

Practica 5 GAX

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Ejercicio 1:

Descargamos desde la repo oficial de nagios, nagios4 y procederemos a su descompresión e instalación. También descargamos el plugin de nrpe para monitorear la maquina host y las maquinas MV-B y C. En el archivo nrpe.cfg establecemos las medidas de aviso como por ejemplo el check hda1 que es el disco.

```
*** Configuration summary for nagios 4.4.5 2019-08-20 ***:

General Options:
-----
Nagios executable: nagios
Nagios user/group: nagios,nagios
Command user/group: nagios,nagios
Event Broker: yes
Install ${prefix}: /usr/local/nagios
Install ${includedir}: /usr/local/nagios/include/nagios
Lock file: /run/nagios.lock
Check result directory: /usr/local/nagios/var/spool/checkresults
Init directory: /lib/systemd/system
Apache conf.d directory: /etc/apache2/sites-enabled
Mail program: /bin/mail
Host OS: linux-gnu
IOBroker Method: epoll

Web Interface Options:
-----
HTML URL: http://localhost/nagios/
CGI URL: http://localhost/nagios/cgi-bin/
Traceroute (used by WAP): /usr/sbin/traceroute

Review the options above for accuracy. If they look okay,
type 'make all' to compile the main program and CGIs.

root@debian:/usr/src/nagioscore-nagios-4.4.5#
```

```
GNU nano 5.4 /usr/local/nagios/etc/nrpe.cfg *
#
# Note: Any plugins that are used in the command lines must reside
# on the machine that this daemon is running on! The examples below
# assume that you have plugins installed in a /usr/local/nagios/libexec
# directory. Also note that you will have to modify the definitions below
# to match the argument format the plugins expect. Remember, these are
# examples only!

# The following examples use hardcoded command arguments...
# This is by far the most secure method of using NRPE

command[check_users]=usr/local/nagios/libexec/check_users -w 5 -c 10
command[check_load]=usr/local/nagios/libexec/check_load -r -w .15,.10,.05 -c .30,.25,.20
command[check_hda1]=usr/local/nagios/libexec/check_disk -w 20% -c 10% -p /dev/hda1
command[check_zombie_procs]=usr/local/nagios/libexec/check_procs -w 5 -c 10 -s Z
command[check_total_procs]=usr/local/nagios/libexec/check_procs -w 150 -c 200

# The following examples allow user-supplied arguments and can
# only be used if the NRPE daemon was compiled with support for
# command arguments *AND* the dont_blame_nrpe directive in this
# config file is set to '1'. This poses a potential security risk, so
# make sure you read the SECURITY file before doing this.

### MISC SYSTEM METRICS ###
#command[check_users]=usr/local/nagios/libexec/check_users $ARG1$
#command[check_load]=usr/local/nagios/libexec/check_load $ARG1$
#command[check_disk]=usr/local/nagios/libexec/check_disk $ARG1$
#command[check_swap]=usr/local/nagios/libexec/check_swap $ARG1$
#command[check_cpu_stats]=usr/local/nagios/libexec/check_cpu_stats.sh $ARG1$
```

