

1 install Zabbix Server 5 on VM that includes:

- Zabbix Server
- Database
- Apache
- PHP
- Zabbix Server-Modules for Apache & Database
- Zabbix Frontend

```
samana@samana-vm:~$ sudo apt-get install mysql-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7
  libevent-pthreads-2.1-7 libfcgi-perl libhtml-template-perl libmecab2
  mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0
  mysql-client-core-8.0 mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  libipc-sharedcache-perl mailx tinycs
The following NEW packages will be installed:
  libaio1 libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7
  libevent-pthreads-2.1-7 libfcgi-perl libhtml-template-perl libmecab2
  mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0
  mysql-client-core-8.0 mysql-server mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 16 newly installed, 0 to remove and 85 not upgraded.
Need to get 31.5 MB of archives.
After this operation, 262 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

```
samana@samana-vm:~$ sudo apt-get install apache2
[sudo] password for samana:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0
0 upgraded, 9 newly installed, 0 to remove and 85 not upgraded.
Need to get 1,820 kB of archives.
After this operation, 7,945 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

```
samana@samana-vm:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php7.4 php-common php7.4 php7.4-cli php7.4-common
  php7.4-json php7.4-mysql php7.4-opcache php7.4-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php7.4 php php-common php-mysql php7.4
  php7.4-cli php7.4-common php7.4-json php7.4-mysql php7.4-opcache
  php7.4-readline
0 upgraded, 12 newly installed, 0 to remove and 85 not upgraded.
Need to get 4,144 kB of archives.
After this operation, 18.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

```
samana@samana-vm:~$ wget https://repo.zabbix.com/zabbix/5.0/ubuntu/pool/main/z/
zabbix-release/zabbix-release_5.0-1+$(lsb_release -sc)_all.deb
--2021-12-03 14:28:42-- 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::2
062: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- 100%[=====>] 4.14K --.-KB/s in 0s

2021-12-03 14:28:43 (138 MB/s) - 'zabbix-release_5.0-1+focal_all.deb' saved [42
44/4244]

samana@samana-vm:~$
```

```
samana@samana-vm:~$ sudo dpkg -i zabbix-release_5.0-1+focal_all.deb
Selecting previously unselected package zabbix-release.
(Reading database ... 185189 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) ...
samana@samana-vm:~$
```

```
samana@samana-vm:~$ sudo apt install zabbix-server-mysql zabbix-apache-conf
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fonts-dejavu fonts-dejavu-extra fping libodbc1 libonig5 libopenipmi0
  php-bcmath php-gd php-ldap php-mbstring php-xml php7.4-bcmath php7.4-gd
  php7.4-ldap php7.4-mbstring php7.4-xml snmpd zabbix-frontend-php
Suggested packages:
  libmyodbc odbc-postgresql tdsodbc unixodbc-bin snmptrapd zabbix-nginx-conf
The following NEW packages will be installed:
  fonts-dejavu fonts-dejavu-extra fping libodbc1 libonig5 libopenipmi0
  php-bcmath php-gd php-ldap php-mbstring php-xml php7.4-bcmath php7.4-gd
  php7.4-ldap php7.4-mbstring php7.4-xml snmpd zabbix-apache-conf
  zabbix-frontend-php zabbix-server-mysql
0 upgraded, 20 newly installed, 0 to remove and 85 not upgraded.
Need to get 8,770 kB of archives.
After this operation, 38.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

```
samana@samana-vm:~$ sudo apt install zabbix-frontend-php
Reading package lists... Done
Building dependency tree
Reading state information... Done
zabbix-frontend-php is already the newest version (1:5.0.18-1+focal).
zabbix-frontend-php set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 85 not upgraded.
samana@samana-vm:~$
```

Now, we configure the mysql database for zabbix

```
samana@samana-vm:~$ sudo mysql -u root -p
[sudo] password for samana:
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.27-0ubuntu0.20.04.1 (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 state
```

Creating a database named zabbix.

```
mysql> create database zabbix character set utf8 collate utf8_bin;  
Query OK, 1 row affected, 2 warnings (0.06 sec)
```

