

1. Install Zabbix Server 5 on VM that includes:
 - Zabbix Server
 - Database
 - Apache
 - PHP
 - Zabbix Server-Modules for Apache & Database
 - Zabbix Frontend

Installing required dependencies:

```
sudo apt install php php-mbstring php-gd php-xml php-bcmath php-ldap php-mysql  
libapache2-mod-php
```

I already had an apache2 server running at port 8088 and mysql service is also running.

(It can be manually installed as:

```
sudo apt-get install apache2
```

```
Sudo apt install mysql-server )
```

Here is the status of my apache and mysql servers.

```
root@batman:~# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-30 12:33:05 +0545; 13min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 1088 (apache2)
    Tasks: 6 (limit: 9110)
  Memory: 13.4M

root@batman:~# systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/lib/systemd/system/mysql.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-30 12:33:07 +0545; 13min ago
     Main PID: 1014 (mysqld)
    Status: "Server is operational"
    Tasks: 38 (limit: 9110)
```

So zabbix repository is configured and downloaded using following commands:

```
wget
```

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

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

```
sudo apt update
```

```
sudo apt install zabbix-server-mysql zabbix-frontend-php zabbix-agent  
zabbix-apache-conf
```

At first, we have to configure mysql password using command:

```
sudo mysql_secure_installation
```

```
root@batman:~# sudo mysql_secure_installation

Securing the MySQL server deployment.

Connecting to MySQL using a blank password.
The 'validate_password' component is installed on the server.
The subsequent steps will run with the existing configuration
of the component.
Please set the password for root here.

New password:

Re-enter new password:
```

Now a database is to be created for the zabbix server. So we login to mysql as root user and request the following queries:

mysql -u root -p

```
CREATE DATABASE zabbixdb character set utf8 collate utf8_bin;
CREATE USER 'zabbix'@'localhost' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON zabbixdb.* TO 'zabbix'@'localhost' WITH GRANT OPTION;
FLUSH PRIVILEGES;
```

```
mysql> CREATE USER 'zabbix'@'localhost' IDENTIFIED BY 'password';
Query OK, 0 rows affected (0.03 sec)

mysql> GRANT ALL PRIVILEGES ON zabbixdb.* TO 'zabbix'@'localhost' WITH GRANT OPTION;
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
```

After database configuration, the default schema of zabbix database is loaded:

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

And zabbix server is configured:

```
sudo nano /etc/zabbix/zabbix_server.conf
```

and following content was added for authentication:

```
"DBHost=localhost
DBName=zabbixdb
DBUser=zabbix
DBPassword=password"
```

```
DBHost=localhost
DBName=zabbixdb
```

```
DBUser=zabbix
DBPassword=password
```

Timezone is set within apache php configuration file as:

Nano /etc/php/7.4/apache2/php.ini

```
[Date]
; Defines the default timezone used by the date functions
; http://php.net/date.timezone
date.timezone = 'Asia/Kathmandu'
```

Now zabbix-server and agent are enabled and started using commands:

sudo systemctl enable zabbix-server

sudo systemctl start zabbix-server

sudo systemctl enable zabbix-agent

sudo systemctl start zabbix-agent

```
root@batman:/usr/share/doc/zabbix-server-mysql# systemctl status zabbix-server
● zabbix-server.service - Zabbix Server
   Loaded: loaded (/lib/systemd/system/zabbix-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-30 15:47:54 +0545; 30min ago
   Main PID: 20377 (zabbix_server)
   Tasks: 1 (limit: 9110)
   Memory: 2.3M
```

```
root@batman:/usr/share/doc/zabbix-server-mysql# systemctl status zabbix-agent
● zabbix-agent.service - Zabbix Agent
   Loaded: loaded (/lib/systemd/system/zabbix-agent.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-30 16:02:32 +0545; 16min ago
   Process: 21747 ExecStart=/usr/sbin/zabbix_agentd -c $CONFFILE (code=exited, status=0/SUCCESS)
   Main PID: 21749 (zabbix_agentd)
```

Apache server is restarted using command:

sudo systemctl restart apache2

And the firewall is configured to allow ports 10050 and 10051.

Sudo ufw allow 10050/tcp

Sudo ufw allow 10051/tcp

Ufw reload

When we access the server, 192.168.1.67:8088 we can see apache page running:

And 192.168.1.67:8088/zabbix starts initialization for the zabbix server.