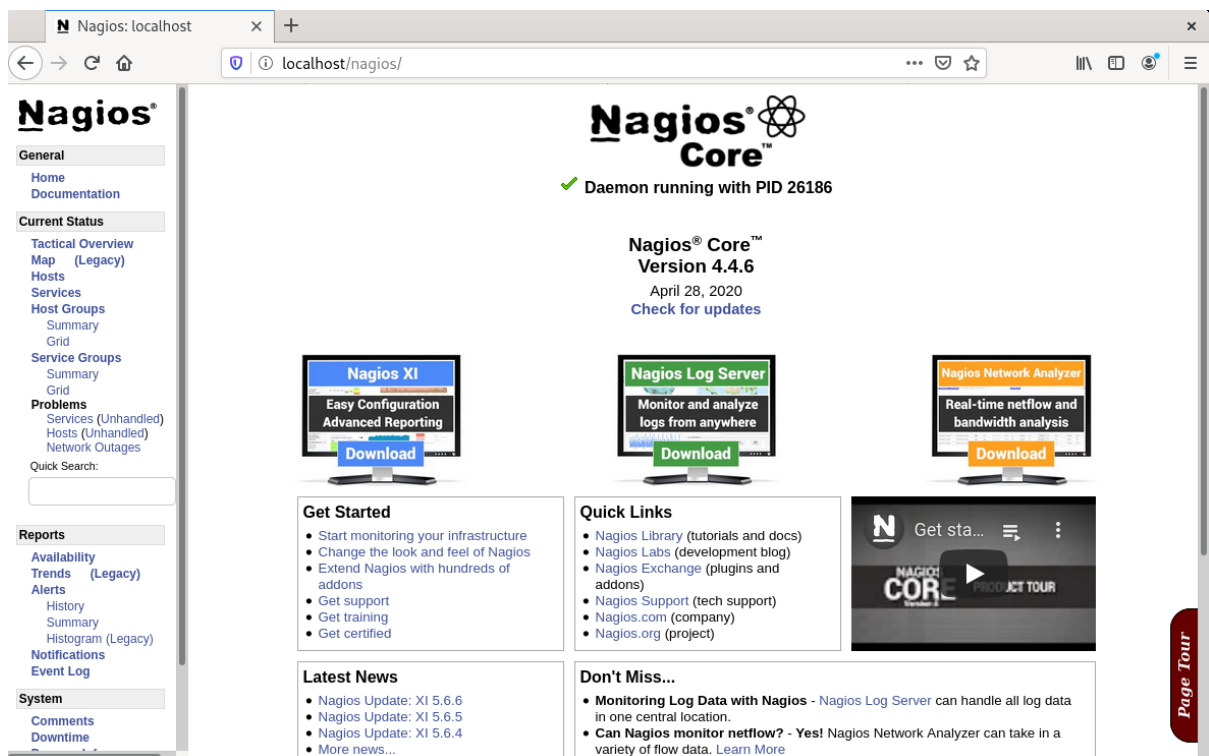
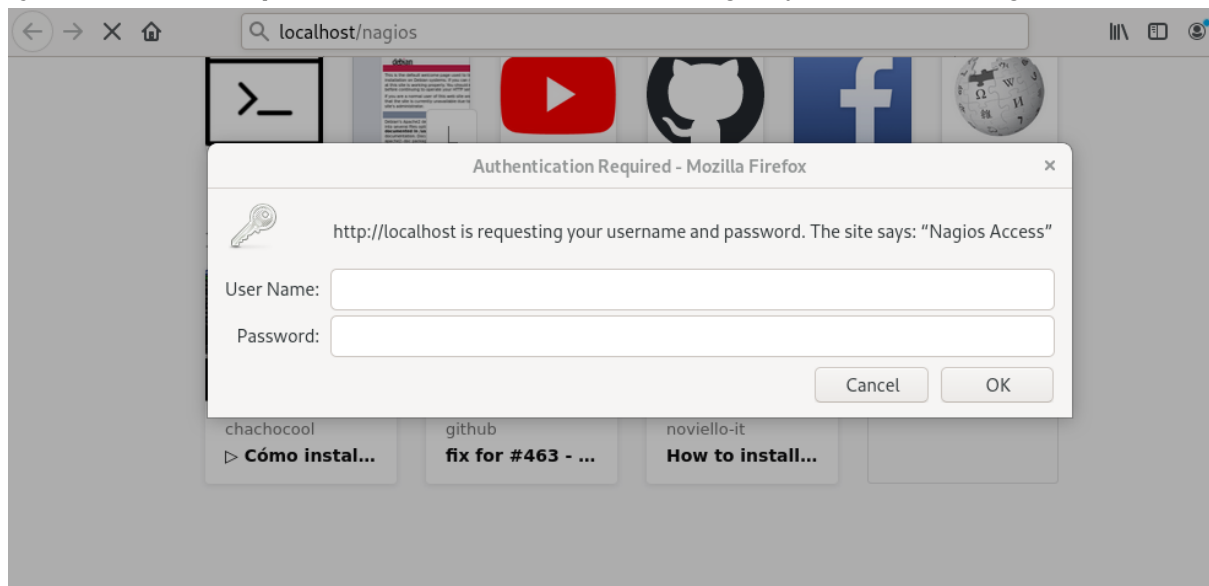
Crearemos el grupo de monitoreo con:

\$ sudo make install-groups-users install install-webconf install-config install-init install-daemoninit install-commandmode y crearemos el usuario nagiosadmin

y la contraseña con:

htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

Una vez configurado ejecutaremos **sudo systemctl start nagios** , **sudo a2enmod cgi** y **systemctl restart apache2**. Accedemos a localhost/nagios y nos pedirá el login:



Instalaremos nrpe desde la repo y instalaremos en las máquinas a monitorizar:

```
*** Configuration summary for nrpe 4.0.3 2020-04-28 ***:

General Options:
-----
NRPE port:      5666
NRPE user:      nagios
NRPE group:     nagios
Nagios user:    nagios
Nagios group:   nagios

Review the options above for accuracy.  If they look okay,
type 'make all' to compile the NRPE daemon and client
or type 'make' to get a list of make options.
```

Comprobamos el status:

```
root@debian:/usr/local/nagios# nano /usr/local/nagios/etc/nrpe.cfg
root@debian:/usr/local/nagios# systemctl restart nrpe
root@debian:/usr/local/nagios# systemctl status nrpe
● nrpe.service - Nagios Remote Plugin Executor
   Loaded: loaded (/lib/systemd/system/nrpe.service; disabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-12-14 03:03:43 CET; 2s ago
     Docs: http://www.nagios.org/documentation
  Main PID: 28530 (nrpe)
    Tasks: 1 (limit: 1117)
   Memory: 676.0K
      CPU: 10ms
   CGroup: /system.slice/nrpe.service
           └─28530 /usr/local/nagios/bin/nrpe -c /usr/local/nagios/etc/nrpe.cfg -f

Dec 14 03:03:43 debian systemd[1]: Started Nagios Remote Plugin Executor.
Dec 14 03:03:43 debian nrpe[28530]: Starting up daemon
Dec 14 03:03:43 debian nrpe[28530]: Server listening on 0.0.0.0 port 5666.
Dec 14 03:03:43 debian nrpe[28530]: Server listening on :: port 5666.
Dec 14 03:03:43 debian nrpe[28530]: Listening for connections on port 5666
Dec 14 03:03:43 debian nrpe[28530]: Allowing connections from: 127.0.0.1,::1, localhost
root@debian:/usr/local/nagios# systemctl enable nrpe
Created symlink /etc/systemd/system/multi-user.target.wants/nrpe.service → /lib/systemd/system/nrpe.service.
root@debian:/usr/local/nagios#
```

Una vez verificados los servicios procedemos a configurar en la carpeta servers las maquinas a monitorear, en este caso solo pongo la MV-A y B:

```
root@master:/usr/local/nagios/etc/servers# ls
172.16.1.1.cfg  172.16.1.2.cfg
```

En el archivo de monitoring establecemos, por ejemplo para la máquina B su hostname y su dirección. Además si queremos monitorear un servicio adicional podemos añadirlo con la directiva `define_service` y apuntándole los diferentes parámetros:

```

define host {
    use                linux-server
    host_name          172.16.1.2
    alias              Debian 11 Bullseye (remota)
    address            172.16.1.1
    max_check_attempts 5
    check_period       24x7
    notification_interval 30
    notification_period 24x7
}

define service {
    use                generic-service
    host_name          172.16.1.2
    service_description Carga de CPU
    check_command       ccc_check_nrpe!check_load
}

```

Vemos las máquinas MV-A y MV-B en la pestaña Hosts:

The screenshot shows the Nagios web interface at 172.16.1.1/nagios/. The interface includes a sidebar with navigation links like General, Current Status, Tactical Overview, Map (Legacy), Hosts, Services, Host Groups, Service Groups, Problems, and Services (Unhandled). The main content area displays 'Current Network Status' and 'Host Status Totals'.