Creating a user named zabbix and password for that database user

```
mysql> create user zabbix@localhost identified by 'zabbixpass';  
Query OK, 0 rows affected (0.07 sec)
```

Granting all privilege on all tables of zabbix database to zabbix user.

```
mysql> grant all privileges on zabbix.* to zabbix@localhost;  
Query OK, 0 rows affected (0.06 sec)
```

In the end we flush privileges for security reasons

```
mysql> flush privileges;  
Query OK, 0 rows affected (0.03 sec)  
  
mysql> █
```

We run the following command to set up the schema and import the data into the zabbix database

```
samana@samana-vm:~$ zcat /usr/share/doc/zabbix-server-mysql/create.sql.gz | mys  
ql -u zabbix -p zabbix  
Enter password:  
█
```

We set up the timezone in the following files:

/etc/apache2/conf-available/zabbix.conf and /etc/zabbix/apache.conf

```
samana@samana-vm:/etc/apache2/conf-available$ sudo nano zabbix.conf
samana@samana-vm:/etc/apache2/conf-available$
```

GNU nano 4.8

zabbix.conf

```
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 Asia/Kathmandu
```

```
</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 Asia/Kathmandu
```

```

GNU nano 4.8                                apache.conf
# Define /zabbix alias, this is the default
<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 Asia/Kathmandu
    </IfModule>
<IfModule mod_php7.c>

```

2. Provide screenshot of

- Running Zabbix Server service,

```

samana@samana-vm:/etc/zabbix$ sudo systemctl status zabbix-server.service
● zabbix-server.service - Zabbix Server
   Loaded: loaded (/lib/systemd/system/zabbix-server.service; disabled; vend
   Active: active (running) since Fri 2021-12-03 17:41:01 +0545; 25s ago
   Process: 60671 ExecStart=/usr/sbin/zabbix_server -c $CONFFILE (code=exited
 Main PID: 60673 (zabbix_server)
    Tasks: 38 (limit: 3518)
   Memory: 29.7M
    CGroup: /system.slice/zabbix-server.service
           └─60673 /usr/sbin/zabbix_server -c /etc/zabbix/zabbix_server.conf
           └─60676 /usr/sbin/zabbix_server: configuration syncer [syncd con
           └─60680 /usr/sbin/zabbix_server: alert manager #1 [sent 0, failed
           └─60681 /usr/sbin/zabbix_server: alerter #1 started
           └─60682 /usr/sbin/zabbix_server: alerter #2 started
           └─60683 /usr/sbin/zabbix_server: alerter #3 started
           └─60684 /usr/sbin/zabbix_server: preprocessing manager #1 [queued
           └─60685 /usr/sbin/zabbix_server: preprocessing worker #1 started
           └─60686 /usr/sbin/zabbix_server: preprocessing worker #2 started
           └─60687 /usr/sbin/zabbix_server: preprocessing worker #3 started
           └─60688 /usr/sbin/zabbix_server: lld manager #1 [processed 0 LLD >
           └─60689 /usr/sbin/zabbix_server: lld worker #1 started
           └─60690 /usr/sbin/zabbix_server: lld worker #2 started

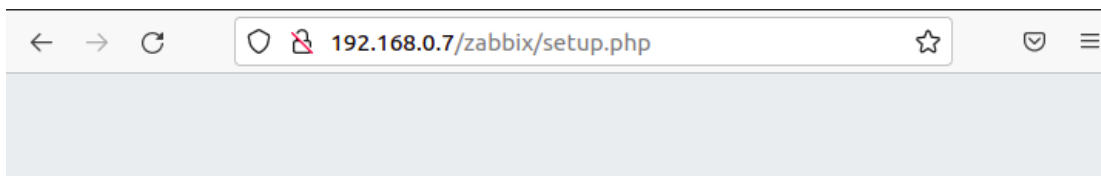
```


