkbox is checked.

- También añadimos los templates:

The screenshot shows the Zabbix configuration interface for creating a new host, with the 'Templates' tab selected. The left sidebar has 'Monitoring', 'Inventory', 'Reports', and 'Configuration' sections. Under Configuration, 'Hosts' is selected. The main panel has tabs for Host, Templates, IPMI, Tags, Macros, Inventory, and Encryption. The 'Templates' tab is active. A template named 'Template OS Linux by Zabbix agent' is selected from the dropdown menu under 'Link new templates'.

- Para añadir los templates necesarios para el control de SSH y HTTP: (Configuration->Hosts->Centos/UbuntuServer->Tempates).

- Configuramos los ítems correspondientes:

- Quedarán así:

Subfilter affects only filtered data										
	Wizard	Name ▲	Triggers	Key	Interval	History	Trends	Type	Applications	Status
<input type="checkbox"/>	***	HTTP service is running	Triggers 1	net.tcp.service[http]	1m	1w	365d	Simple check	HTTP service	Enabled
Displaying										
	Wizard	Name ▲	Triggers	Key	Interval	History	Trends	Type	Applications	Status
<input type="checkbox"/>	***	SSH service is running	Triggers 1	net.tcp.service[ssh,22022]	1m	1w	365d	Simple check	SSH service	Enabled