

1)Answer

```
sudo apt-get update
```

```
sudo nano /etc/hostname (zabbix-serv)
```

```
sudo nano /etc/hosts (172.16.59.132    zabbix-serv)
```

```
sudo reboot
```

```
#####installation of apache#####
```

```
sudo apt update
```

```
sudo apt install apache2
```

```
sudo systemctl start apache2
```

```
sudo systemctl enable apache2
```

```
sudo systemctl status apache2
```

```
###installation and configuration of php #####
```

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

```
php -v
```

```
saroj@zabbix-serv:~$ php -v
PHP 7.4.3 (cli) (built: Oct 25 2021 18:20:54) ( NTS )
Copyright (c) The PHP Group
Zend Engine v3.4.0, Copyright (c) Zend Technologies
    with Zend OPcache v7.4.3, Copyright (c), by Zend Technologies
saroj@zabbix-serv:~$
```

```
sudo nano /etc/php/7.4/apache2/php.ini
```

```
memory_limit 256Mupload_max_filesize 16M
```

```
post_max_size 16M
```

```
max_execution_time 300
```

```
max_input_time 300
```

```
max_input_vars 10000
```

```
date.timezone = Asia/Kathmandu
```

```
>save and exit
```

```
sudo systemctl restart apache2
```

```
sudo systemctl status apache2
```

#####installation and configuration of mysql#####

```
sudo apt install mysql-server mysql-client
```

```
sudo systemctl status mysql
```

```
sudo mysql --version
```

```
saroj@zabbix-serv:~$ sudo mysql --version
mysql Ver 8.0.27-0ubuntu0.20.04.1 for Linux on x86_64 ((Ubuntu))
saroj@zabbix-serv:~$
```

```
sudo mysql_secure_installation
```

(I set weak password(0) for trail purpose)

#####creating user and Databases#####

```
sudo mysql -u root -p
```

```
CREATE DATABASE zabbixdb character set utf8 collateutf8_bin;
```

```
CREATE USER 'zabbix'@'localhost' IDENTIFIED BY 'password';
```

```
GRANT ALL PRIVILEGES ON zabbixdb.* TO 'zabbix'@'localhost' WITH GRANT OPTION;
FLUSH PRIVILEGES;
```

```
exit;
```

#####For installing the Zabbix server, we will install the **zabbix-server-mysql** package that provides MySQL support, **the zabbix-frontend-php** package that provides a web interface for the server, alongside **zabbix-agent** for shipping metrics and the **zabbix-apache-conf** package for Apache.#####

```
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
```

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

1. DBHost=localhost
2. DBName=zabbixdb
3. DBUser=zabbix
4. DBPassword=password

```
systemctl reload apache2
```

```
#####Configure PHP for Zabbix frontend #####
```

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

```
php_value date.timezone Asia/Kathmandu
```

```
sudo systemctl restart apache2
```

```
#####On Zabbix server host importing initial schema and data.
```

```
sudo zcat /usr/share/doc/zabbix-server-mysql*/create.sql.gz | mysql -uzabbix -p zabbixdb
```

```
sudo systemctl enable zabbix-server
```

```
sudo systemctl restart zabbix-server
```

```
sudo systemctl status zabbix-server
```

```
sudo systemctl restart apache2
```

```
sudo systemctl status apache2
```

```
#####Allowing ports for zabbix#####
```

```
sudo ufw allow 80/tcp
```

```
sudo ufw allow 10050/tcp
```

```
sudo ufw allow 10051
```

```
udo ufw reload
```

```
#####
```

```
http://172.16.59.132/zabbix
```

2)Ans

systemctl status zabbix-server

```
saroj@zabbix-serv:~$ sudo 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 Wed 2021-12-01 21:50:55 PST; 9s ago
     Process: 50722 ExecStart=/usr/sbin/zabbix_server -c $CONFFILE (code=exited, status=0/SUCCESS)
    Main PID: 50724 (zabbix_server)
       Tasks: 38 (limit: 2260)
      Memory: 34.6M
     CGroup: /system.slice/zabbix-server.service
             └─50724 /usr/sbin/zabbix_server -c /etc/zabbix/zabbix_server.conf
                 └─50725 /usr/sbin/zabbix_server: configuration syncer [syncd configuration in 0.057347 sec, idle 60 sec]
                     └─50726 /usr/sbin/zabbix_server: alert manager #1 [sent 0, failed 0 alerts, idle 5.099905 sec during 5.101166 sec]
                         └─50727 /usr/sbin/zabbix_server: alerter #1 started
                             └─50728 /usr/sbin/zabbix_server: alerter #2 started
```