- Database config parameter in server config file

```
samana@samana-vm:~$ cd /etc/zabbix/  
samana@samana-vm:/etc/zabbix$ ls  
apache.conf  web  zabbix_server.conf  
samana@samana-vm:/etc/zabbix$ sudo nano zabbix_server.conf
```

```
GNU nano 4.8 zabbix_server.conf Modified  
# DBUser=  
  
DBUser=zabbix  
  
### Option: DBPassword  
# Database password.  
# Comment this line if no password is used.  
#  
# Mandatory: no  
# Default:  
DBPassword=zabbixpass  
  
### Option: DBSocket  
# Path to MySQL socket.  
#
```

Server Dashboard



ZABBIX

Welcome
Check of pre-requisites
Configure DB connection
Zabbix server details
Pre-installation summary
Install

Welcome to

Zabbix 5.0

←

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192.168.0.7/zabbix/setup.php

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ZABBIX

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

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"	Asia/Kathmandu		OK
PHP databases support	MySQL		OK
PHP bcmath	on		OK
PHP mbstring	on		OK

Back

Next step

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192.168.0.7/zabbix/setup.php

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ZABBIX

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

Configure DB connection

Please create database manually, and set the configuration parameters for connection to this database. Press "Next step" button when done.

Database type

MySQL

Database host

localhost

Database port

0

0 - use default port

Database name

zabbix

User

zabbix

Password

.....

Database TLS encryption

Connection will not be encrypted because it uses a socket file (on Unix) or shared memory (Windows).

Back

Next step

←

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🔒 192.168.0.7/zabbix/setup.php

90% ☆

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ZABBIX

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

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).

Host

localhost

Port

10051

Name

Zabbix_Server

Back

Next step

←

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🔒 192.168.0.7/zabbix/setup.php

90% ☆

🔒 ☰

ZABBIX

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

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

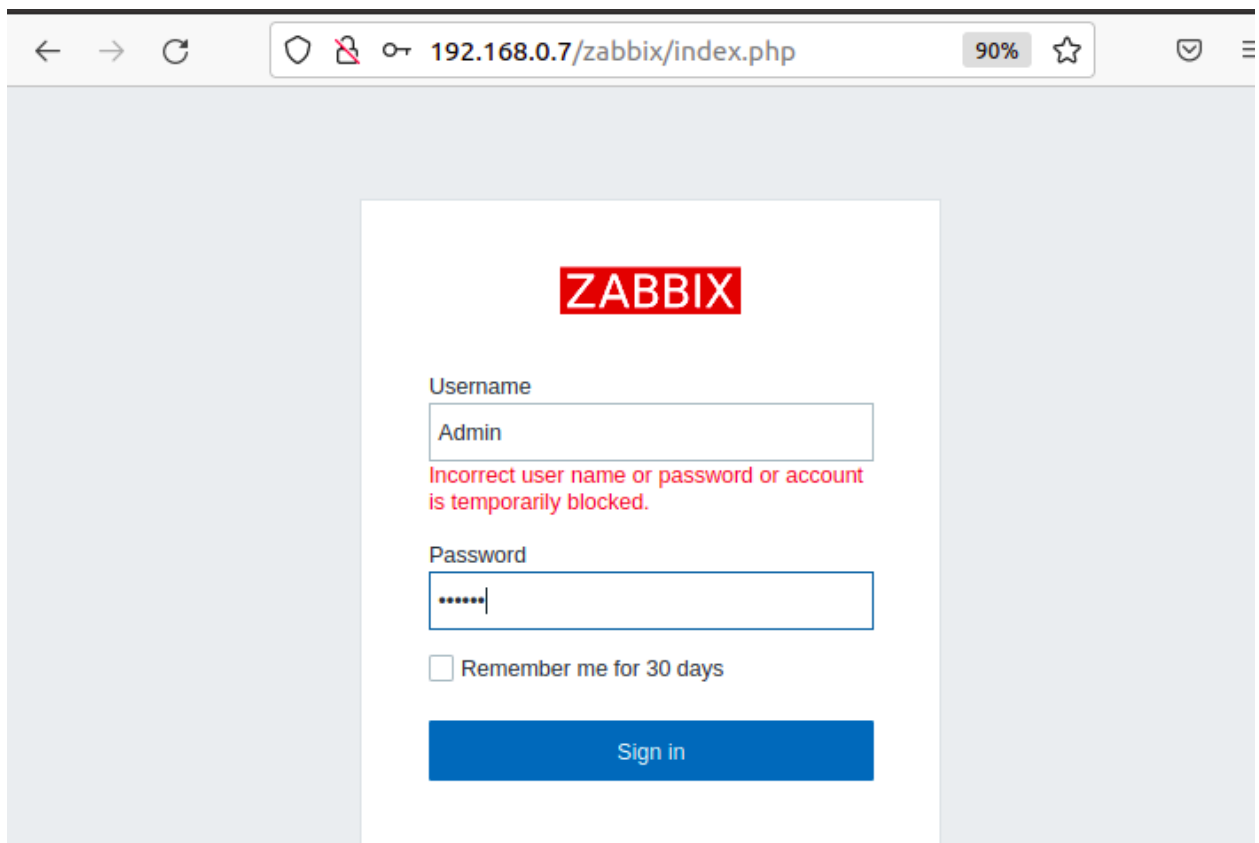
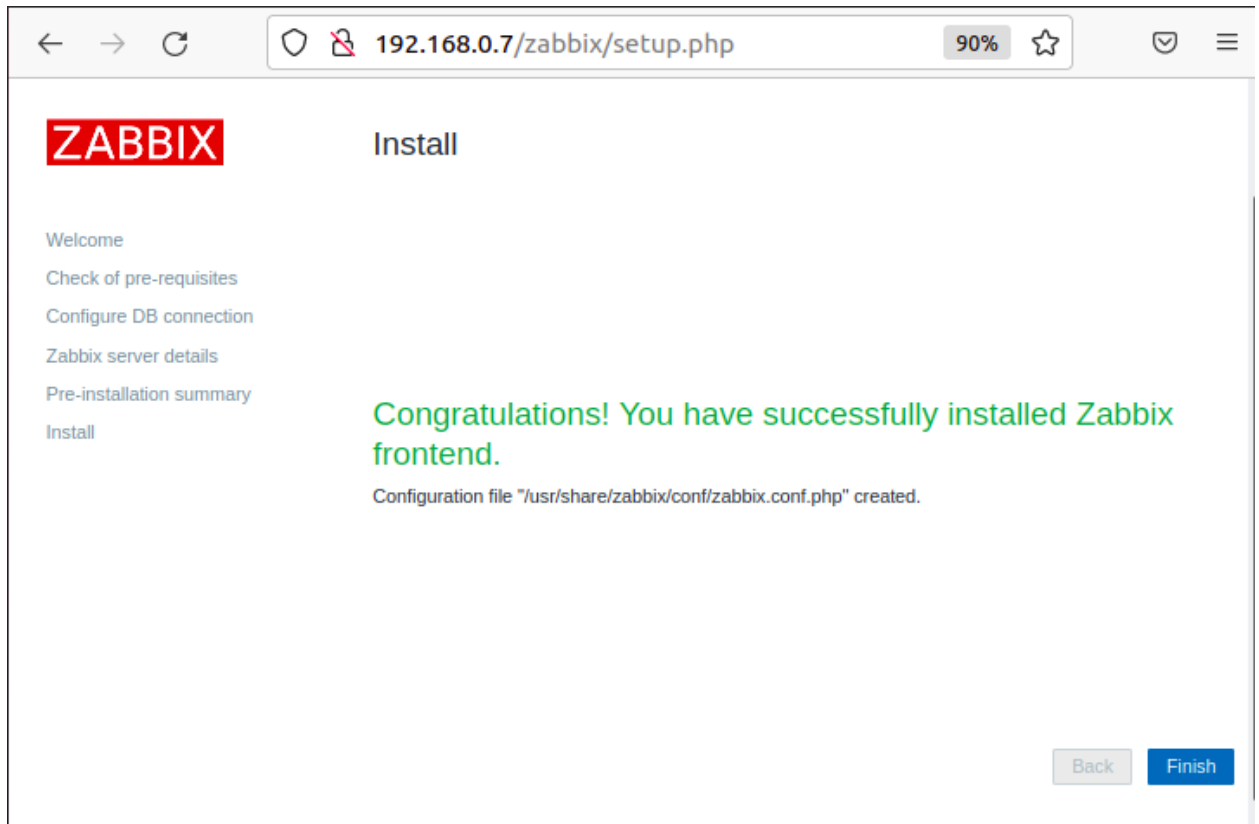
10051

