

# PRACTICA 3: MEMORIA

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## EJERCICIO 1: ZABBIX

Empiezo a descargarme el repositorio de Zabbix:

```
dmartinez01@ubuntu:~$ sudo apt update
Obj:1 http://es.archive.ubuntu.com/ubuntu focal InRelease
Des:2 http://repo.zabbix.com/zabbix/5.0/ubuntu focal InRelease [4.958 B]
Des:3 http://es.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Des:4 http://repo.zabbix.com/zabbix/5.0/ubuntu focal/main Sources [1.203 B]
Des:5 http://es.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Des:6 http://repo.zabbix.com/zabbix/5.0/ubuntu focal/main amd64 Packages [4.785 B]
Des:7 http://es.archive.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Des:8 http://es.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1.750 kB]
Des:9 http://es.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [326 kB]
Des:10 http://es.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [15,0 kB]
Des:11 http://es.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [947 kB]
Des:12 http://es.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [135 kB]
Des:13 http://es.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [528 B]
Des:14 http://es.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [920 kB]
Des:15 http://es.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [206 kB]
Des:16 http://es.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [20,7 kB]
Des:17 http://es.archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [42,2 kB]
Des:18 http://es.archive.ubuntu.com/ubuntu focal-backports/main Translation-en [10,1 kB]
Des:19 http://es.archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [864 B]
Des:20 http://es.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [22,7 kB]
Des:21 http://es.archive.ubuntu.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [804 B]
Des:22 http://es.archive.ubuntu.com/ubuntu focal-security/main amd64 Packages [1.422 kB]
Des:23 http://es.archive.ubuntu.com/ubuntu focal-security/main Translation-en [246 kB]
Des:24 http://es.archive.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [10,1 kB]
Des:25 http://es.archive.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [886 kB]
Des:26 http://es.archive.ubuntu.com/ubuntu focal-security/restricted Translation-en [126 kB]
Des:27 http://es.archive.ubuntu.com/ubuntu focal-security/restricted amd64 c-n-f Metadata [532 B]
Des:28 http://es.archive.ubuntu.com/ubuntu focal-security/universe amd64 Packages [702 kB]
Des:29 http://es.archive.ubuntu.com/ubuntu focal-security/universe Translation-en [125 kB]
Des:30 http://es.archive.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [14,4 kB]
Descargados 8.278 kB en 18s (471 kB/s)
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
Se pueden actualizar 77 paquetes. Ejecute «apt list --upgradable» para verlos.
dmartinez01@ubuntu:~$ sudo dpkg -i zabbix-release_5.0-1+focal_all.deb_
```

Posteriormente nos descargamos apache2 y abrimos el puerto 80, para dejar acceso a través del firewall:

```

dmartinez01@ubuntu:~$ ufw allow 80
ERROR: You need to be root to run this script
dmartinez01@ubuntu:~$ sudo systemctl status apache2
• apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2022-05-06 18:17:02 UTC; 34s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 41578 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
  Main PID: 41585 (apache2)
    Tasks: 55 (limit: 1066)
   Memory: 5.0M
   CGroup: /system.slice/apache2.service
           └─41585 /usr/sbin/apache2 -k start
             └─41586 /usr/sbin/apache2 -k start
               └─41587 /usr/sbin/apache2 -k start

may 06 18:17:02 ubuntu systemd[1]: Starting The Apache HTTP Server...
may 06 18:17:02 ubuntu apachectl[41581]: AH00558: apache2: Could not reliably determine the server's
may 06 18:17:02 ubuntu systemd[1]: Started The Apache HTTP Server.
dmartinez01@ubuntu:~$ sudo ufw allow 80
Rules updated
Rules updated (v6)
dmartinez01@ubuntu:~$ _

```

También me descargo MySQL:

```

dmartinez01@ubuntu:~$ sudo systemctl status mysql
• mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2022-05-06 18:21:32 UTC; 21s ago
     Process: 43078 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
  Main PID: 43096 (mysqld)
    Status: "Server is operational"
     Tasks: 38 (limit: 1066)
    Memory: 360.6M
   CGroup: /system.slice/mysql.service
           └─43096 /usr/sbin/mysqld

may 06 18:21:30 ubuntu systemd[1]: mysql.service: Succeeded.
may 06 18:21:30 ubuntu systemd[1]: Stopped MySQL Community Server.
may 06 18:21:30 ubuntu systemd[1]: Starting MySQL Community Server...
may 06 18:21:32 ubuntu systemd[1]: Started MySQL Community Server.
lines 1-15/15 (END)

