Express-Guide
~to~
Basic Setup of
ZABBIX
an IT Infrastructure Monitoring Solution

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::Task Detail::

- Setting up Zabbix Monitoring for IT Services & Infrastructure

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::Background::

Links: *http://www.zabbix.com/*

Zabbix Server is an enterprise-class open source distributed monitoring solution designed to monitor and track performance and availability of network servers, devices and other IT resources.

::Execution Method::

Zabbix Machine installation has mainly two parts.

- First part is setting up of Zabbix Server and Client on that Box with all pre-requisites.
- Second one is checking all services detected and providing configurations desired over a Web UI available after First part.

The same Web Portal is later used to configure resources over Zabbix to be monitored.

- ZABBIX Installation **Part.1 Walkthrough**
  - ***Pre-Requisite:***
    - Installing/Updating, at shell

```
#yum -y install ntp php php-bcmath php-mbstring
#yum -y install php-get php-mysql php-gd gd-devel
#yum -y install httpd mysql gcc mysql-server mysql-devel
#yum -y install curl-devel make gmake
#yum -y install net-snmp net-snmp-utils
#yum -y install net-snmp-devel net-snmp-libs
```

- ***Steps***
  - Start the NTP Daemon
    - at shell:
      ```
      #/etc/init.d/ntpd start
      ```
  - Install fping {try using yum, if don't work go for commands below}
    - at shell:
      ```
      #wget http://dag.wieers.com/rpm/packages/fping/fping-2.4-1.b2.0.rh9.rf.i386.rpm
      #rpm -uvh fping-2.4-1.b2.0.rh9.rf.i386.rpm
      ```
  - Make it avaialable at /usr/sbin/fping, if not already present by linking and then
    - at shell:
      ```
      #chmod 7555 /usr/sbin/fping
      ```
  - Adding user for Zabbix
    - at shell:
      ```
      #useradd zabbix
      ```
  - Download Zabbix's latest stable release and untar it, available at *http://sourceforge.net/projects/zabbix/files/*
    - at shell:
      ```
      #curl -L -o zabbix-xxxxx.tar.gz <URL_FOR_zabbix...>
      {like http://downloads.sourceforge.net/project/zabbix/ZABBIX%20Latest%20Stable/1.8.2/zabbix-1.8.2.tar.gz?use_mirror=space}
      #tar -zxf zabbix-xxxxx.tar.gz
      ```
  - Starting MySQL service, and setting it up for use
    - at shell:
      ```
      #mysql -u root
      mysql> SET PASSWORD FOR 'root'@'localhost' =
      PASSWORD('new_password');

      mysql> CREATE DATABASE zabbix;

      mysql> GRANT DROP, INDEX,CREATE, SELECT, INSERT, UPDATE,
      ALTER, DELETE ON zabbix.* TO zabbixsqluser@localhost
      IDENTIFIED BY "zabbixsqlpassword";

      mysql> quit;
      ```
  - Change current directory to Zabbix's untar
    - at shell:
      ```
      #cd zabbix-xxxxx/
      ```

- Prepare MySQL Database to be used with Zabbix
  - at shell:

```
#cat create/schema/mysql.sql | mysql -u zabbixsqluser -p
zabbix
#cat create/data/data.sql | mysql -u zabbixsqluser -p
zabbix
#cat create/data/images_mysql.sql | mysql -u
zabbixsqluser -p zabbix
```

- Configuring-n-Installing ZABBiX Server
  - at shell

```
#./configure --enable-server --prefix=/usr/local/zabbix
--with-mysql –with-net-snmp –with-libcurl
#make install
#make clean
```

- Configuring-n-Installing ZABBiX Agent
  - at shell:

```
#./configure --enable-agent --prefix=/usr/local/zabbix –
enable-static
#make install
```

- Installing it as a System Service
  - at shell:

```
#echo "zabbix_agent 10050/tcp" >> /etc/servcies
#echo "zabbix_server 10051/tcp" >> /etc/servcies
#mkdir /etc/zabbix
#cp misc/conf/zabbix_agent.conf /etc/zabbix/
#cp misc/conf/zabbix_server.conf /etc/zabbix/
```