Zabbix server name

Zabbix_Server

Back

Next step



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

Installing zabbix agent

```
samana@samana-vm:/etc/apache2/conf-available$ sudo apt 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 85 not upgraded.
Need to get 210 kB of archives.
After this operation, 843 kB of additional disk space will be used.
Get:1 http://repo.zabbix.com/zabbix/5.0/ubuntu focal/main amd64 zabbix-agent am
d64 1:5.0.18-1+focal [210 kB]
Fetched 210 kB in 1s (243 kB/s)
Selecting previously unselected package zabbix-agent.
(Reading database ... 186689 files and directories currently installed.)
Preparing to unpack .../zabbix-agent_1%3a5.0.18-1+focal_amd64.deb ...
Unpacking zabbix-agent (1:5.0.18-1+focal) ...
Setting up zabbix-agent (1:5.0.18-1+focal) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.11) ...
samana@samana-vm:/etc/apache2/conf-available$
```

Editing the configuration file for zabbix agent.

```
samana@samana-vm:/etc/apache2/conf-available$ cd /etc/zabbix/
samana@samana-vm:/etc/zabbix$ sudo nano zabbix_agentd.conf
```

```
GNU nano 4.8          zabbix_agentd.conf          Modified
# Default:
# LogRemoteCommands=0

##### Passive checks related

### Option: Server
#       List of comma delimited IP addresses, optionally in CIDR notation, or
#       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:12
#       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.exam
#
# Mandatory: yes, if StartAgents is not explicitly set to 0
# Default:
Server=127.0.0.1,192.168.0.7
```

```
GNU nano 4.8          /etc/zabbix/zabbix_agentd.conf
#       Example: ServerActive=127.0.0.1:20051,zabbix.domain,[::1]:30051,::1,[12
#
# Mandatory: no
# Default:
# ServerActive=

ServerActive=127.0.0.1

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

Hostname=Zabbixsamana

### Option: HostnameItem
```

We can see that the zabbix-agent service is running successfully.

```
samana@samana-vm:/etc/zabbix$ sudo systemctl status zabbix-agent.service
● zabbix-agent.service - Zabbix Agent
   Loaded: loaded (/lib/systemd/system/zabbix-agent.service; disabled; vendor preset: enabled)
   Active: active (running) since Fri 2021-12-03 20:05:50 +0545; 40s ago
     Process: 63972 ExecStart=/usr/sbin/zabbix_agentd -c $CONFFILE (code=exited, status=0/SUCCESS)
    Main PID: 63974 (zabbix_agentd)
      Tasks: 6 (limit: 3518)
     Memory: 4.4M
        CGroup: /system.slice/zabbix-agent.service
                └─63974 /usr/sbin/zabbix_agentd -c /etc/zabbix/zabbix_agentd.conf
                  └─63975 /usr/sbin/zabbix_agentd: collector [idle 1 sec]
                    └─63976 /usr/sbin/zabbix_agentd: listener #1 [waiting for connecti>
                     └─63977 /usr/sbin/zabbix_agentd: listener #2 [waiting for connecti>
                      └─63978 /usr/sbin/zabbix_agentd: listener #3 [waiting for connecti>
                       └─63979 /usr/sbin/zabbix_agentd: active checks #1 [idle 1 sec]

दि सम्बर 03 20:05:50 samana-vm systemd[1]: Starting Zabbix Agent...
दि सम्बर 03 20:05:50 samana-vm systemd[1]: zabbix-agent.service: Can't open PID >
दि सम्बर 03 20:05:50 samana-vm systemd[1]: Started Zabbix Agent.
samana@samana-vm:/etc/zabbix$
```