```

Lo mismo con el php:

```

Creating config file /etc/php/7.4/mods-available/sysvsem.ini with new version
Creating config file /etc/php/7.4/mods-available/sysvshm.ini with new version
Creating config file /etc/php/7.4/mods-available/tokenizer.ini with new version
Configurando php7.4-readline (7.4.3-4ubuntu2.10) ...
Creating config file /etc/php/7.4/mods-available/readline.ini with new version
Configurando php7.4-opcache (7.4.3-4ubuntu2.10) ...
Creating config file /etc/php/7.4/mods-available/opcache.ini with new version
Configurando php7.4-json (7.4.3-4ubuntu2.10) ...
Creating config file /etc/php/7.4/mods-available/json.ini with new version
Configurando php7.4-cli (7.4.3-4ubuntu2.10) ...
update-alternatives: utilizando /usr/bin/php7.4 para proveer /usr/bin/php (php) en modo automático
update-alternatives: utilizando /usr/bin/phar7.4 para proveer /usr/bin/phar (phar) en modo automático
update-alternatives: utilizando /usr/bin/phar.phar7.4 para proveer /usr/bin/phar.phar (phar.phar) en
modo automático
Creating config file /etc/php/7.4/cli/php.ini with new version
Configurando libapache2-mod-php7.4 (7.4.3-4ubuntu2.10) ...
Creating config file /etc/php/7.4/apache2/php.ini with new version
Module mpm_event disabled.
Enabling module mpm_prefork.
apache2_switch_mpm Switch to prefork
apache2_invoke: Enable module php7.4
Configurando php7.4 (7.4.3-4ubuntu2.10) ...
Configurando php (2:7.4+75) ...
Procesando disparadores para man-db (2.9.1-1) ...
Procesando disparadores para php7.4-cli (7.4.3-4ubuntu2.10) ...
Procesando disparadores para libapache2-mod-php7.4 (7.4.3-4ubuntu2.10) ...
dmartinez01@ubuntu:~$ sudo systemctl status php
Unit php.service could not be found.
dmartinez01@ubuntu:~$ sudo apt-get install php_

```

Por ultimo descargamos el servidor, el cliente y la interfaz:

```
Configurando php-mysql (2:7.4+75) ...
Configurando libsnmp35:amd64 (5.8+dfsg-2ubuntu2.3) ...
Configurando zabbix-server-mysql (1:5.0.23-1+focal) ...
Configurando php-bcmath (2:7.4+75) ...
Configurando fontconfig-config (2.13.1-2ubuntu3) ...
Configurando php7.4-mbstring (7.4.3-4ubuntu2.10) ...

Creating config file /etc/php/7.4/mods-available/mbstring.ini with new version
Configurando 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.
Configurando php-mbstring (2:7.4+75) ...
Configurando php-ldap (2:7.4+75) ...
Configurando libtiff5:amd64 (4.1.0+git191117-2ubuntu0.20.04.2) ...
Configurando libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
Configurando libgd3:amd64 (2.2.5-5.2ubuntu2.1) ...
Configurando php7.4-gd (7.4.3-4ubuntu2.10) ...

Creating config file /etc/php/7.4/mods-available/gd.ini with new version
Configurando zabbix-frontend-php (1:5.0.23-1+focal) ...
update-alternatives: utilizando /usr/share/fonts/truetype/dejavu/DejaVuSans.ttf para proveer /usr/share/zabbix/assets/fonts/graphfont.ttf (zabbix-frontend-font) en modo automático
Configurando php-gd (2:7.4+75) ...
Configurando zabbix-apache-conf (1:5.0.23-1+focal) ...
Enabling conf zabbix.
To activate the new configuration, you need to run:
  systemctl reload apache2
Procesando disparadores para libc-bin (2.31-0ubuntu9.7) ...
Procesando disparadores para systemd (245.4-4ubuntu3.16) ...
Procesando disparadores para man-db (2.9.1-1) ...
Procesando disparadores para libapache2-mod-php7.4 (7.4.3-4ubuntu2.10) ...
Procesando disparadores para php7.4-cli (7.4.3-4ubuntu2.10) ...
dmartinez01@ubuntu:~$ sudo apt install zabbix-server-mysql zabbix-frontend-php zabbix-apache-conf zabbix-agent
```

Ahora nos creamos una base de datos:

```
mysql> create database zabbix character set utf8 collate utf8_bin;
Query OK, 1 row affected, 2 warnings (0,16 sec)

mysql> create user zabbix@localhost identified by 'duva01';
ERROR 1819 (HY000): Your password does not satisfy the current policy requirements
mysql> create user zabbix@localhost identified by 'ISE';
ERROR 1819 (HY000): Your password does not satisfy the current policy requirements
mysql> create user zabbix@localhost identified by 'GyC2+*KpG';
Query OK, 0 rows affected (0,03 sec)

mysql> grant all privileges on zabbix.* to zabbix@localhost;
Query OK, 0 rows affected (0,02 sec)

mysql> quit;
Bye
dmartinez01@ubuntu:~$ _
```

Importamos el esquema inicial y datos:

```
dmartinez01@ubuntu:~$ sudo zcat /usr/share/doc/zabbix-server-mysql*/create.sql.gz | mysql -uzabbix -p zabbix
```

Ahora voy a configurar la base de datos para Zabbix server:

```

GNU nano 4.8 /etc/zabbix/zabbix_server.conf
### Option: DBSchema
# Schema name. Used for PostgreSQL.
#
# Mandatory: no
# Default:
# DBSchema=

### Option: DBUser
# Database user.
#
# Mandatory: no
# Default:
# DBUser=

DBUser=zabbix

### Option: DBPassword
# Database password.
# Comment this line if no password is used.
#
# Mandatory: no
# Default:
DBPassword=GyC2+*KpG

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

### Option: DBPort
# Database port when not using local socket.

dmartinez01@ubuntu:~$ sudo nano /etc/zabbix/zabbix_server.conf

