What is Zabbix?

Zabbix is software that monitors numerous parameters of a network and the health and integrity of servers. Zabbix uses a flexible notification mechanism that allows users to configure e-mail based alerts for virtually any event. This allows a fast reaction to server problems. Zabbix offers excellent reporting and data visualisation features based on the stored data. This makes Zabbix ideal for capacity planning.

Features of Zabbix:

**1. Data Gathering**

**2. Highly Configurable Alerting**

**3. Web Monitoring Capabilities**

**4. Use of Templates**

5. Easy Configuration

6. Zabbix API

Zabbix Architecture:

Zabbix consists of several major software components, the responsibilities of which are outlined below.

##### Server

Zabbix server is the central component to which agents report availability and integrity information and statistics. The server is the central repository in which all configuration, statistical and operational data are stored.

##### Database storage

All configuration information as well as the data gathered by Zabbix is stored in a database.

##### Web interface

For an easy access to Zabbix from anywhere and from any platform, the web-based interface is provided. The interface is part of Zabbix server, and usually (but not necessarily) runs on the same physical machine as the one running the server.

##### Proxy

Zabbix proxy can collect performance and availability data on behalf of Zabbix server. A proxy is an optional part of Zabbix deployment; however, it may be very beneficial to distribute the load of a single Zabbix server.

##### Agent

Zabbix agents are deployed on monitoring targets to actively monitor local resources and applications and report the gathered data to Zabbix server.

#### Data flow

In addition it is important to take a step back and have a look at the overall data flow within Zabbix. In order to create an item that gathers data you must first create a host. Moving to the other end of the Zabbix spectrum you must first have an item to create a trigger. You must have a trigger to create an action. Thus if you want to receive an alert that your CPU load it too high on Server X you must first create a host entry for Server X followed by an item for monitoring its CPU, then a trigger which activates if the CPU is too high, followed by an action which sends you an email. While that may seem like a lot of steps, with the use of templating it really isn't. However, due to this design it is possible to create a very flexible setup.

Zabbix Installation:

### 🡪Adding Zabbix repository

Install the repository configuration package. This package contains apt (software package manager) configuration files.

For Ubuntu 18.04 run following commands:

# wget https://repo.zabbix.com/zabbix/4.0/ubuntu/pool/main/z/zabbix-release/zabbix-release\_4.0-2+bionic\_all.deb

# dpkg -i zabbix-release\_4.0-2+bionic\_all.deb

# apt update

### 🡪Server/proxy/frontend installation

To install Zabbix server with MySQL support:

# apt install zabbix-server-mysql

To install Zabbix proxy with MySQL support:

# apt install zabbix-proxy-mysql

To install Zabbix frontend:

# apt install zabbix-frontend-php

Creating Databases:

A Zabbix database must be created during the installation of Zabbix server or proxy.

#### PostgreSQL

You need to have database user with permissions to create database objects. The following shell command will create user zabbix. Specify password when prompted and repeat password (note, you may first be asked for sudo password):

shell> sudo -u postgres createuser --pwprompt zabbix

Now we will set up the database zabbix (last parameter) with the previously created user as the owner (-O zabbix).

shell> sudo -u postgres createdb -O zabbix -E Unicode -T template0 zabbix

Now import initial schema and data for the server with PostgreSQL

# zcat /usr/share/doc/zabbix-server-pgsql/create.sql.gz | sudo -u zabbix psql zabbix

For proxy, import initial schema:

# zcat /usr/share/doc/zabbix-proxy-mysql/schema.sql.gz | mysql -uzabbix -p zabbix

For proxy with PostgreSQL:

# zcat /usr/share/doc/zabbix-proxy-pgsql/schema.sql.gz | sudo -u zabbix psql zabbix

# zcat /usr/share/doc/zabbix-proxy-sqlite3/schema.sql.gz | sqlite3 zabbix.db

#### Configure database for Zabbix server/proxy

#### Edit zabbix\_server.conf (and zabbix\_proxy.conf) to use their respective databases. For example:

# vi /etc/zabbix/zabbix\_server.conf

DBHost=localhost

DBName=zabbix

DBUser=zabbix

DBPassword=<password>

### Agent installation:

To install the agent, run

# apt install zabbix-agent

To start the agent, run:

# service zabbix-agent start

### Java gateway installation

It is required to install Java gateway only if you want to monitor JMX applications. Java gateway is lightweight and does not require a database.

Once the required repository is added, you can install Zabbix Java gateway by running:

# apt install zabbix-java-gateway

Service Monitoring:

Service monitoring functionality is intended for those who want to get a high-level (business) view of monitored infrastructure. In many cases, we are not interested in low-level details, like the lack of disk space, high processor load, etc.

Web-Interface:

Zabbix API: