Zabbix Manual

Welcome to the user manual for Zabbix 2.0 software. These pages are created to help our users successfully manage their monitoring tasks with Zabbix, from the simple to the more complex.

2.0/manual.txt · Last modified: 2012/05/23 11:27 by martins-v

1 Getting Zabbix

Overview

There are three ways of getting Zabbix:

- Install it from the packages
- Download the latest source archive and compile it yourself
- Download the virtual appliance

To download the latest sources or the virtual appliance, go to the Zabbix download page [http://www.zabbix.com/download.php], where direct links to latest versions are provided. To download older versions, see the link below stable version downloads.

2.0/manual/installation/getting_zabbix.txt · Last modified: 2013/05/07 10:30 by martins-v

2 Requirements

Hardware

Memory

Zabbix requires both physical and disk memory. 128 MB of physical memory and 256 MB of free disk space could be a good starting point. However, the amount of required disk memory obviously depends on the number of hosts and parameters that are being monitored. If you're planning to keep a long history of monitored parameters, you should be thinking of at least a couple of gigabytes to have enough space to store the history in the database. Each Zabbix daemon process requires several connections to a database server. Amount of memory allocated for the connection depends on configuration of the database engine.

The more physical memory you have, the faster the database (and therefore Zabbix) works!

CPU

Zabbix and especially Zabbix database may require significant CPU resources depending on number of monitored parameters and chosen database engine.

Other hardware

A serial communication port and a serial GSM modem are required for using SMS notification support in Zabbix. USB-to-serial converter will also work.

Examples of hardware configuration

The table provides several examples of hardware configurations:

Name	Platform	CPU/Memory	Database	Monitored hosts
Small	Ubuntu Linux	PII 350MHz 256MB	SQLite	20
Medium	Ubuntu Linux 64 bit	AMD Athlon 3200+ 2GB	MySQL InnoDB	500
Large	Ubuntu Linux 64 bit	Intel Dual Core 6400 4GB	RAID10 MySQL InnoDB or PostgreSQL	>1000
Very large	RedHat Enterprise	Intel Xeon 2xCPU 8GB	Fast RAID10 MySQL InnoDB or PostgreSQL	>10000

Actual configuration depends on the number of active items and refresh rates very much. It is highly recommended to run the database on a separate box for large installations.

Supported platforms

Due to security requirements and mission-critical nature of monitoring server, UNIX is the only operating system that can consistently deliver the necessary performance, fault tolerance and resilience. Zabbix operates on market leading versions.

Zabbix is tested on the following platforms:

- Linux
- IBM AIX
- FreeBSD

- NetBSD
- OpenBSD
- HP-UX
- Mac OS X
- Solaris
- Windows: 2000, Server 2003, XP, Vista, Server 2008, 7, Server 2012 (Zabbix agent only)

Zabbix may work on other Unix-like operating systems as well.

Software

Zabbix is built around a modern Apache web server, leading database engines, and PHP scripting language.

Database management system

Software	Version	Comments
MySQL	5.0 or later	Required if MySQL is used as Zabbix back end database. InnoDB engine is required.
Oracle	10g or later	Required if Oracle is used as Zabbix back-end database.
PostgreSQL	8.1 or later	Required if PostgreSQL is used as Zabbix back-end database. It is suggested to use at least PostgreSQL 8.3, which introduced much better VACUUM performance [http://www.postgresql.org/docs/8.3/static/release-8-3.html].
SQLite	3.3.5 or later	Required if SQLite is used as Zabbix back-end database.
IBM DB2	9.7 or later	Required if IBM DB2 is used as Zabbix back end database.

IBM DB2 support is experimental!

SQLite3 support for use with Zabbix server is experimental!

Frontend

The following software is required to run Zabbix frontend:

Software	Version	Comments
Apache	1.3.12 or later	
PHP	5.1.6 or later	
PHP extensions:		
gd	2.0 or later	PHP GD extension must support PNG images (*--with-png-dir*), JPEG (*--with-jpeg-dir*) images and FreeType 2 (*--with-freetype-dir*).
bcmath		php-bcmath (*--enable-bcmath*)
ctype		php-ctype (*--enable-ctype*)
libXML	2.6.15 or later	php-xml or php5-dom, if provided as a separate package by the distributor.
xmlreader		php-xmlreader, if provided as a separate package by the distributor.
xmlwriter		php-xmlwriter, if provided as a separate package by the distributor.

session		php-session, if provided as a separate package by the distributor.
sockets		php-net-socket (*--enable-sockets*). Required for user script support.
mbstring		php-mbstring (*--enable-mbstring*)
gettext		php-gettext (*--with-gettext*)
ibm_db2		Required if IBM DB2 is used as Zabbix back end database.
mysql		Required if MySQL is used as Zabbix back end database.
oci8		Required if Oracle is used as Zabbix back-end database.
pgsql		Required if PostgreSQL is used as Zabbix back-end database.
sqlite3		Required if SQLite is used as Zabbix back-end database.