Host Status Totals:

Up	Down	Unreachable	Pending
3	0	0	0

Service Status Totals:

Ok	Warning	Unknown	Critical	Pending
7	0	0	3	2

Host Status Details For All Host Groups:

Host	Status	Last Check	Duration	Status Information
172.16.1.1	UP	12-16-2021 19:26:22	0d 0h 23m 19s	PING OK - Packet loss = 0%, RTA = 0.03 ms
172.16.1.2	UP	12-16-2021 19:26:44	0d 0h 0m 33s+	PING OK - Packet loss = 0%, RTA = 0.05 ms
localhost	UP	12-16-2021 19:24:32	0d 5h 53m 23s	PING OK - Packet loss = 0%, RTA = 0.04 ms

Y los diferentes servicios que monitores, en especial el SSH y el PING:

Nagios®

General

[Home](#)
[Documentation](#)

Current Status

[Tactical Overview](#)
[Map \(Legacy\)](#)
[Hosts](#)
[Services](#)
[Host Groups](#)
 [Summary](#)
 [Grid](#)
[Service Groups](#)
 [Summary](#)
 [Grid](#)

Problems
 [Services \(Unhandled\)](#)
 [Hosts \(Unhandled\)](#)
 [Network Outages](#)

Quick Search:

Reports

[Availability](#)
[Trends \(Legacy\)](#)
[Alerts](#)
 [History](#)
 [Summary](#)
 [Histogram \(Legacy\)](#)
[Notifications](#)
[Event Log](#)

System

[Comments](#)
[Downtime](#)
[Process Info](#)
[Performance Info](#)
[Scheduling Queue](#)
[Configuration](#)

Current Network Status

Last Updated: Thu Dec 16 00:48:42 CET 2021
Updated every 90 seconds
Nagios® Core™ 4.4.6 - www.nagios.org
Logged in as [nagiosadmin](#)

[View History For all hosts](#)
[View Notifications For All Hosts](#)
[View Host Status Detail For All Hosts](#)

Host Status Totals

Up	Down	Unreachable	Pending
1	0	0	0
All Problems		All Types	
0		1	

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
8	0	0	0	0
All Problems		All Types		
0		8		

Service Status Details For All Hosts

Limit Results: ▾

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	Current Load	OK	12-16-2021 00:44:35	0d 0h 14m 7s	1/4	OK - load average: 0.25, 0.17, 0.11
	Current Users	OK	12-16-2021 00:45:13	0d 0h 13m 29s	1/4	USERS OK - 1 users currently logged in
	HTTP	OK	12-16-2021 00:45:50	0d 0h 12m 52s	1/4	HTTP OK: HTTP/1.1 200 OK - 10973 bytes in 3.0 response time
	PING	OK	12-16-2021 00:46:28	0d 0h 12m 14s	1/4	PING OK - Packet loss = 0%, RTA = 0.05 ms
	Root Partition	OK	12-16-2021 00:47:05	0d 0h 11m 37s	1/4	DISK OK - free space: / 2161 MiB (32.60% inode=)
	SSH	OK	12-16-2021 00:47:43	0d 0h 10m 59s	1/4	SSH OK - OpenSSH_8.4p1 Debian-5 (protocol 2.0)
	Swap Usage	OK	12-16-2021 00:48:20	0d 0h 10m 22s	1/4	SWAP OK - 53% free (512 MB out of 974 MB)
	Total Processes	OK	12-16-2021 00:43:58	0d 0h 9m 44s	1/4	PROCS OK: 54 processes with STATE = RSZDT