- Edit '***zabbix_server.conf***' to suit the system specifications
  - at shell:

```
#vi /etc/zabbix/zabbix_server.conf
```

set lines for Variables 'DBUser','DBPassword','DBSocket' and 'FpingLocation' as follows

```
---------------------------------
DBUser=zabbixsqluser
DBPassword=zabbixsqlpassword
DBSocket=/var/lib/mysql/mysql.sock
FpingLocation=/usr/sbin/fping
---------------------------------
```

- Edit '***zabbix_agent.conf***' to suit system specification
  - at shell:

```
#vi /etc/zabbix/zabbix_agent.conf
```

set lines for Variables 'Server','HostName' as follows, create if not exists

```
---------------------------------
```

```
Server=127.0.0.1, <YourIP>
HostName=itz_ZABBiX
---------------------------------
```

- Copying System Service scripts to suitable directory Considering platform being Fedora/CentOS, its copying Service Scripts from fedora directory, choose the directory from 'misc/init.d' as per Distro
  - at shell:
    ```
    #cp misc/init.d/fedora/core/zabbix_agentd /etc/init.d/
    #cp misc/init.d/fedora/core/zabbix_server /etc/init.d/
    ```

- Edit '/etc/init.d/zabbix_server' service script for change following lines [from]-->[to]
  ```
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ # chkconfig: - 90 10         ]
  to-line   [ # chkconfig: 345 90 10       ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ BASEDIR=/opt/zabbix          ]
  to-line   [ BASEDIR=/usr/local/zabbix    ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ FULLPATH=$BASEDIR/bin/$BINARY_NAME  ]
  to-line   [ FULLPATH=$BASEDIR/sbin/$BINARY_NAME ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  ```

- Edit '/etc/init.d/zabbix_agentd' service script for change following lines [from]-->[to]
  ```
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ # chkconfig: - 90 10         ]
  to-line   [ # chkconfig: 345 90 10       ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ BASEDIR=/opt/zabbix          ]
  to-line   [ BASEDIR=/usr/local/zabbix    ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ BINARY_NAME=zabbix_agentd ]
  to-line   [ BINARY_NAME=zabbix_agent   ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  from-line [ FULLPATH=$BASEDIR/bin/$BINARY_NAME   ]
  to-line   [ FULLPATH=$BASEDIR/sbin/$BINARY_NAME ]
  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
  ```

- Setting up Service to run on startup
  - at shell:
    ```
    #chkconfig --level 345 zabbix_server on
    #chkconfig --level 345 zabbix_agentd on
    #chkconfig --level 345 httpd on
    #chkconfig --level 345 mysqld on
    ```

#chkconfig --level 0123456 iptables off
#/etc/init.d/iptables stop

- Enabling it's access as a Web Portal
  - Copying WebUI to DocumentROOT dir
    #cp -r frontends/php /var/www/html/zabbix
  - Editing php.ini according to desired parameters by zabbix
    #vi /etc/php.ini
  - Make following assignments to below variables, changing lines [from]-->[to]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [max_execution_time = 30]
    to-line [max_execution_time = 600]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [max_input_time = 60]
    to-line [max_input_time = 600]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [memory_limit = 128M]
    to-line [memory_limit = 256M]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [; date.timezone =]
    to-line [date.timezone = <Time_Zone like Asia/Calcutta>]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [post_max_size = 8M]
    to-line [post_max_size = 64M]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [;mbstring.func_overload = 0]
    to-line [mbstring.func_overload = 7]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    from-line [upload_max_filesize = 2M]
    to-line [upload_max_filesize = 10M]
    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

  - Restart httpd to bring it in effect
    #/etc/init.d/httpd restart
  - Enabling Zabbix Conf to get installed
    #chmod 777 /var/www/html/zabbix/conf

- ZABBIX Installation **Part.2 Walkthrough**

  Now on any machine, open a WebBrowser and go-to link "http://<ZabbixServerIP>/zabbix/".

  There you'll be presented an easy installer, read every message

carefully as you proceed.

- On First Page
  - you just need to click NEXT
    NOTE: if 'NEXT' aint doing anything, check you edited 'post_max_size' in '/etc/php.ini'

- On Second Page
  - read [:)] the license agreement and proceed if you agree...
  - check in box for 'I agree' and click 'NEXT>>'

- On Third Page if you did all above configuration changes and installation nothing should Fail