Zabbix may work on previous versions of Apache, MySQL, Oracle, and PostgreSQL as well.

For other fonts than the default DejaVu, PHP function imagerotate [http://php.net/manual/en/function.imagerotate.php] might be required. If it is missing, these fonts might be rendered incorrectly in Monitoring → Overview header and other locations. This function is only available if PHP is compiled with bundled GD, which is not the case in Debian and other distributions.

WEB browser on client side

Cookies and Java Script must be enabled.
Latest versions of Google Chrome, Mozilla Firefox, Microsoft Internet Explorer and Opera are supported. Other browsers (Apple Safari, Konqueror) may work with Zabbix as well.

Server

Requirement	Description
OpenIPMI	Required for IPMI support.
libssh2	Required for SSH support. Version 1.0 or higher.
fping	Required for ICMP ping items.
libcurl	Required for web monitoring.
libiksemel	Required for Jabber support.
net-snmp	Required for SNMP support.

Database size

Zabbix configuration data require a fixed amount of disk space and do not grow much.

Zabbix database size mainly depends on these variables, which define the amount of stored historical data:

- Number of processed values per second

This is the average number of new values Zabbix server receives every second. For example, if we have 3000 items for monitoring with refresh rate of 60 seconds, the number of values per second is calculated as 3000/60 = **50**.

It means that 50 new values are added to Zabbix database every second.

- Housekeeper settings for history

Zabbix keeps values for a fixed period of time, normally several weeks or months. Each new value requires a

certain amount of disk space for data and index.

So, if we would like to keep 30 days of history and we receive 50 values per second, total number of values will be around (**30***24*3600)* **50** = 129.600.000, or about 130M of values.

Depending on the database engine used, type of received values (floats, integers, strings, log files, etc), the disk space for keeping a single value may vary from 40 bytes to hundreds of bytes. Normally it is around 50 bytes per value. In our case, it means that 130M of values will require 130M * 50 bytes = **6.5GB** of disk space.

- Housekeeper setting for trends

Zabbix keeps a 1-hour max/min/avg/count set of values for each item in the table **trends**. The data is used for trending and long period graphs. The one hour period can not be customised.

Zabbix database, depending on database type, requires about 128 bytes per each total. Suppose we would like to keep trend data for 5 years. Values for 3000 items will require 3000*24*365* **128** = **3.4GB** per year, or **16.8GB** for 5 years.

- Housekeeper settings for events

Each Zabbix event requires approximately 130 bytes of disk space. It is hard to estimate the number of events generated by Zabbix daily. In the worst case scenario, we may assume that Zabbix generates one event per second.

It means that if we want to keep 3 years of events, this would require **3***365*24*3600* **130** = **12.3GB**

The table contains formulas that can be used to calculate the disk space required for Zabbix system:

Parameter	Formula for required disk space (in bytes)
Zabbix configuration	Fixed size. Normally 10MB or less.
History	days*(items/refresh rate)*24*3600*bytes items : number of items days : number of days to keep history refresh rate : average refresh rate of items bytes : number of bytes required to keep single value, depends on database engine, normally 50 bytes.
Trends	days*(items/3600)*24*3600*bytes items : number of items days : number of days to keep history bytes : number of bytes required to keep single trend, depends on database engine, normally 128 bytes.
Events	days*events*24*3600*bytes events : number of event per second. One (1) event per second in worst case scenario. days : number of days to keep history bytes : number of bytes required to keep single trend, depends on database engine, normally 130 bytes.

So, the total required disk space can be calculated as:
Configuration + **History** + **Trends** + **Events**
The disk space will NOT be used immediately after Zabbix installation. Database size will grow then it will stop growing at some point, which depends on hosekeeper settings.

Disk space requirements for nodes in distributed setup are calculated in a similar way, but this also depends on a total number of child nodes linked to a node.