Results 1 - 8 of 8 Matching Services

Ejercicio 2:

Igual que en el ejercicio anterior ahora vamos a instalar ganglia sobre la máquina A, para realizar monitoring sobre los nodos B y C. Primero de todo es necesario instalar sobre la máquina los paquetes de ganglia.

```
root@master:/etc/nagios4# apt install ganglia-monitor gmetad ganglia-webfrontend
```

Una vez instalados los paquetes vamos a modificar la configuración para indicar en qué puerto queremos que esté el servicio de ganglia en el fichero `gmetad.conf` y modificamos `udp sender` y el `receiver` para indicar que debe ir al host en fichero `gmond.conf`.

```
# default: There is no default value
data_source "mycluster" 50 localhost 172.16.1.1:8649
# data_source "my_box" localhost my_machine.edu:8655

cluster {
    name = "mycluster"
    owner = "unspecified"
    latlong = "unspecified"
    url = "unspecified"
}

/* The host section describes attributes of the host, like the location */
host {
    location = "unspecified"
}

/* Feel free to specify as many udp_send_channels as you like. Gmond
   used to only support having a single channel */
udp_send_channel {
    /*mcast_join = 239.2.11.71
    host= 172.16.1.1
    port = 8649
    ttl = 1
}

/* You can specify as many udp_rcv_channels as you like as well. */
udp_rcv_channel {
    /*mcast_join = 239.2.11.71
    port = 8649
    /*bind = 239.2.11.71
}
```

Finalmente deberemos copiar la configuración de apache que nos da ganglia en `sites-enable` y resetear apache.

```
root@master:/etc/nagios4# vi /etc/ganglia/gmond.conf
root@master:/etc/nagios4# cp /etc/ganglia-webfrontend/apache.conf /etc/apache2/sites-enabled/ganglia.conf
root@master:/etc/nagios4#
```

Una vez hecho esto ya tendremos configurado el servidor de ganglia. Ahora vamos a configurar los nodos para que aporten información a ganglia del nodo A. Instalamos `ganglia-monitor` en los nodos B y C.

```
/* Feel free to specify as many
   used to only support having a
udp_send_channel {
/* mcast_join = 239.2.11.71*/
host= 172.16.1.1
port = 8649
ttl = 1
}
```

Una vez configurados los 3 nodos si accedemos a la pagina 172.16.1.1/ganglia desde el nodo A, podremos ver que nos detecta que hay 3 host levantados. Esto quiere decir que los nodos B y C están enviando información al nodo A por lo que estamos monitorizando los nodos

The screenshot shows the Ganglia web interface in a browser window. The address bar shows the URL `172.16.1.1/ganglia/?m=load_one&r=hour&s=by name&hc=4&mc=2`. The interface includes a navigation menu on the left with links like Main, Search, Views, Aggregate Graphs, Compare Hosts, Events, Reports, Automatic Rotation, Live Dashboard, Cubism, and Mobile. The main content area displays the 'unspecified Grid Report at Thu, 16 Dec 2021 22:59:18 +0100'. It features filters for 'Last' (hour, 2hr, 4hr, day, week, month, year, job) and 'Sorted' (ascending, descending, by name, by hosts up, by hosts down). Below the filters, it shows 'unspecified Grid (1 sources)' with statistics: CPUs Total: 2, Hosts up: 3, Hosts down: 0. It also displays 'Current Load Avg (15, 5, 1m): 55%, 60%, 54%' and 'Avg Utilization (last hour): 143%'. There are links for 'unspecified Grid (1 sources) LOAD', 'unspecified Grid (1 sources) MEM', 'unspecified Grid (1 sources) CPU', and 'unspecified Grid (1 sources) NETWORK'. At the bottom, it shows 'mycluster (physical view)' with similar statistics: CPUs Total: 2, Hosts up: 3, Hosts down: 0.