We can use default username and password to login for the first time as: username: "Admin"

And password as "zabbix", and later we can reset the password also.

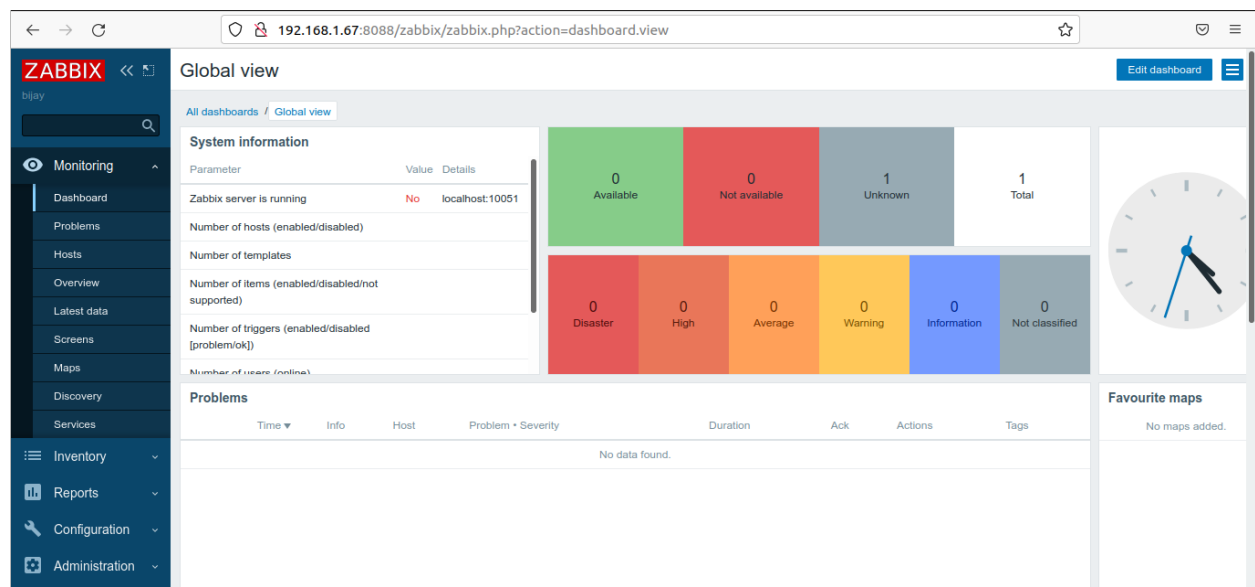
2. Provide screenshot of
 - Running Zabbix Server service,

```
root@batman:/usr/share/doc/zabbix-server-mysql# systemctl status zabbix-server
● zabbix-server.service - Zabbix Server
   Loaded: loaded (/lib/systemd/system/zabbix-server.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2021-11-30 15:47:54 +0545; 30min ago
     Main PID: 20377 (zabbix_server)
        Tasks: 1 (limit: 9110)
      Memory: 2.2M
```

- Database config parameter in server config file

```
DBHost=localhost
DBName=zabbixdb
DBUser=zabbix
DBPassword=password
```

- Server Dashboard



3. Install Latest Zabbix Agent on VM or host machine or server itself to fetch logs, steps include:
- Run as active check agent
 - Add a logging item to the same template for fetching /var/log/syslog(Ubuntu) or /var/log/messages (CentOS)
 - Fetch those logs from the host (Make sure required permissions are set for zabbix-agent to pull logs)
 - Provide agent configuration file & screenshots for target machine graph & logs

Item is created for host machine from Configuration>Hosts>Create Host

The screenshot shows the Zabbix web interface for creating a new host item. The 'Name' field is 'Available memory'. The 'Type' is 'Zabbix agent (active)'. The 'Key' is 'vm.memory.size[available]'. The 'Type of information' is 'Numeric (unsigned)'. The 'Units' are 'B'. The 'Update interval' is '1s'. The 'Custom intervals' table shows a 'Flexible' scheduling type with an interval of '50s' and a period of '1-7,00:00-24:00'. The 'History storage period' is 'Do not keep history' and the 'Trend storage period' is 'Do not keep trends'.

Zabbix user is added to the adm group to give access to syslog.