Time synchronisation

It is very important to have precise system date on server with Zabbix running. ntpd [http://www.ntp.org/] is the

most popular daemon that synchronizes the host's time with the time of other machines.

2.0/manual/installation/requirements.txt · Last modified: 2013/06/11 10:09 by richlv

3 Installation from packages

Overview

Zabbix SIA provides official RPM and DEB packages for Red Hat Enterprise Linux, Debian and Ubuntu LTS.

Package files are available at *repo.zabbix.com*. yum and apt repositories are also available on the server. A step-by-step tutorial for installing Zabbix from packages is provided here.

Red Hat Enterprise Linux / CentOS

Supported for versions: RHEL5 and RHEL6

Installing repository configuration package

Install the repository configuration package. This package contains yum configuration files.

Zabbix 2.0 for RHEL5:

```
# rpm -ivh http://repo.zabbix.com/zabbix/2.0/rhel/5/x86_64/zabbix-release-2.0-1.el5.noarch.rpm
```

Zabbix 2.0 for RHEL6:

```
# rpm -ivh http://repo.zabbix.com/zabbix/2.0/rhel/6/x86_64/zabbix-release-2.0-1.el6.noarch.rpm
```

Installing Zabbix packages

Install Zabbix packages. Example for Zabbix server and web frontend with mysql database.

Zabbix official repository provides fping, iksemel, libssh2 packages as well. These packages are located in the *non-supported* directory.

```
# yum install zabbix-server-mysql zabbix-web-mysql
```

Example for installing Zabbix agent only.

```
# yum install zabbix-agent
```

Creating initial database

Create zabbix database and user on MySQL.

```
# mysql -uroot
mysql> create database zabbix character set utf8;
mysql> grant all privileges on zabbix.* to zabbix@localhost identified by 'zabbix';
mysql> exit
```

Import initial schema and data.

```
# cd /usr/share/doc/zabbix-server-mysql-2.0.4/create
# mysql -uroot zabbix < schema.sql
```

```
# mysql -uroot zabbix < images.sql
# mysql -uroot zabbix < data.sql
```

Starting Zabbix server process

Edit database configuration in zabbix_server.conf

```
# vi /etc/zabbix/zabbix_server.conf
DBHost=localhost
DBName=zabbix
DBUser=zabbix
DBPassword=zabbix
```

Start Zabbix server process.

```
# service zabbix-server start
```

Editing PHP configuration for Zabbix frontend

Apache configuration file for Zabbix frontend is located in /etc/httpd/conf.d/zabbix.conf. Some PHP settings are already configured.

```
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 date.timezone Europe/Riga
```

It's necessary to uncomment the “date.timezone” setting and set the right timezone for you. After changing the configuration file restart the apache web server.

```
# service httpd restart
```

Zabbix frontend is available at http://zabbix-frontend-hostname/zabbix [http://zabbix-frontend-hostname/zabbix] in the browser. Default username/password is Admin/zabbix.

Debian / Ubuntu

Supported for version: Debian 6 (Squeeze), Debian 7 (Wheezy), Ubuntu 10.04 LTS (Lucid Lynx), Ubuntu 12.04 LTS (Precise Pangolin)

Installing repository configuration package

Install the repository configuration package. This package contains apt configuration files.

Zabbix 2.0 for Debian 6:

```
# wget http://repo.zabbix.com/zabbix/2.0/debian/pool/main/z/zabbix-release/zabbix-release_2.0-1squeeze_all.deb
# dpkg -i zabbix-release_2.0-1squeeze_all.deb
# apt-get update
```

Zabbix 2.0 for Debian 7:

```
# wget http://repo.zabbix.com/zabbix/2.0/debian/pool/main/z/zabbix-release/zabbix-release_2.0-1wheezy_all.deb
# dpkg -i zabbix-release_2.0-1wheezy_all.deb
# apt-get update
```

Zabbix 2.0 for Ubuntu 10.04 LTS:

```
# wget http://repo.zabbix.com/zabbix/2.0/ubuntu/pool/main/z/zabbix-release/zabbix-release_2.0-1lucid_all.deb
# dpkg -i zabbix-release_2.0-1lucid_all.deb
# apt-get update
```

Zabbix 2.0 for Ubuntu 12.04 LTS:

```
# wget http://repo.zabbix.com/zabbix/2.0/ubuntu/pool/main/z/zabbix-release/zabbix-release_2.0-1precise_all.deb
# dpkg -i zabbix-release_2.0-1precise_all.deb
# apt-get update
```

Installing and configuring MySQL database

This step is for Debian 6 and Ubuntu 10.04 with MySQL database only.

dbconfig-common on Debian 6 and Ubuntu 10.04 cannot create database with utf-8 encoding. It is necessary to install mysql-server package and configure mysql configuration to use utf-8 in advance.