```

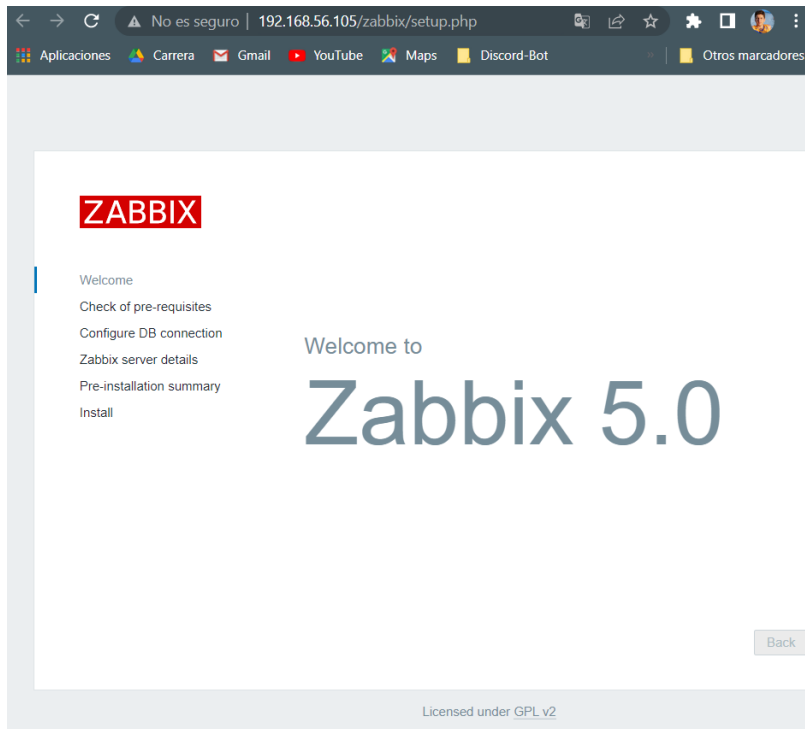
Ahora iniciaremos los servicios Zabbix. También haremos que los reinicios se inicien por defecto:

```

dmartinez01@ubuntu:~$ sudo systemctl restart zabbix-server zabbix-agent apache2
dmartinez01@ubuntu:~$ sudo 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.
dmartinez01@ubuntu:~$ _

```

Y comprobamos entrando en la pagina web:



Configuramos zabbix desde el front-end:

### Check of pre-requisites

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

Back

Next step

## Pre-installation summary

Please check configuration parameters. If all is correct, press "Next step" button, or "Back" button to change configuration parameters.