Sudo usermod -aG adm zabbix

```
root@batman:/var/log# ls -a syslog
syslog
root@batman:/var/log# ls -l syslog
-rw-r----- 1 syslog adm 39456 Dec  5 00:25 syslog
root@batman:/var/log# sudo usermod -aG adm zabbix
root@batman:/var/log#
```

And inside the /etc/zabbix directory, zabbix_agent.conf file is edited to set server, hostname and ServerActive as shown:

Nano /etc/zabbix/zabbix_agent.conf

```

# ServerActive=
Server=192.168.1.67

ServerActive=192.168.1.67

### Option: Hostname
# Unique, case sensitive
# Required for active checks
# Value is acquired from OS
#
# Mandatory: no
# Default:
# Hostname=

#Hostname=zabbix-act-server
Hostname=batman

```

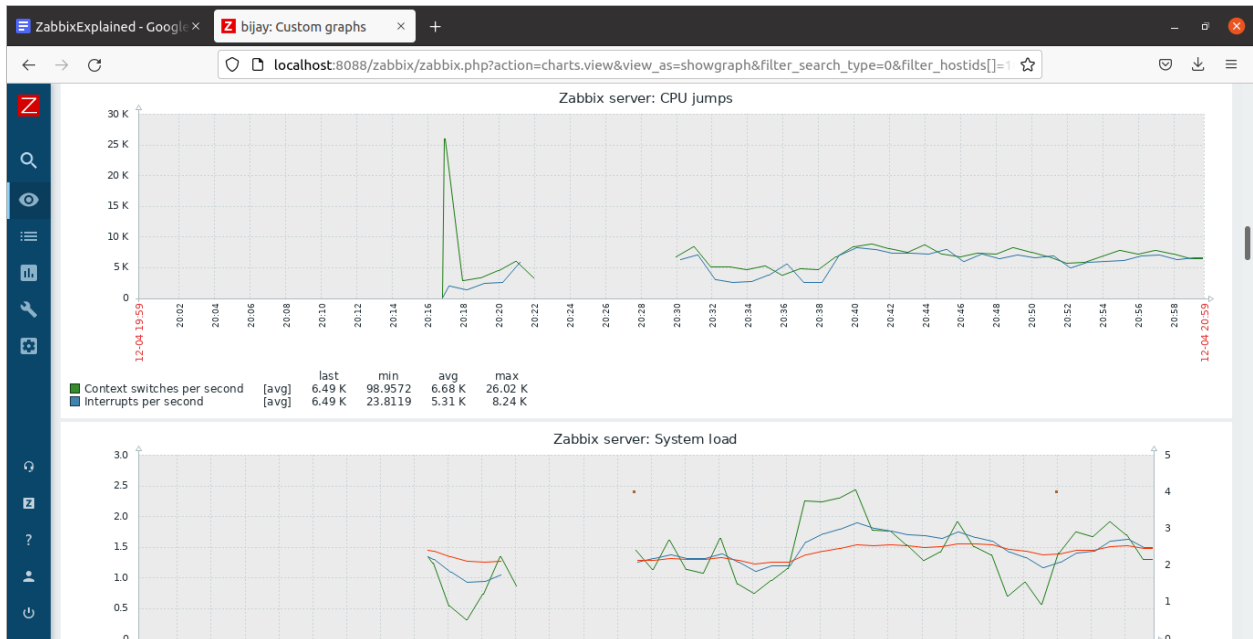
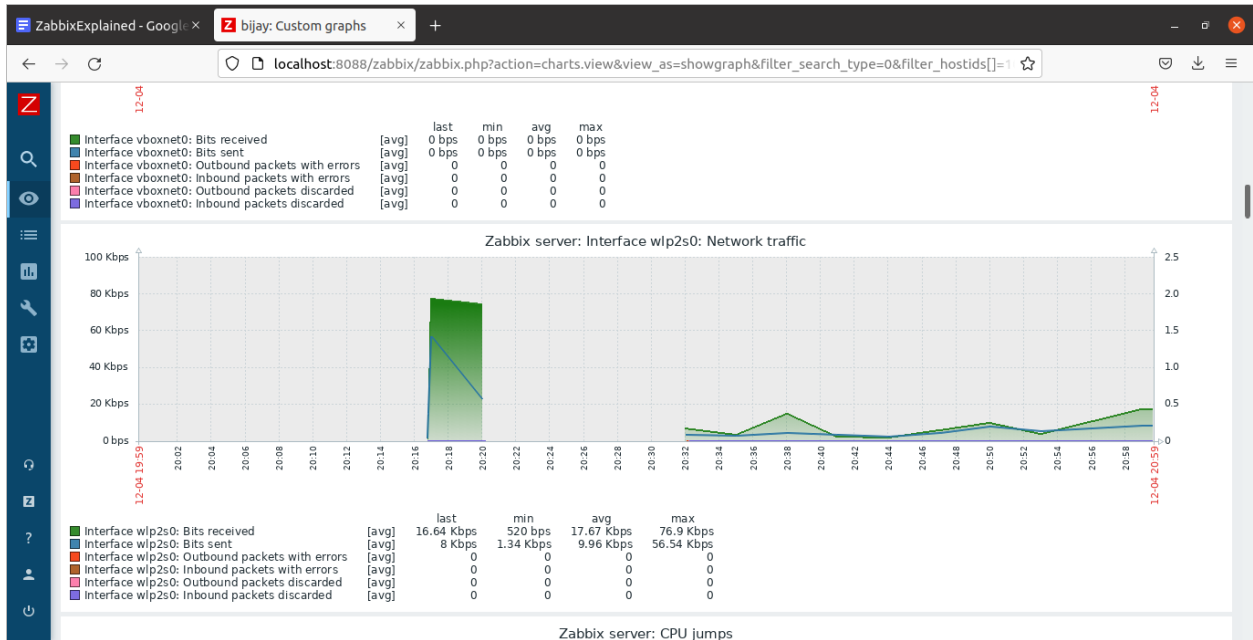
Now the hosts are active as shown:

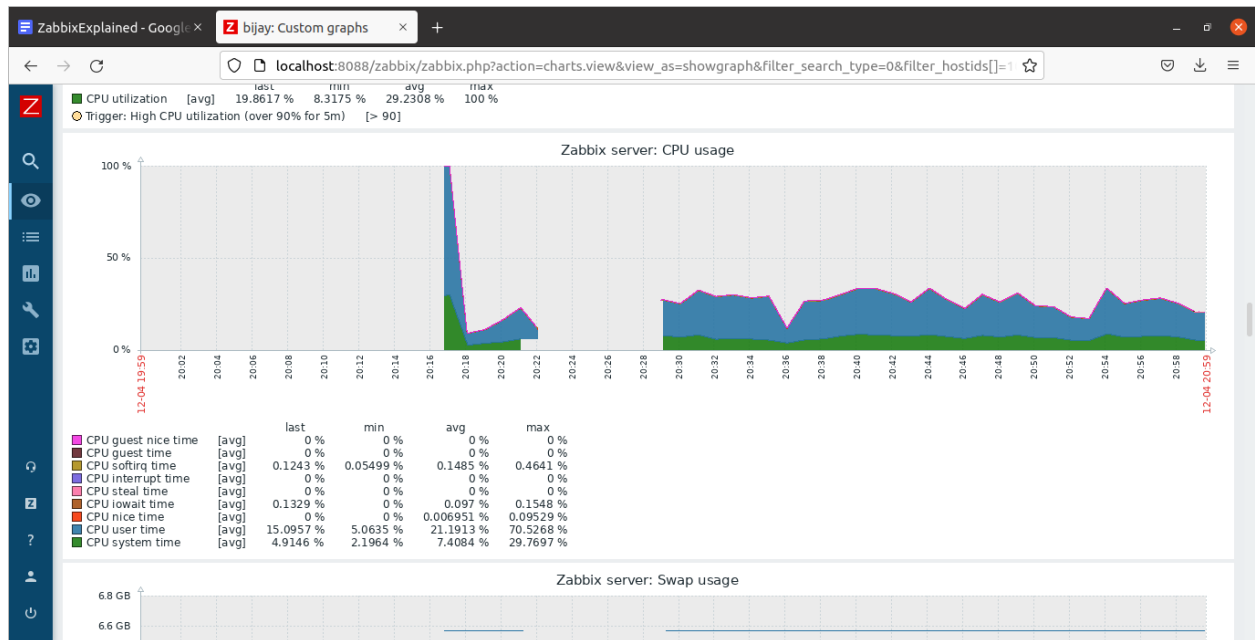
The screenshot shows the Zabbix web interface at the 'Hosts' page. The browser address bar shows 'localhost:8088/zabbix/zabbix.php?action=host.view'. The page has a sidebar with navigation icons and a main content area with a search bar and filter options. The filter options include 'Name', 'Host groups', 'IP', 'DNS', 'Port', 'Severity', 'Status' (Any, Enabled, Disabled), 'Tags' (And/Or, Or), 'Show hosts in maintenance' (checked), and 'Show suppressed problems' (unchecked). Below the filters is a table of hosts.