For Debian 7 and Ubuntu, this step is not necessary.

Install MySQL server package:

```
# apt-get install mysql-server
```

Set character encoding parameter in /etc/mysql/my.cnf

```
[mysqld]
default-character-set=utf8
```

The encoding setting above is for MySQL 5.1. If you use MySQL 5.5 or later, please use “character-set-server=utf-8” instead.

Then start mysqld

```
# service mysql start
```

Installing Zabbix packages

Install Zabbix packages. dbconfig-common will create the database and populate the initial schema and data automatically. If backend db is located on a different server, please set dbc_remote_questions_default='true' in /etc/dbconfig-common/config.

Example for Zabbix server and web frontend with mysql database.

```
# apt-get install zabbix-server-mysql zabbix-frontend-php
```

The zabbix-frontend-php package, during installation, will configure a font, which is used on generated images. If you updated the package from any other repository and text is empty on graphs or maps, please check if a “ttf-dejavu-core” package is installed and try to execute “dpkg-reconfigure zabbix-frontend-php” command.

Example for installing Zabbix agent only.

```
# apt-get install zabbix-agent
```

Editing PHP configuration for Zabbix frontend

Apache configuration file for Zabbix frontend is located in /etc/apache2/conf.d/zabbix. Some PHP settings are already configured.

```
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 date.timezone Europe/Riga
```

It's necessary to uncomment the “date.timezone” setting and set the correct timezone for you. After changing the configuration file restart the apache web server.

```
# service apache2 restart
```

Zabbix frontend is available at http://zabbix-frontend-hostname/zabbix [http://zabbix-frontend-hostname/zabbix] in the browser. Default username/password is Admin/zabbix.

4 Installation from sources

Overview

You can get the very latest version of Zabbix by compiling it from the sources.

A step-by-step tutorial for installing Zabbix from the sources is provided here.

1 Installing Zabbix daemons

1 Download the source archive

Go to the Zabbix download page [http://www.zabbix.com/download.php] and download the source archive. Once downloaded, extract the sources, by running:

```
$ tar -zxvf zabbix-2.0.0.tar.gz
```

Enter the correct Zabbix version in the command. It must match the name of the downloaded archive.

2 Create user account

For all of the Zabbix daemon processes, an unprivileged user is required. If a Zabbix daemon is started from an unprivileged user account, it will run as that user.

However, if a daemon is started from a 'root' account, it will switch to a 'zabbix' user account, which must be present. To create such a user account (in its own group, “zabbix”) on Linux systems, run:

```
groupadd zabbix
useradd -g zabbix zabbix
```

A separate user account is not required for Zabbix frontend installation.

If Zabbix server and agent are run on the same machine it is recommended to use a different user for running the server than for running the agent. Otherwise, if both are run as the same user, the agent can access the server configuration file and any Admin level user in Zabbix can quite easily retrieve, for example, the database password.

Running Zabbix as `root`, `bin`, or any other account with special rights is a security risk.

3 Create Zabbix database

For Zabbix server and proxy daemons, as well as Zabbix frontend, a database is required. It is not needed to run Zabbix agent.

SQL scripts are provided for creating database schema and inserting the dataset. Zabbix proxy database needs only the schema while Zabbix server database requires also the dataset on top of the schema.

Having created a Zabbix database, proceed to the following steps of compiling Zabbix.

4 Configure the sources

When configuring the sources for a Zabbix server or proxy, you must specify the database type to be used. Only one database type can be compiled with a server or proxy process at a time.

To see all of the supported configuration options, inside the extracted Zabbix source directory run:

```
./configure --help
```

To configure the sources for a Zabbix server and agent, you may run something like:

```
./configure --enable-server --enable-agent --with-mysql --enable-ipv6 --with-net-snmp --with-libcurl
```

To configure the sources for a Zabbix server (with PostgreSQL etc.), you may run:

```
./configure --enable-server --with-postgresql --with-net-snmp
```

To configure the sources for a Zabbix proxy (with SQLite etc.), you may run:

```
./configure --prefix=/usr --enable-proxy --with-net-snmp --with-sqlite3 --with-ssh2
```

To configure the sources for a Zabbix agent, you may run:

```
./configure --enable-agent
```

Use can add --enable-static flag to statically link libraries. If you plan to distribute compiled binaries among different servers, you must use this flag to make these binaries work without required libraries. Note that --enable-static does not work under Solaris [http://blogs.sun.com/rie/entry/static_linking_where_did_it].