Database type MySQL

Database server localhost

Database port default

Database name zabbix

Database user zabbix

Database password \*\*\*\*\*

Database TLS encryption false

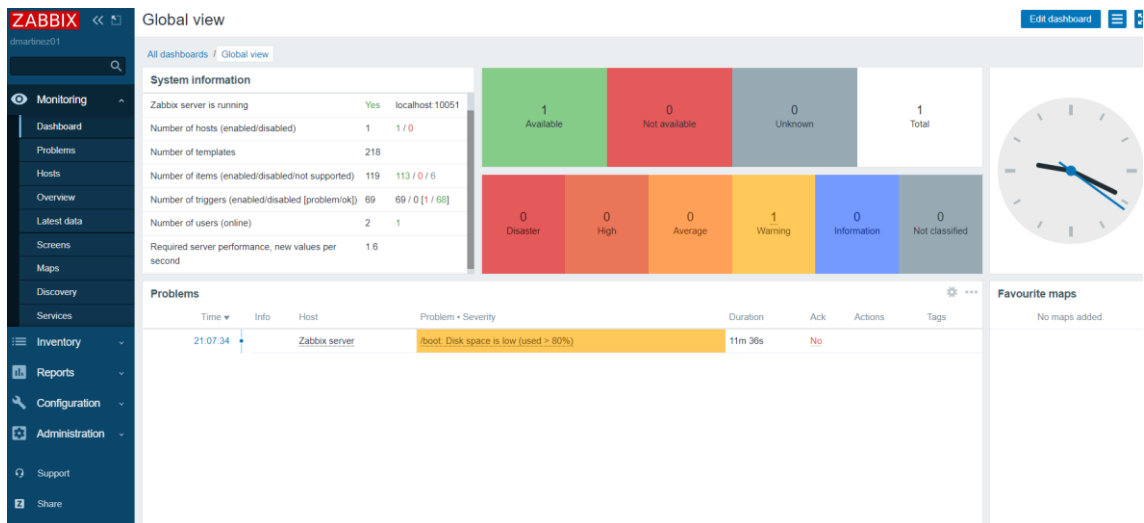
Zabbix server localhost

Zabbix server port 10051

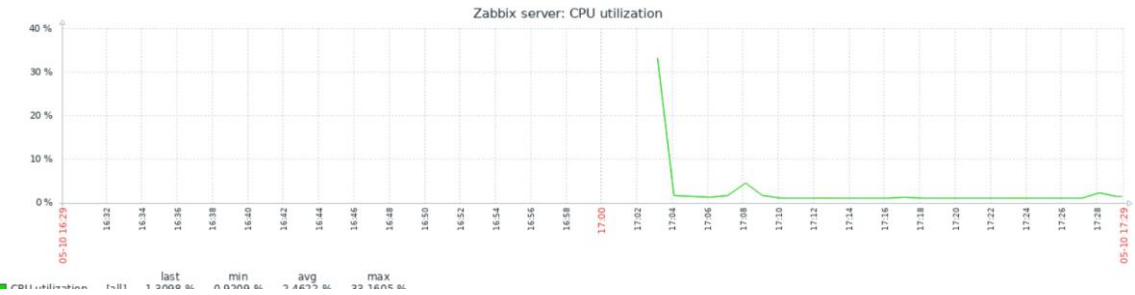
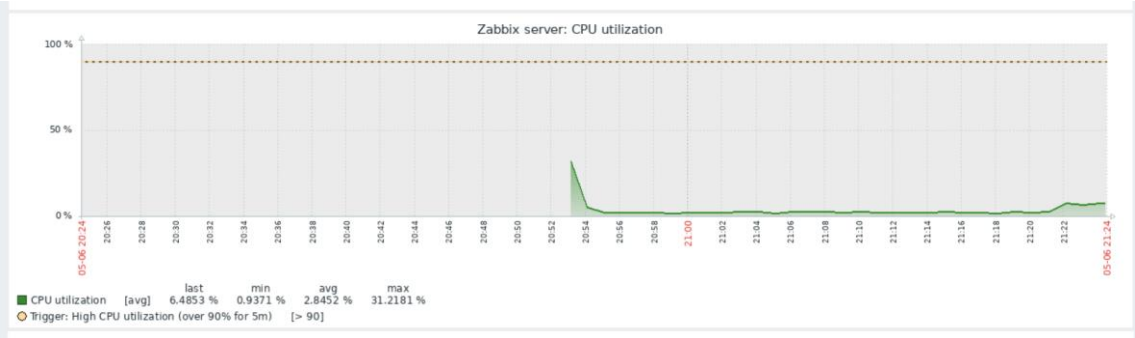
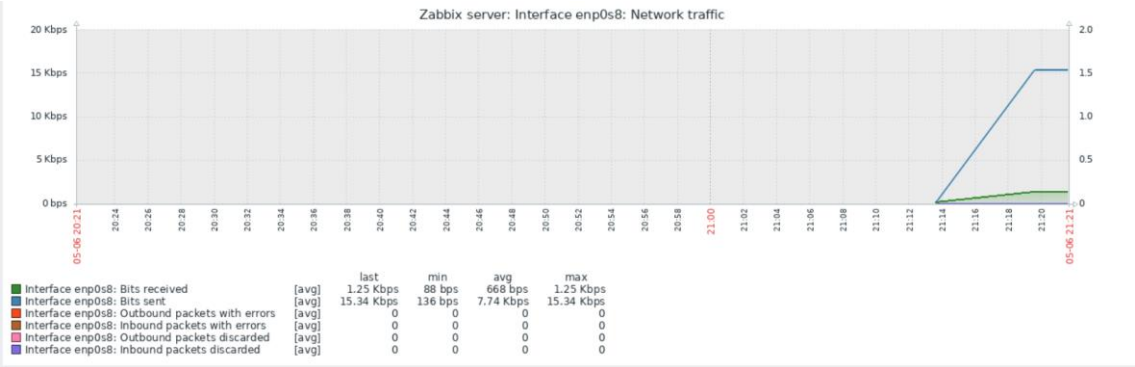
Zabbix server name dmartinez01

Back

Next step



Y finalmente puedes controlar el grafico de la CPU:



## Instalamos Zabbix en CentOS:

Empezamos instalando zabbix en CentOS:

```
[dmartinez01@localhost ~]$ sudo rpm -Uvh https://repo.zabbix.com/zabbix/5.0/rhel/8/x86_64/zabbix-release-5.0-1.el8.noarch.rpm
[sudo] password for dmartinez01:
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.rC79fR: EncabezadoV4 RSA/SHA512 Signature, ID de clave a14fe591: NOKEY
Verifying...
Preparando...
Actualizando / instalando...
 1:zabbix-release-5.0-1.el8
[dmartinez01@localhost ~]$ _
```

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

Tamaño total de la descarga: 492 k
Tamaño instalado: 2.1 M
¿Está de acuerdo [s/N]? s
Descargando paquetes:
zabbix-agent-5.0.23-1.el8.x86_64.rpm
-----
Total
advertencia:/var/cache/dnf/zabbix-b7349cbb4866b08d/packages/zabbix-agent-5.0.23-1.el8.x86_64.rpm: EncabezadoV4 RSA/SHA512 Signature, ID de clave a14fe591: NOKEY
Zabbix Official Repository - x86_64
Importando llave GPG 0xA14FE591:
ID usuario: "Zabbix LLC <packager@zabbix.com>"
Huella : A104 8F53 52D0 22B9 471D 83D0 002A B56B A14F E591
Desde : /etc/pki/rpm-gpg/RPM-GPG-KEY-ZABBIX-A14FE591
¿Está de acuerdo [s/N]? s
La llave ha sido importada exitosamente
Ejecutando verificación de operación
Verificación de operación exitosa.
Ejecutando prueba de operaciones
Prueba de operación exitosa.
Ejecutando operación
  Preparando : 1/1
  Ejecutando scriptlet: zabbix-agent-5.0.23-1.el8.x86_64 1/1
  Instalando : zabbix-agent-5.0.23-1.el8.x86_64 1/1
  Ejecutando scriptlet: zabbix-agent-5.0.23-1.el8.x86_64 1/1
  Verificando : zabbix-agent-5.0.23-1.el8.x86_64 1/1