Para poder personalizar todavía más ganglia, deberíamos dar la capacidad al usuario de apache www-data de poder modificar las vistas de ganglia. Para ello seguiríamos los siguientes pasos

Desactivamos la autenticación para poder modificar las views.

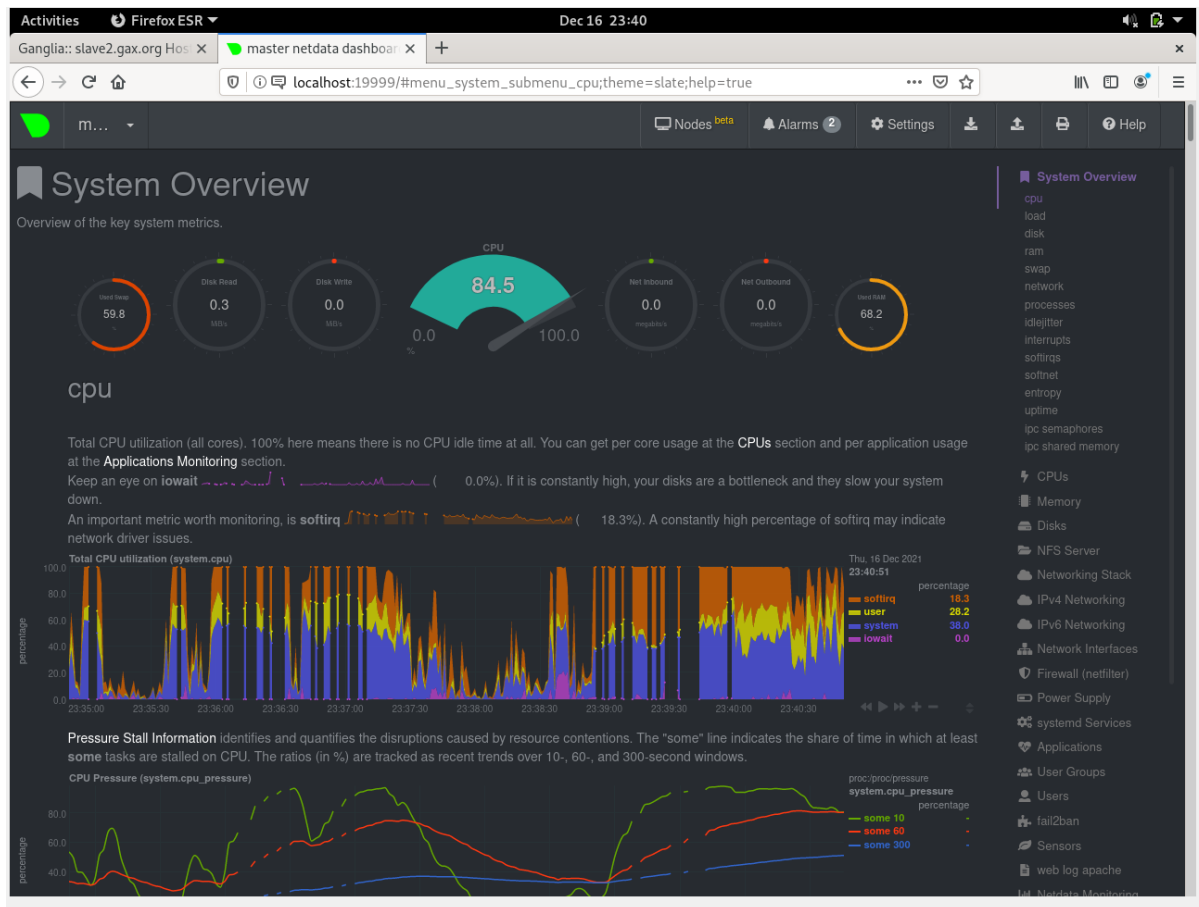
```
# 'disabled': Guest users may perform any ac
$conf['auth_system'] = 'disabled';
#
```

Damos permisos para poder modificar las vistas al usuario del apache.

```
root@master:/var/lib/ganglia-web/conf# chgrp www-data view_default.json
root@master:/var/lib/ganglia-web/conf# chmod 775 view_default.json
root@master:/var/lib/ganglia-web/conf#
```

Tras realizar dichas configuración deberíamos poder crear vistas y gráficos en ganglia.