Using --enable-static option is not recommended when building server.

In order to build the server statically you must have a static version of every external library needed. There is no strict check for that in configure script.

Command-line utilities zabbix_get and zabbix_sender are compiled if --enable-agent option is used.

Use --with-ibm-db2 flag to specify location of the CLI API.
Use --with-oracle flag to specify location of the OCI API.

--with-ucd-snmp flag can be used instead of --with-net-snmp. If no SNMP support is required, both --with-net-snmp and --with-ucd-snmp may be skipped.

5 Make and install everything

If installing from SVN, it is required to run first:

```
$ make dbschema
```

```
make install
```

This step should be run as a user with sufficient permissions (commonly 'root', or by using `sudo`).

Running `make install` will by default install the daemon binaries (zabbix_server, zabbix_agentd, zabbix_proxy) in /usr/local/sbin and the client binaries (zabbix_get, zabbix_sender) in /usr/local/bin.

To specify a different location than /usr/local, use a --prefix key in the previous step of configuring sources, for example --prefix=/home/zabbix. In this case daemon binaries will be installed under <prefix>/sbin, while utilities under <prefix>/bin. Man pages will be installed under <prefix>/share.

6 Review and edit configuration files

- edit the Zabbix agent configuration file **/usr/local/etc/zabbix_agentd.conf**

You need to configure this file for every host with zabbix_agentd installed.

You must specify the Zabbix server **IP address** in the file. Connections from other hosts will be denied.

- edit the Zabbix server configuration file **/usr/local/etc/zabbix_server.conf**

You must specify the database name, user and password (if using any).

With SQLite the full path to database file must be specified; DB user and password are not required.

The rest of the parameters will suit you with their defaults if you have a small installation (up to ten monitored hosts). You should change the default parameters if you want to maximize the performance of Zabbix server (or proxy) though. See the [Performance tuning] section for more details.

- if you have installed a Zabbix proxy, edit the proxy configuration file **/usr/local/etc/zabbix_proxy.conf**

You must specify the server IP address and proxy hostname (must be known to the server), as well as the database name, user and password (if using any).

With SQLite the full path to database file must be specified; DB user and password are not required.

7 Start up the daemons

Run zabbix_server on the server side.

```
shell> zabbix_server
```

Make sure that your system allows allocation of 36MB (or a bit more) of shared memory, otherwise the server may not start and you will see “Cannot allocate shared memory for <type of cache>.” in the server log file. This may happen on FreeBSD, Solaris 8.
See the "See also" section at the bottom of this page to find out how to configure shared memory.

Run zabbix_agentd on all the monitored machines.

```
shell> zabbix_agentd
```

Make sure that your system allows allocation of 2MB of shared memory, otherwise the agent may not start and you will see “Cannot allocate shared memory for collector.” in the agent log file. This may happen on Solaris 8.

If you have installed Zabbix proxy, run zabbix_proxy.

```
shell> zabbix_proxy
```

2 Installing Zabbix web interface

Copying PHP files

Zabbix frontend is written in PHP, so to run it a PHP supported webserver is needed. Installation is done by simply copying the PHP files from frontends/php to the webserver HTML documents directory.

Common locations of HTML documents directories for Apache web servers include:

- /usr/local/apache2/htdocs (default directory when installing Apache from source)
- /srv/www/htdocs (OpenSUSE, SLES)
- /var/www/html (Fedora, RHEL, CentOS)
- /var/www (Debian, Ubuntu)

It is suggested to use a subdirectory instead of the HTML root. To create a subdirectory and copy Zabbix frontend files into it, execute the following commands, replacing the actual directory:

```
mkdir <htdocs>/zabbix
cd frontends/php
cp -a . <htdocs>/zabbix
```

If installing from SVN and planning to use any other language than English, you must generate translation files. To do so, run:

```
locale/make_mo.sh
```

`msgfmt` utility from gettext package is required.

Additionally, to use any other language than English, its locale should be installed on the web server. See the "See also" section in the “User profile” page to find out how to install it if required.