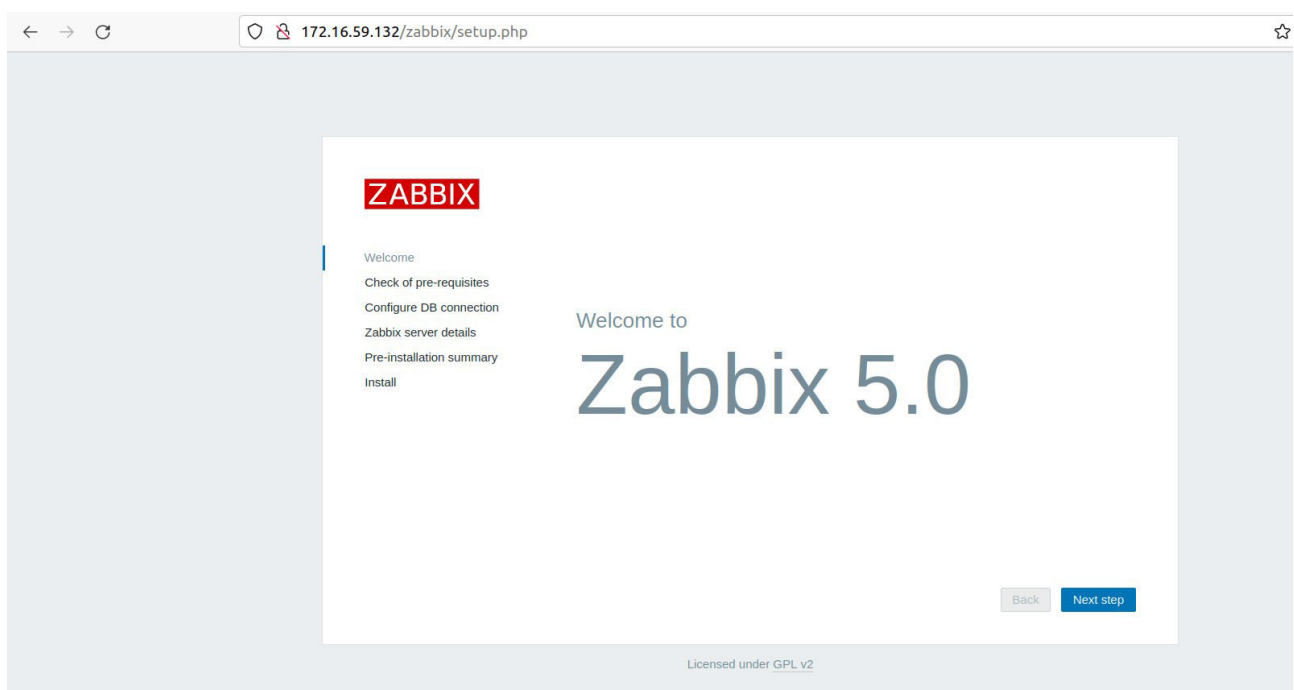
sudo nano /etc/zabbix/zabbix_server.conf

```
##### For advanced users - TCP-related fine-tuning parameters #####

## Option: ListenBacklog
# The maximum number of pending connections in the queue. This parameter is passed to
# listen() function as argument 'backlog' (see "man listen").
#
# Mandatory: no
# Range: 0 - INT_MAX (depends on system, too large values may be silently truncated to implement
# Default: SOMAXCONN (hard-coded constant, depends on system)
# ListenBacklog=
DBHost=localhost
DBName=zabbixdb
DBUser=zabbix
DBPassword=password
█

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

<http://172.16.59.132/zabbix>



Q3)

#####installation and configuration of zabbix agent(already installed above)#####

```
sudo apt install zabbix-agent
```

```
systemctl status zabbix-agent
```

```
saroj@zabbix-serv:~$ sudo systemctl status zabbix-agent
[sudo] password for saroj:
● zabbix-agent.service - Zabbix Agent
   Loaded: loaded (/lib/systemd/system/zabbix-agent.service; enabled; vendor >
   Active: active (running) since Thu 2021-12-02 10:08:19 PST; 51min ago
   Process: 2831 ExecStart=/usr/sbin/zabbix_agentd -c $CONFFILE (code=exited, >
  Main PID: 2834 (zabbix_agentd)
     Tasks: 6 (limit: 2260)
    Memory: 9.3M
    CGroup: /system.slice/zabbix-agent.service
            └─2834 /usr/sbin/zabbix_agentd -c /etc/zabbix/zabbix_agentd.conf
               └─2835 /usr/sbin/zabbix_agentd: collector [idle 1 sec]
                  └─2836 /usr/sbin/zabbix_agentd: listener #1 [waiting for connectio>
                     └─2837 /usr/sbin/zabbix_agentd: listener #2 [waiting for connectio>
                        └─2838 /usr/sbin/zabbix_agentd: listener #3 [waiting for connectio>
                           └─2839 /usr/sbin/zabbix_agentd: active checks #1 [idle 1 sec]

Dec 02 10:08:19 zabbix-serv systemd[1]: Starting Zabbix Agent...
Dec 02 10:08:19 zabbix-serv systemd[1]: Started Zabbix Agent.
```

#####Run as active check agent#####