Name	Interface	Availability	Tags	Problems	Status	Latest data	Problems	Graphs	Screens	Web
active server	127.0.0.1: 10051	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs	Screens	Web
Zabbix server	127.0.0.1: 10050	ZBX SNMP JMX IPMI			Enabled	Latest data	Problems	Graphs 30	Screens 4	Web

Displaying 2 of 2 found

Now we can view the graphs:





ZabbixExplained x VPC Component x install zabbix ser x Install Zabbix ag x How To Install Z x syslog permissio x Z bijay: Configur x

localhost:8088/zabbix/hosts.php

Name Tags And/Or Or
DNS tag Contains Equals value Remove
IP Add
Port

<input type="checkbox"/>	Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info	Tags	
<input type="checkbox"/>	active server	Applications 11	Items 42	Triggers 14	Graphs 8	Discovery 3	Web	192.168.1.67:10051		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX	SNMP	JMX	IPMI	NONE
<input type="checkbox"/>	Zabbix server	Applications 20	Items 143	Triggers 72	Graphs 30	Discovery 3	Web	192.168.1.67:10050		Template App Zabbix Server	Enabled	ZBX	SNMP	JMX	IPMI	NONE

Displaying 2 of 2 found

0 selected

Zabbix 5.0.18. © 2001–2021, Zabbix SIA

Latest data

Host groups: Select Name:

Hosts: Select Show items without data: ☒

Application: Select Show details: ☐

Apply Reset

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	
▼ Zabbix server	CPU (17 items)				
<input type="checkbox"/>	Context switches per second	2021-12-05 00:16:03	7868.5042	+3424.5893	Graph
<input type="checkbox"/>	CPU guest nice time	2021-12-05 00:16:04	0 %		Graph
<input type="checkbox"/>	CPU guest time	2021-12-05 00:16:05	0 %		Graph
<input type="checkbox"/>	CPU idle time	2021-12-05 00:16:13	69.5808 %	-16.8933 %	Graph
<input type="checkbox"/>	CPU interrupt time	2021-12-05 00:16:07	0 %		Graph
<input type="checkbox"/>	CPU iowait time	2021-12-05 00:16:02	0.1051 %	-0.0297 %	Graph
<input type="checkbox"/>	CPU nice time	2021-12-05 00:16:09	0.1269 %	+0.1269 %	Graph
<input type="checkbox"/>	CPU softirq time	2021-12-05 00:16:06	0.1926 %	+0.04392 %	Graph
<input type="checkbox"/>	CPU steal time	2021-12-05 00:16:08	0 %		Graph

Latest data

Host groups: Select Name:

Hosts: Select Show items without data: ☒

Application: Select Show details: ☐

Apply Reset

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	
▼ active server	CPU (17 items)				
<input type="checkbox"/>	Context switches per second	2021-12-05 00:15:44	7864.3094		Graph
<input type="checkbox"/>	CPU guest nice time	2021-12-05 00:15:44	0 %		Graph
<input type="checkbox"/>	CPU guest time	2021-12-05 00:15:44	0 %		Graph
<input type="checkbox"/>	CPU idle time	2021-12-05 00:15:44	60.2489 %	-0.1034 %	Graph
<input type="checkbox"/>	CPU interrupt time	2021-12-05 00:20:21	0 %		Graph
<input type="checkbox"/>	CPU iowait time	2021-12-05 00:15:46	0.148 %		Graph
<input type="checkbox"/>	CPU nice time	2021-12-05 00:20:21	0 %	-0.06964 %	Graph
<input type="checkbox"/>	CPU softirq time	2021-12-05 00:15:48	0.1786 %		Graph
<input type="checkbox"/>	CPU steal time	2021-12-05 00:20:21	0 %		Graph