Installing frontend

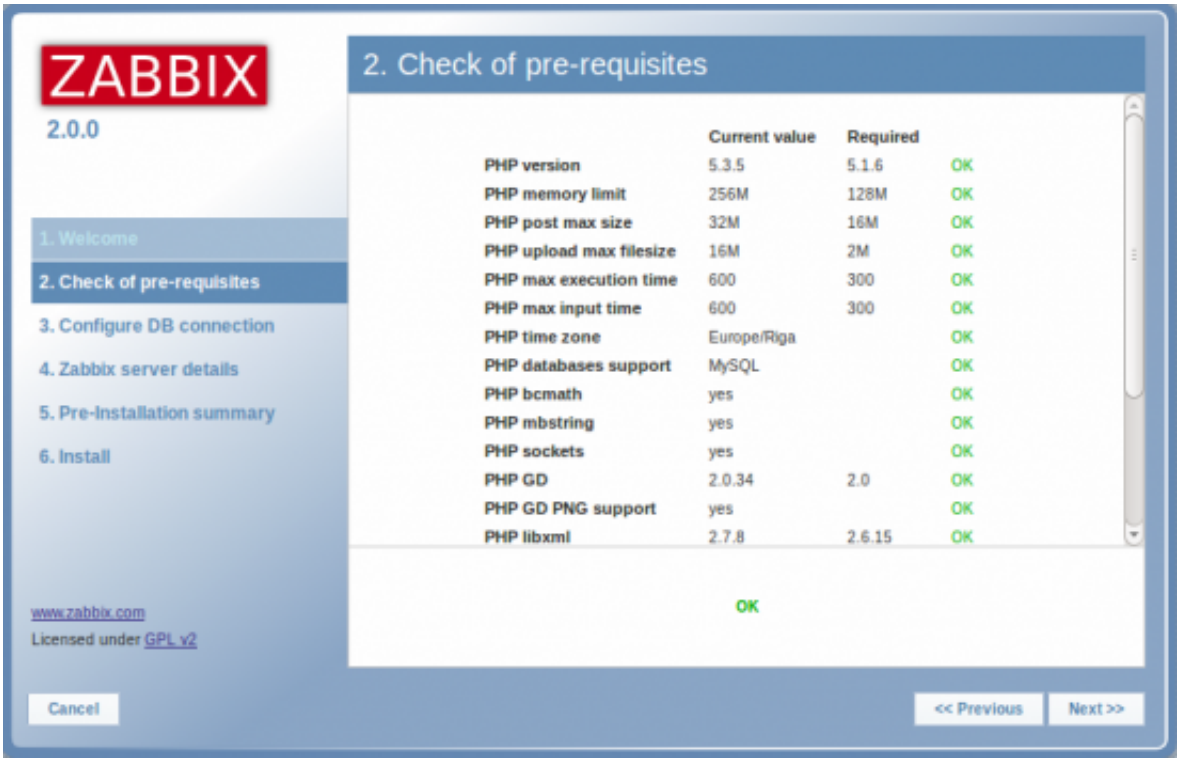
Step 1

In your browser, open Zabbix URL: http://<server_ip_or_name>/zabbix

You should see the first screen of the frontend installation wizard.

Step 2

Make sure that all software prerequisites are met.