Con Netdata instalamos el repositorio y accediendo a la pagina localhost:19999 ya podemos ver la estadísticas, si nos creamos una cuenta de netdata cloud podemos agregar los diferentes nodos a la cuenta para poder monitorizar los nodos desde internet de una forma facil y sencilla.



Desde nuestro punto de vista ganglia es muy complicada de configurar y hay poca documentación al respecto, sí que es cierto que nos ofrece más potencial. Pero desde el punto de vista práctico netdata es muy sencillo de instalar y configurar

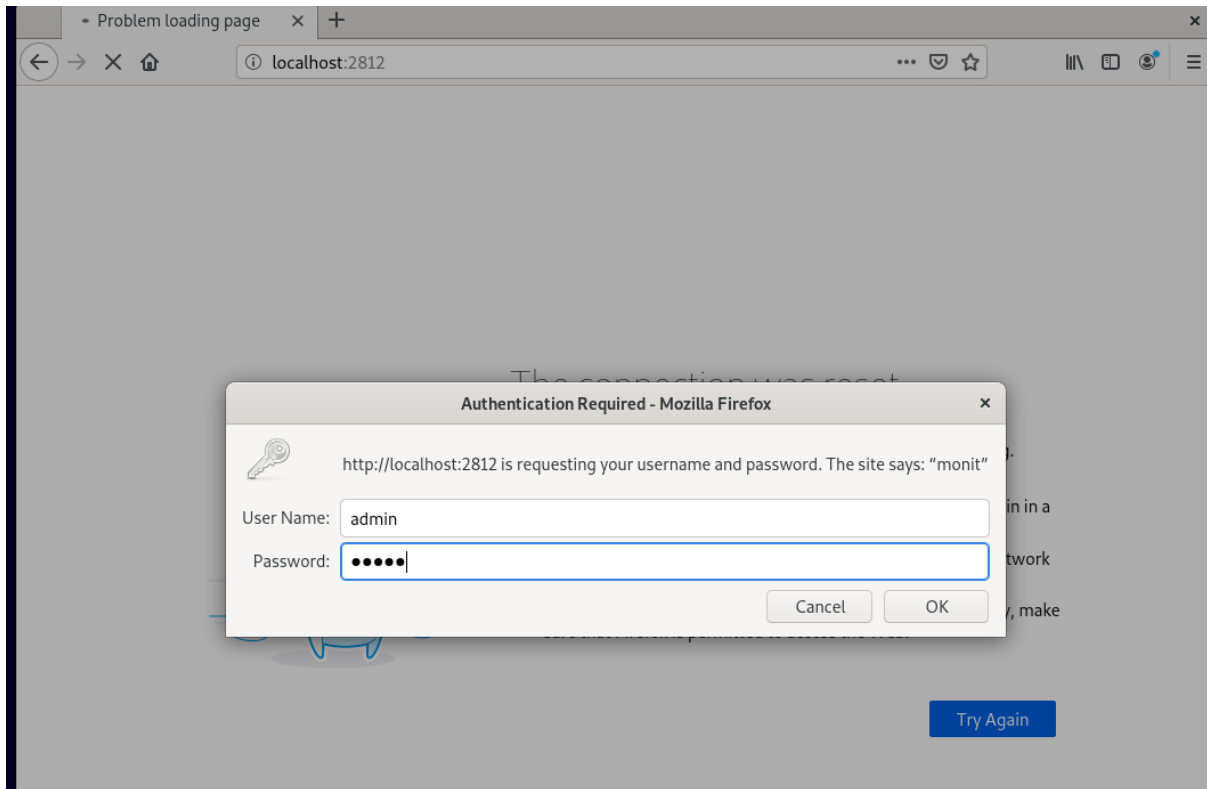
Exercici 3

b)

```
(Reading database ... 120256 files and directories currently installed.)
Preparing to unpack .../monit_1%3a5.27.2-1_amd64.deb ...
Unpacking monit (1:5.27.2-1) ...
Setting up monit (1:5.27.2-1) ...
Processing triggers for man-db (2.9.4-2) ...
root@master:/usr/local/monit# systemctl start monit
root@master:/usr/local/monit# systemctl enable monit
monit.service is not a native service, redirecting to systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable monit
root@master:/usr/local/monit# systemctl status monit
● monit.service - LSB: service and resource monitoring daemon
   Loaded: loaded (/etc/init.d/monit; generated)
   Active: active (running) since Thu 2021-12-16 23:15:47 CET; 54s ago
     Docs: man:systemd-sysv-generator(8)
    Tasks: 1 (limit: 1117)
   Memory: 1.5M
      CPU: 15ms
    CGroup: /system.slice/monit.service
            └─8219 /usr/bin/monit -c /etc/monit/monitrc

Dec 16 23:15:47 master systemd[1]: Starting LSB: service and resource monitoring>
Dec 16 23:15:47 master monit[8213]: Starting daemon monitor: monit.
Dec 16 23:15:47 master systemd[1]: Started LSB: service and resource monitoring>
lines 1-13/13 (END)
```

```
GNU nano 5.4 /etc/monit/monitrc *