```
sudo cat /etc/zabbix/zabbix_agentd.conf
Hostname=zabbix-serv
ServerActive=172.16.59.132
Server=172.16.59.132
```

#####goto configuration → host → create host#####
##give the same name as the config file hostname and server ip
while creating host

172.16.59.132/zabbix/items.php?form=update&hostid=10432&itemid=36721

ZABBIX

Items

All hosts / zabbix-serv Enabled ZBX SNMP JMX IPMI Applications 14 Items 64 Triggers 22 Graphs 13 Discovery rules 3 Web scenarios

Item Preprocessing

* Name

Type

* Key

Type of information

* Update interval

Custom intervals

Type	Interval	Period	Action
<input checked="" type="checkbox"/> Flexible	<input type="text" value="Scheduling"/>	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/>
<input type="button" value="Add"/>			

* History storage period

Log time format

New application

Applications

- General
- Interface ens33
- Inventory
- Memory
- Monitoring agent
- Network interfaces
- Security
- Status
- Storage
- Zabbix raw items

Description

#####change the permission of //var//log//syslog (give read permission to zabbix user)

```
sudo setfacl -m u:zabbix:r-- /var/log/syslog
```

#####restart the zabbix-agent

The screenshot shows the Zabbix web interface in a Firefox browser. The left sidebar contains navigation links for Monitoring, Inventory, Reports, Configuration, Administration, Support, and Help. The main content area displays the configuration for the 'Agent-active-log' item. The configuration includes a list of applications (CPU, Disk, Filesystem, etc.), a list of types (Calculated, Dependent item, Zabbix agent, etc.), and a table of triggers. The 'Agent-active-log' item is highlighted in the table, showing its key as 'log[/var/log/syslog]', interval as '1s', and status as 'Enabled'.

Item	Key	Interval	History	Trends	Type	Applications	Status
Agent-active-log	log[/var/log/syslog]	1s	90d		Zabbix agent (active)	General	Enabled

The screenshot shows the Zabbix web interface displaying the history of the 'Agent-active-log' item. The left sidebar is the same as the previous screenshot. The main content area shows a list of log entries with columns for Timestamp, Local time, and Value. The log entries show various system events, including the successful activation of the 'org.freedesktop.nm_dispatcher' service and the configuration of the NetworkManager service.

Timestamp	Local time	Value
2021-12-03 00:02:42	Dec 2 10:17:41	zabbix-serv systemd[1]: NetworkManager-dispatcher.service: Succeeded.
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv systemd[1]: Started Network Manager Script Dispatcher Service.
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv dbus-daemon[766]: [system] Successfully activated service 'org.freedesktop.nm_dispatcher'
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv systemd[1]: Starting Network Manager Script Dispatcher Service...
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): state changed extended -> extended
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option subnet_mask => '255.255.255.0'
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option routers => '172.16.59.2'
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option requested_wpad => '1'
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option requested_time_offset => '1'
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv dbus-daemon[766]: [system] Activating via systemd: service name='org.freedesktop.nm_dispatcher' unit='dbus-org.freedesktop.nm_dispatcher.service' requested by ':1.12' (uid=0 pid=768 comm='/usr/sbin/NetworkManager --no-daemon' label='unconfined')
2021-12-03 00:02:33	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option requested_subnet_mask => '1'
2021-12-03 00:02:32	Dec 2 10:17:31	zabbix-serv NetworkManager[768]: <info> [1638469951.7173] dhcp4 (ens33): option requested_static_routes => '1'

Activities Firefox Web Browser 3 00:09

6 Log file zabbix act Zabbix Ag network Zabbix / L Manage fi Linux File Zabbix ag 1 Zabbix cdt Implement Z History x LF-DevOp +

172.16.59.132/zabbix/history.php?action=showvalues&itemids[]=36721

ZABBIX

Monitoring

- Dashboard
- Problems
- Hosts
- Overview
- Latest data
- Screens
- Maps
- Discovery
- Services

Inventory

- Reports
- Configuration
- Administration

Support

Share

Help

User settings

2021-12-03 00:02:33	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_suonet_mask => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_static_routes => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_routers => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_root_path => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_rfc3442_classless_static_routes => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7173] dhcp4 (ens33): option requested_ntp_servers => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_nis_servers => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_nis_domain => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_ms_classless_static_routes => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_interface_mtu => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_host_name => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_domain_search => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_domain_name_servers => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_domain_name => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option requested_broadcast_address => '1'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option next_server => '172.16.59.254'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option ip_address => '172.16.59.132'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option expiry => '1638470851'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option domain_name_servers => '172.16.59.2'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7172] dhcp4 (ens33): option domain_name => 'localdomain'
2021-12-03 00:02:32	Dec 2 10:17:31 zabbix-serv NetworkManager[768]: <info> [1638469051.7171] dhcp4 (ens33): option dhcp_lease_time => '1800'
2021-12-03 00:02:01	Dec 2 10:17:01 zabbix-serv CRON[2971]: (root) CMD (cd / && run-parts --report /etc/cron.hourly)
2021-12-02 23:54:02	Dec 2 10:09:01 zabbix-serv systemd[1]: Finished Clean php session files.
2021-12-02 23:54:02	Dec 2 10:09:01 zabbix-serv systemd[1]: phpsessionclean.service: Succeeded.
2021-12-02 23:54:02	Dec 2 10:09:01 zabbix-serv systemd[1]: Starting Clean php session files...

screenshot of graph