Pre-requisite	Minimum value	Description
PHP version	5.1.6	

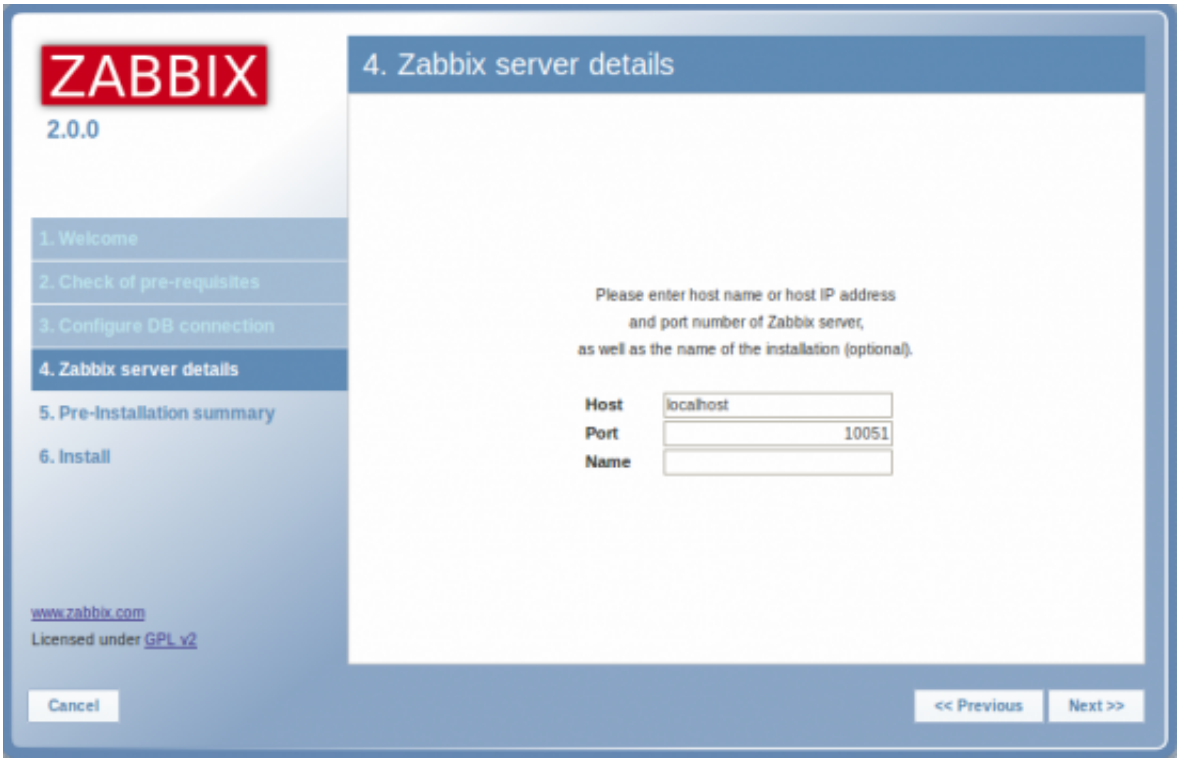
PHP memory_limit option	128MB	In php.ini: memory_limit = 128M
PHP post_max_size option	16MB	In php.ini: post_max_size = 16M
PHP upload_max_filesize option	2MB	In php.ini: upload_max_filesize = 2M
PHP max_execution_time option	300 seconds	In php.ini: max_execution_time = 300
PHP max_input_time option	300 seconds	In php.ini: max_input_time = 300
PHP session.auto_start option	must be disabled	In php.ini: session.auto_start = 0. Required since Zabbix **2.0.4 version**.
Database support	One of: IBM DB2, MySQL, Oracle, PostgreSQL, SQLite	One of the following modules must be installed: ibm_db2, mysql, oci8, pgsql, sqlite3
bcmath		php-bcmath
mbstring		php-mbstring
sockets		php-net-socket. Required for user script support.
gd	2.0 or higher	php-gd. PHP GD extension must support PNG images (*--with-png-dir*), JPEG (*--with-jpeg-dir*) images and FreeType 2 (*--with-freetype-dir*).
libxml	2.6.15	php-xml or php5-dom
xmlwriter		php-xmlwriter
xmlreader		php-xmlreader
ctype		php-ctype
session		php-session
gettext		php-gettext

Step 3

Enter details for connecting to the database. Zabbix database must already be created.

Step 4

Enter Zabbix server details.