  - still if any Pre-Requisite fails, just check what you and fix it before proceeding
  - and if it shows error for something already installed and configure right
  - better 'yum erase <s/w> | yum install <s/w>' than re-install; by 'httpd' restart

- On Fourth Page
  - fill in the boxes with their respective values that you have set
  - like according to settings in this WalkThrough
    - Type:MySQL
    - Host:localhost
    - Port:0
    - Name:zabbix <the database's name>
    - User:zabbixsqluser
    - Password:zabbixsqlpassword
  - click 'NEXT>>'

- On Fifth Page
  - change the values here only if you have set your own Port or Host for Zabbix Server not following this Walkthrough
  - click 'NEXT>>'

- On Sixth Page
  - it just shows all settings you just made... give a check if all is OK
  - click 'NEXT>>'

- On Seventh Page
  - if it shows 'Configuration File: Ok' then click 'NEXT>>' else Troubleshoot first

- On Eighth Page
  - click 'Finish' button, your front-end installation is complete
  - it brings you to login page, the default credentials are

- User:admin; Password:zabbix

Now the entire installation part is over and we need to carry on with

- ZABBIX Configuration WalkThrough
  - Security/Stability Concerns - change default password first
    - first of all goto 'Administration'-> 'Users' tab
    - in right top corner, below serach-box there will be a combo-box, select 'users' in it
    - the listing below will change to existing users on Zabbix
    - click on 'Admin' user listed there, on page opened click 'Change Password' and save the change made
  - Configuring the HostGroups
    - goto 'Configuration'-> 'Hostgroups' tab
    - in right top corner, below serach-box thers will be a button 'Create Group', click it
    - give in a proper name 'n save
    - this way create as many HostGroups you want to create, better to modularize your monitoring right
  - Configuring the Hosts
    - goto 'Configuration'-> 'Hosts' tab
    - in right top corner, below search-box there will be a button 'Create Host', click it
    - give in a proper name
    - in 'Groups', select its HostGroup from 'Other Groups' and click '<<' button to add it to it
    - or could give in a new HostGroup Name in 'New Group', if forget to add earlier
    - fill in DNS-Name and IP-Address
    - select 'Connect To' pattern, the feild selected here must be filled in previous step
    - check if Zabbix_Agent port is same as we set during installation, here we set it '10050'
    - let status be 'Monitored', thats what you want right

  - *Now adding more has binary ways*
    - either create as many Hosts you want to create iterating it the above way
      OR
    - after doing all setting for a host, select from `Configuration>Hosts' listing and select 'Full Clone' button, now just make the minimal changes like Name, IP, DNS-Name,etc and SAVE it to a new machine

    - *Here, in above step while adding a host, one can LINK it to any template in right pane of windows, suppose you added it to SNMPv2 Template, all Applications,Items,Triggers will automatically get added*

to it... you will just have to create graph for required ones.

- Adding Applications to Hosts, and Items to Applications, Triggers and Graphs the similar UI as above is available, just fill in right choices.
- While adding Items if you choose SNMP as mode of interaction, then you need to enable SNMP on respective machines with the Community String specified here.
- If you configure for Zabbix Agent, need to install Zabbix Agent on that machine.

::Tools/Technology Used::

- Zabbix Server: http://www.zabbix.com/
- Net-SNMP : http://net-snmp.org
- SNMPWalk : http://www.net-snmp.org/docs/man/snmpwalk.html

::Inference::

Zabbix is a nice Monitoring Solution with advanced GUI support managing most of the tasks. But for large setups this kind of GUI looks slow, at such setups text-based configuration files based are much faster to work, as in Nagios.

Expanding its capabilities isn't much easy, so for most of the things you need to work with what you got. Good for users not for tweaks.

::Troubleshooting/Updates::

- ***Problem:*** everything was installed as per instructions, but service was giving error.
  Solution:
  following things were to be resolved
  - probably the zabbix_server & zabbix_agentd file in /etc/init.d were from wrong Distro
  - also in those files, the $BASEDIR was set to wrong location

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