We add the zabbix user to adm group so that the user can read logs from /var/log/syslog

```
samana@samana-vm:~$ sudo usermod -aG adm zabbix
samana@samana-vm:~$
```

We create a host named Zabbixsamana

Hosts

All hosts / Zabbixsamana Enabled [ZBX] [SNMP] [JMX] [IPMI] Applications 14 Items 65 Triggers 22 Graphs 13 Discovery rules 3 Web scenarios

Host Templates IPMI Tags Macros Inventory Encryption

* Host name Zabbixsamana

Visible name

* Groups Linux servers x Zabbix servers x Select

type here to search

* Interfaces

Type	IP address	DNS name	Connect to	Port	Default
Agent	127.0.0.1		IP DNS	10050	<input checked="" type="radio"/> Remove

Add

Description m

Monitored by proxy (no proxy)

Enabled ☒

We set the template for that host as active zabbix agent

← → ↻ 192.168.0.7/zabbix/hosts.php?form=create 90% ☆

Hosts

Host Templates IPMI Tags Macros Inventory Encryption

Linked templates

Name	Action
------	--------

Link new templates

Template OS Linux by Zabbix agent active x Select

type here to search

Add Cancel

We create a item in the host that we created with the following details.

Items

Create item

All hosts

Zabbixsmana

Enabled

ZBX [SNMP] [JMX] [IPMI]

Applications 14

Items 64

Triggers 22

Graphs 13

Discovery rules 3

Web scenarios

Filter

Host groups

type here to search

Select

Type

all

Type of information

all

State

all

Hosts

Zabbixsmana

Select

Update interval

History

Status

all

Application

type here to search

Select

Trends

Triggers

all

Name

log[/var/log/syslog]

Template

all

Key

log[/var/log/syslog]

Discovery

all

Apply

Reset

Subfilter affects only filtered data

	Name	Triggers	Key	Interval	History	Trends	Type	Applications	Status	Info
<input type="checkbox"/>	***	syslogs	log[/var/log/syslog]	1m	90d		Zabbix agent (active)		Enabled	

Displaying 1 of 1 found

We can view the system logs as follows

← → ↻ 192.168.0.7/zabbix/history.php?action=showvalues&items[]=-37073

Zabbixsamana: syslogs View as Values As plain text

From now-1h To now Apply

Last 1 hour Filter

Last 2 days Yesterday Today Last 5 minutes
Last 7 days Day before yesterday Today so far Last 15 minutes
Last 30 days This day last week This week Last 30 minutes
Last 3 months Previous week This week so far Last 1 hour
Last 6 months Previous month This month Last 3 hours
Last 1 year Previous year This month so far Last 6 hours
Last 2 years This year Last 12 hours
This year so far Last 1 day

Timestamp	Local time	Value
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Received SIGRTMIN+20 from PID 286 (plymouthd).	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Finished Tell Plymouth To Write Out Runtime Data.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: plymouth-read-write.service: Succeeded.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Finished Set console font and keymap.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Starting Create Volatile Files and Directories...	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Condition check resulted in Commit a transient machine-id on disk being skipped.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Condition check resulted in Store a System Token in an EFI Variable being skipped.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Starting Tell Plymouth To Write Out Runtime Data...	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Starting Set console font and keymap...	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Starting Load AppArmor profiles...	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Reached target Local File Systems.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Mounted /boot/efi.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Mounting /boot/efi...	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system[1]: Finished File System Check on /dev/disk/by-uuid/C342-98C7.	
2021-12-04 23:25:14	Dec 4 11:25:03 samana-vm system-fsck[504]: /dev/sda2: 0 files, 1/131068 clusters	

The following are the graph of logs from the system