Instalado:
  zabbix-agent-5.0.23-1.el8.x86_64

¡Listo!
[dmartinez01@localhost ~]$ sudo dnf install zabbix-agent
```

Lo siguiente que haremos será editar el archivo de configuración de zabbix y especificaremos la IP del Zabbix Server:

```
GNU nano 2.9.8 /etc/zabbix/zabbix_agentd.conf

#      0 - DenyKey=system.run[*]
#      1 - AllowKey=system.run[*]
#
# Mandatory: no

### Option: LogRemoteCommands
#      Enable logging of executed shell commands as warnings.
#      0 - disabled
#      1 - enabled
#
# Mandatory: no
# Default:
# LogRemoteCommands=0

##### Passive checks related

### Option: Server
#      List of comma delimited IP addresses, optionally in CIDR notation, or DNS names of Zabbix s$
#      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 $
#      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.
#
[ 520 líneas escritas ]
~G Ver ayuda ~U Guardar ~W Buscar ~K Cortar txt ~J Justificar ~C Posición ~H-U Deshacer
~X Salir ~R Leer fich. ~E Reemplazar ~U Pegar txt ~T Ortografía ~_ Ir a línea ~E Rehacer
```



Luego abrimos el puerto 10050/tcp:

```
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=10050/tcp
success
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=10050/tcp --permanent
success
[dmartinez01@localhost ~]$ _
```

Y por ultimo activamos y reinicio el Zabbix-agent:

```
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=10050/tcp
success
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=10050/tcp --permanent
success
[dmartinez01@localhost ~]$ sudo systemctl enable zabbix-agent
Created symlink /etc/systemd/system/multi-user.target.wants/zabbix-agent.service → /usr/lib/systemd/system/zabbix-agent.service.
[dmartinez01@localhost ~]$ sudo systemctl restart zabbix-agent
[dmartinez01@localhost ~]$ sudo systemctl status zabbix-agent
● zabbix-agent.service - Zabbix Agent
   Loaded: loaded (/usr/lib/systemd/system/zabbix-agent.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2022-05-10 11:25:08 EDT; 37s ago
     Process: 25391 ExecStart=/usr/sbin/zabbix_agentd -c $CONFFILE (code=exited, status=0/SUCCESS)
    Main PID: 25393 (zabbix_agentd)
      Tasks: 6 (limit: 5019)
     Memory: 3.8M
    CGroup: /system.slice/zabbix-agent.service
           └─25393 /usr/sbin/zabbix_agentd -c /etc/zabbix/zabbix_agentd.conf
             └─25394 /usr/sbin/zabbix_agentd: collector [idle 1 sec]
               └─25395 /usr/sbin/zabbix_agentd: listener #1 [waiting for connection]
                 └─25396 /usr/sbin/zabbix_agentd: listener #2 [waiting for connection]
                   └─25397 /usr/sbin/zabbix_agentd: listener #3 [waiting for connection]
                     └─25398 /usr/sbin/zabbix_agentd: active checks #1 [idle 1 sec]

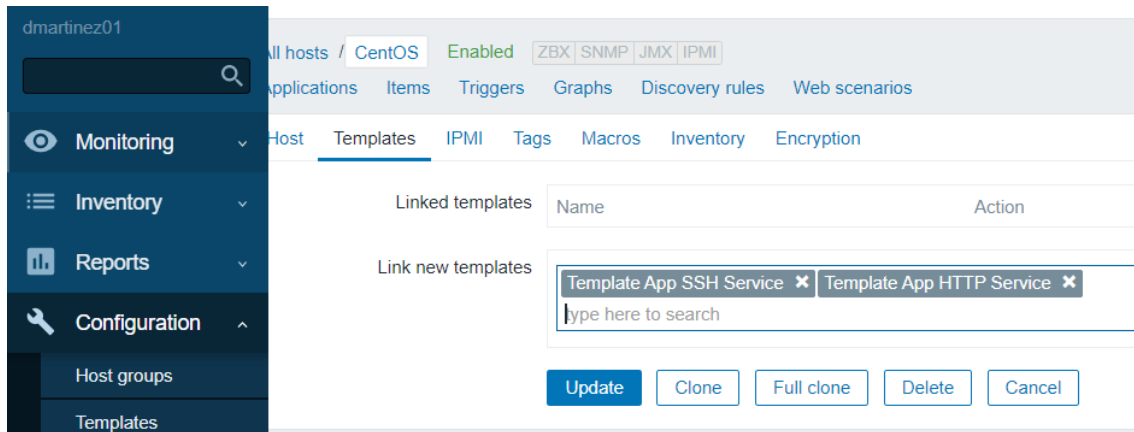
may 10 11:25:08 localhost.localdomain systemd[1]: Starting Zabbix Agent...
may 10 11:25:08 localhost.localdomain systemd[1]: Started Zabbix Agent.
[dmartinez01@localhost ~]$
```

Creamos un nuevo host de CentOS:

The screenshot shows the Zabbix web interface for adding a new host. The left sidebar contains navigation links for Monitoring, Inventory, Reports, and Configuration. The main area is titled 'Host' and contains the following fields:

- Host name:** CentOS
- Visible name:** CentOS
- Groups:** type here to search (Select)
- Interfaces:** A table with columns Type, IP address, DNS name, Connect to, Port, and Default. The first row shows 'Agent' with IP address '192.168.56.110', Port '10050', and 'IP' selected for 'Connect to'.
- Description:** Agente de CentOS
- Monitored by proxy:** (no proxy)
- Enabled:** ☒
- Buttons:** Add, Cancel

Añadimos los templates:



Instalamos http en CentOS:

```
[dmartinez01@localhost ~]$ sudo dnf install httpd
[sudo] password for dmartinez01:
Última comprobación de caducidad de metadatos hecha hace 0:20:25, el mar 10 may 2022 11:16:38 EDT.
El paquete httpd-2.4.37-43.module_el8.5.0+1022+b541f3b1.x86_64 ya está instalado.
Dependencias resueltas.
Nada por hacer.
¡Listo!
[dmartinez01@localhost ~]$ sudo systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/lib/systemd/system/httpd.service.
[dmartinez01@localhost ~]$ sudo systemctl restart httpd
[dmartinez01@localhost ~]$ sudo systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/httpd.service.d
            └─php-fpm.conf
   Active: active (running) since Tue 2022-05-10 11:37:37 EDT; 8s ago
     Docs: man:httpd.service(8)
    Main PID: 25438 (httpd)
      Status: "Started, listening on: port 80"
     Tasks: 213 (limit: 5019)
    Memory: 29.1M
    CGroup: /system.slice/httpd.service
            └─25438 /usr/sbin/httpd -DFOREGROUND
               25444 /usr/sbin/httpd -DFOREGROUND
               25445 /usr/sbin/httpd -DFOREGROUND
               25446 /usr/sbin/httpd -DFOREGROUND
               25447 /usr/sbin/httpd -DFOREGROUND

may 10 11:37:36 localhost.localdomain systemd[1]: Starting The Apache HTTP Server...
may 10 11:37:37 localhost.localdomain httpd[25438]: AH00558: httpd: Could not reliably determine the
may 10 11:37:37 localhost.localdomain systemd[1]: Started The Apache HTTP Server.
may 10 11:37:37 localhost.localdomain httpd[25438]: Server configured, listening on: port 80
lines 1-21/21 (END)
```

Comprobamos el firewall y le damos acceso al puerto 80:

```
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=80/tcp
success
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=80/tcp --permanent
success
[dmartinez01@localhost ~]$ _
```

Nos creamos el host de Ubuntu:

<input type="checkbox"/>	Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags
<input type="checkbox"/>	CentOS	Applications 2	Items 2	Triggers 2	Graphs	Discovery	Web	192.168.56.110:10050		Template App HTTP Service, Template App SSH Service	Enabled	ZBX   SNMP   JMX   IPMI	NONE		
<input type="checkbox"/>	Ubuntu	Applications 2	Items 2	Triggers 2	Graphs	Discovery	Web	192.168.56.105:10050		Template App HTTP Service, Template App SSH Service	Enabled	ZBX   SNMP   JMX   IPMI	NONE		
<input type="checkbox"/>	Zabbix server	Applications 19	Items 137	Triggers 71	Graphs 29	Discovery 3	Web	127.0.0.1:10050		Template App Zabbix Server, Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent)	Enabled	ZBX   SNMP   JMX   IPMI	NONE		

Y ya podemos monitorizar los dos servicios en ambas maquinas:

Host	Name	Last check
CentOS	HTTP service (1 item)	
	HTTP service is running	2022-05-10 17:54:56
CentOS	SSH service (1 item)	
	SSH service is running	2022-05-10 17:54:57
Ubuntu	HTTP service (1 item)	
	HTTP service is running	2022-05-10 17:55:16
Ubuntu	SSH service (1 item)	
	SSH service is running	2022-05-10 17:55:17

Probamos con sshd en CentOS, apagamos el servicio y lo volvemos a iniciar:

```
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=80/tcp
success
[dmartinez01@localhost ~]$ sudo firewall-cmd --add-port=80/tcp --permanent
success
[dmartinez01@localhost ~]$ sudo systemctl stop sshd
[sudo] password for dmartinez01:
[dmartinez01@localhost ~]$ sudo systemctl status sshd
• sshd.service - OpenSSH server daemon
  Loaded: loaded (/usr/lib/systemd/system/ssh.service; enabled; vendor preset: enabled)
  Active: inactive (dead) since Tue 2022-05-10 11:50:31 EDT; 8s ago
  Docs: man:sshd(8)
        man:sshd_config(5)
  Process: 828 ExecStart=/usr/sbin/sshd -D $OPTIONS $CRYPTO_POLICY (code=exited, status=0/SUCCESS)
  Main PID: 828 (code=exited, status=0/SUCCESS)

may 10 11:01:31 localhost.localdomain systemd[1]: Starting OpenSSH server daemon...
may 10 11:01:31 localhost.localdomain sshd[828]: Server listening on 0.0.0.0 port 22022.
may 10 11:01:31 localhost.localdomain systemd[1]: Started OpenSSH server daemon.
may 10 11:01:31 localhost.localdomain sshd[828]: Server listening on :: port 22022.
may 10 11:50:31 localhost.localdomain systemd[1]: Stopping OpenSSH server daemon...
may 10 11:50:31 localhost.localdomain systemd[1]: Stopped OpenSSH server daemon.
[dmartinez01@localhost ~]$
```

Y comprobamos httpd en Ubuntu:



Por lo que ya podemos monitorizar dicho servicios en las distintas maquinas.

## EJERCICIO 2: ANSIBLE

Empezamos instalando ansible en la WSL de Ubuntu:

```
Preparando para desempaquetar .../10-python3-ntlm-auth_1.1.0-1_all.deb ...
Desempaquetando python3-ntlm-auth (1.1.0-1) ...
Seleccionando el paquete python3-requests-kerberos previamente no seleccionado.
Preparando para desempaquetar .../11-python3-requests-kerberos_0.12.0-2_all.deb ...
Desempaquetando python3-requests-kerberos (0.12.0-2) ...
Seleccionando el paquete python3-requests-ntlm previamente no seleccionado.
Preparando para desempaquetar .../12-python3-requests-ntlm_1.1.0-1_all.deb ...
Desempaquetando python3-requests-ntlm (1.1.0-1) ...
Seleccionando el paquete python3-selinux previamente no seleccionado.
Preparando para desempaquetar .../13-python3-selinux_3.0-1build2_amd64.deb ...
Desempaquetando python3-selinux (3.0-1build2) ...
Seleccionando el paquete python3-xmltodict previamente no seleccionado.
Preparando para desempaquetar .../14-python3-xmltodict_0.12.0-1_all.deb ...
Desempaquetando python3-xmltodict (0.12.0-1) ...
Seleccionando el paquete python3-winrm previamente no seleccionado.
Preparando para desempaquetar .../15-python3-winrm_0.3.0-2_all.deb ...
Desempaquetando python3-winrm (0.3.0-2) ...
Configurando python3-lockfile (1:0.12.2-2ubuntu2) ...
Configurando python3-ntlm-auth (1.1.0-1) ...
Configurando python3-kerberos (1.1.14-3.1build1) ...
Configurando python3-xmltodict (0.12.0-1) ...
Configurando python3-jmespath (0.9.4-2ubuntu1) ...
Configurando python3-requests-kerberos (0.12.0-2) ...
Configurando ieee-data (20180805.1) ...
Configurando python3-dnspython (1.16.0-1build1) ...
Configurando python3-selinux (3.0-1build2) ...
Configurando python3-crypto (2.6.1-13ubuntu2) ...
Configurando python3-argcomplete (1.8.1-1.3ubuntu1) ...
Configurando python3-requests-ntlm (1.1.0-1) ...
Configurando python3-libcloud (2.8.0-1) ...
Configurando python3-netaddr (0.7.19-3ubuntu1) ...
Configurando python3-winrm (0.3.0-2) ...
Configurando ansible (2.9.6+dfsg-1) ...
Procesando disparadores para man-db (2.9.1-1) ...
dmartinez01@ubuntu:~$ sudo apt install ansible_
```

Nos creamos el archivo mon RAID.py para poder monitorizar:



ubuntu-server (Instantánea 1) [Corriendo] - Oracle VM VirtualBox

Archivo Máquina Ver Entrada Dispositivos Ayuda

GNU nano 4.8

mon RAID.py

```
import re

f=open('/proc/mdstat')

for line in f:
    b=re.findall('\s*([U]*[ ]+[U]*[ ])',line)
    if(b!=[]):
        print("--Error en Raid--")

print("Ok, fin del script")
```

Luego editamos el archivo de configuración que se encuentra en `/etc/ansible/hosts` y añadimos las direcciones de CentOS y Ubuntu:

```
#green.example.com
#blue.example.com
#192.168.100.1
#192.168.100.10

192.168.56.105
192.168.56.110

# Ex 2: A collection of hosts belonging to the 'webservers' group

#[webservers]
#alpha.example.org
#beta.example.org
#192.168.1.100
#192.168.1.110

# If you have multiple hosts following a pattern you can specify
# them like this:

#www[001:006].example.com

dmartinez01@ubuntu:~$ ansible all -m ping -u dmartinez01
192.168.56.105 | UNREACHABLE! => {
  "changed": false,
  "msg": "Failed to connect to the host via ssh: ssh: connect to host 192.168.56.105 port 22: Connection refused",
  "unreachable": true
}
192.168.56.110 | UNREACHABLE! => {
  "changed": false,
  "msg": "Failed to connect to the host via ssh: ssh: connect to host 192.168.56.110 port 22: No route to host",
  "unreachable": true
}
dmartinez01@ubuntu:~$ sudo nano /etc/ansible/ansible.cfg
```

Luego añadimos el puerto 22022 en el respectivo archivo de configuración:

```
GNU nano 4.8 /etc/ansible/ansible.cfg Modified
# config file for ansible -- https://ansible.com/
# =====

# nearly all parameters can be overridden in ansible-playbook
# or with command line flags. ansible will read ANSIBLE_CONFIG,
# ansible.cfg in the current working directory, .ansible.cfg in
# the home directory or /etc/ansible/ansible.cfg, whichever it
# finds first

[defaults]

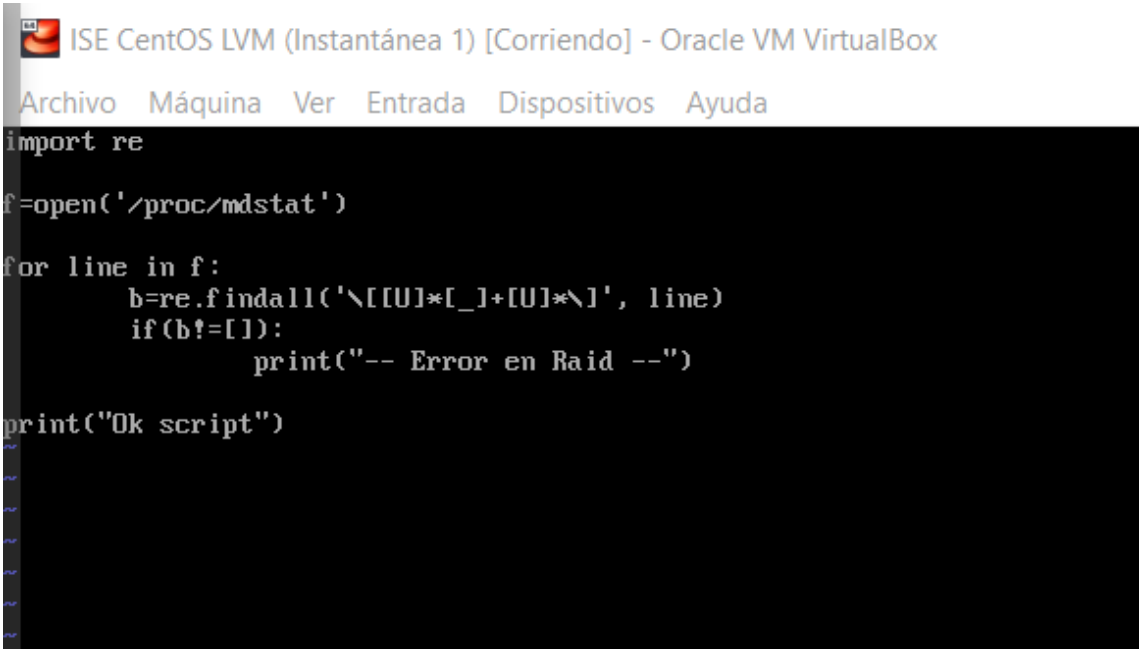
# some basic default values...

#inventory      = /etc/ansible/hosts
#library        = /usr/share/my_modules/
#module_utils   = /usr/share/my_module_utils/
#remote_tmp     = ~/.ansible/tmp
#local_tmp      = ~/.ansible/tmp
#plugin_filters_cfg = /etc/ansible/plugin_filters.yml
#forks          = 5
#poll_interval  = 15
#sudo_user      = root
#ask_sudo_pass  = True
#ask_pass       = True
#transport      = smart
remote_port     = 22022_
#module_lang    = C
#module_set_locale = False

# plays will gather facts by default, which contain information about
# the remote system.
#
# smart - gather by default, but don't regather if already gathered

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text   ^J Justify   ^C Cur Pos   M-U Undo
^X Exit      ^R Read File  ^N Replace   ^U Paste Text ^T To Spell  ^_ Go To Line M-E Redo
```

Hacemos lo mismo desde CentOS, es decir, creamos el archivo `mon_raid.py` y editamos el archivo y ponemos el código:



The screenshot shows a window titled "ISE CentOS LVM (Instantánea 1) [Corriendo] - Oracle VM VirtualBox". The window contains a terminal with a menu bar (Archivo, Máquina, Ver, Entrada, Dispositivos, Ayuda) and a Python script. The script imports the `re` module, opens `/proc/mdstat`, and iterates through its lines. It uses a regular expression `'\[[U]*[_]+[U]*\'` to find RAID status. If a match is found, it prints `-- Error en Raid --`. If no match is found, it prints `Ok script`.

```
import re

f=open('/proc/mdstat')

for line in f:
    b=re.findall('\[[U]*[_]+[U]*\ ', line)
    if(b!=[]):
        print("-- Error en Raid --")

print("Ok script")
```

Por ultimo ejecutamos el script en Ubuntu y vemos que funciona:



The screenshot shows a terminal window with the following output from an Ansible command:

```
dmartinez01@ubuntu:~$ ansible all -a "python3 /home/dmartinez01/mon_raid.py" -u dmartinez01
192.168.56.105 | CHANGED | rc=0 >>
Ok, fin del script
192.168.56.110 | CHANGED | rc=0 >>
Ok script
dmartinez01@ubuntu:~$ _
```