## This filter is recommended to avoid getting alerts for trivial cases.
#
# set alert your-name@your.domain not on { instance, action }
#
## Monit has an embedded HTTP interface which can be used to view status of
## services monitored and manage services from a web interface. The HTTP
## interface is also required if you want to issue Monit commands from the
## command line, such as 'monit status' or 'monit restart service' The reason
## for this is that the Monit client uses the HTTP interface to send these
## commands to a running Monit daemon. See the Monit Wiki if you want to
## enable SSL for the HTTP interface.
#
set httpd port 2812 and
#   use address localhost # only accept connection from localhost (drop if y>
#   allow localhost      # allow localhost to connect to the server and
#   allow admin:monit    # require user 'admin' with password 'monit'
#   #with ssl {          # enable SSL/TLS and set path to server certificate
#   #   pemfile: /etc/ssl/certs/monit.pem
#   #}
```



System status

Parameter	Value
Name	master
Status	OK
Monitoring status	Monitored
Monitoring mode	active
On reboot	start
Load average	[0.21] [0.11] [0.07]
Cpu	0.0%usr 0.0%sys 0.0%nice 0.0%iowait 0.0%hardirq 0.0%softirq 0.0%steal 0.0%guest 0.0%guestnice
Memory usage	788.2 MB [80.7%]
Swap usage	453.6 MB [46.5%]
Uptime	4h 57m
Boot time	Thu, 16 Dec 2021 18:27:36
File descriptors	7936 [0.0% of 9223372036854775807 limit]
Data collected	Thu, 16 Dec 2021 23:23:03

Disable monitoring

Segons el tutorial d'aquesta pagina

<https://www.solvetic.com/tutoriales/article/4277-como-instalar-configurar-monit-debian-9/>

s'ha d'executar **`ln -s /etc/monit/conf-available/apache2 /etc/monit/conf-enabled/`** mer monitoritzar apache2 pero per alguna raó el servei de monit no s'a executat correctament. Si mirem el journalctl -xe ens diu : **`Failed to start LSB: service and resource monitoring daemon.`** Creo que el link simbólico que se hace, esta mal porque el directorio que indica no es correcto en mi maquina.

Aun así para hacer una pequeña comparación se puede decir que Ganglia es el servicio que más nos ha costado implementar, netdata es el que mejor se ve visualmente y nagios es complicado ya que hay que instalar y configurar en cada nodo pero es el que más información puede darnos, porque además del monitoring que trae, se le pueden añadir servicios customizados.