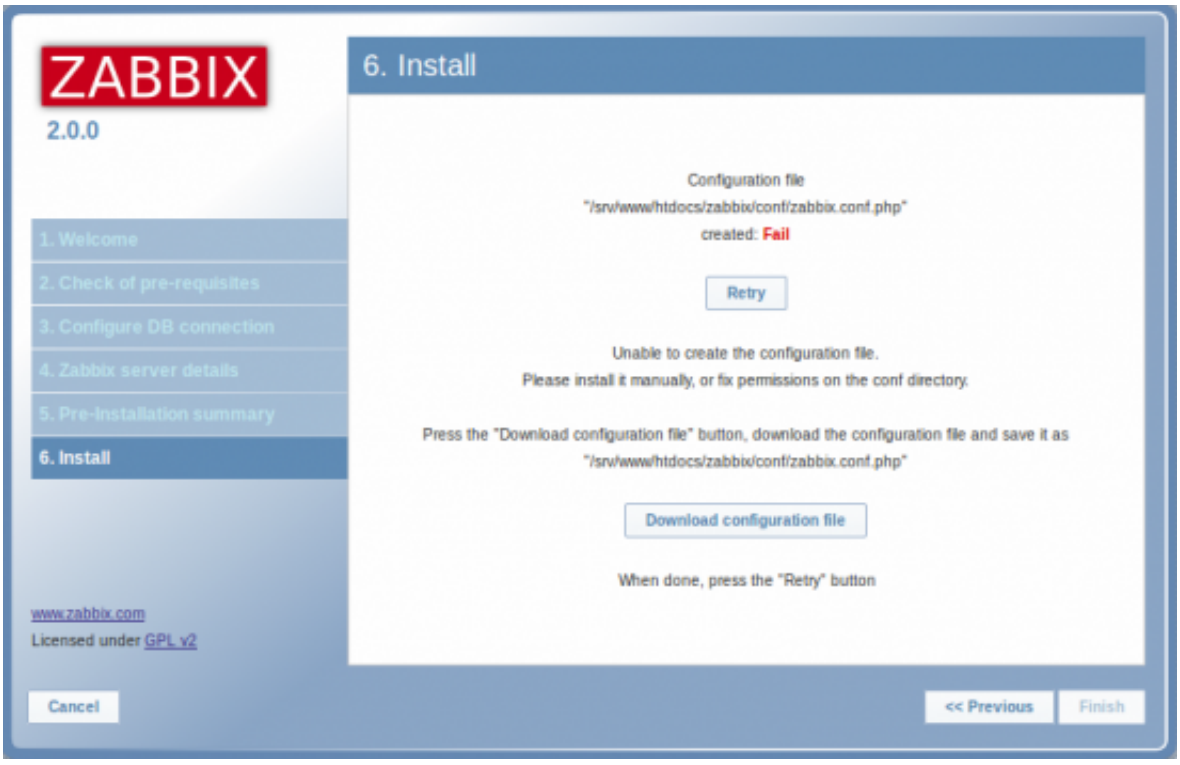


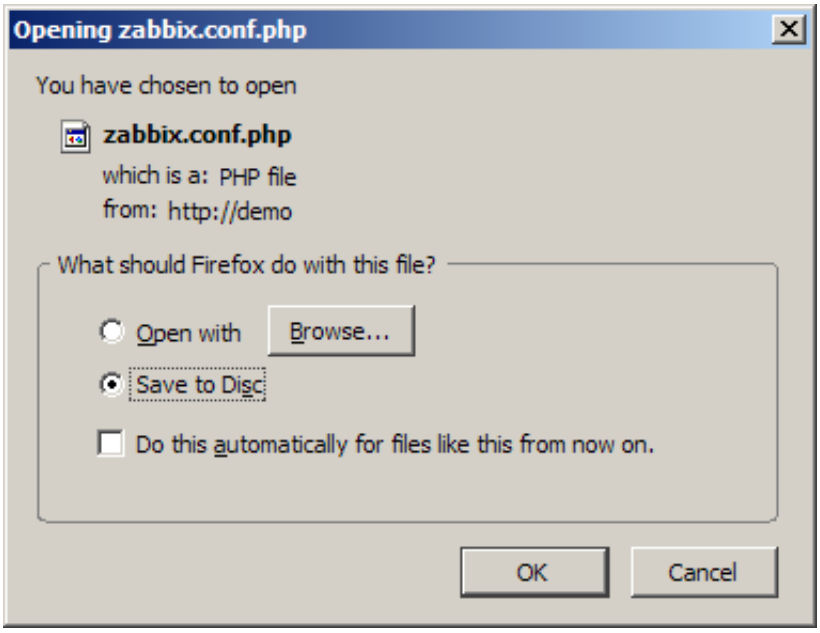
Step 5

Review a summary of settings.

Step 6

Download the configuration file and place it under conf/.





Step 7

Finish the installation.

Step 8

Zabbix frontend is ready! The default user name is **Admin**, password **zabbix**.

Proceed to getting started with Zabbix.

See also

1. How to configure shared memory for Zabbix daemons [http://www.zabbix.org/wiki/How_to/configure_shared_memory]

2.0/manual/installation/install.txt · Last modified: 2013/03/01 11:47 by martins-v

5 Known issues

Known issues for 2.0.0

- Reordering entries in lists by dragging them sometimes moves elements inside the entry to the left hand side - this is a JQuery issue

Known issues for 2.0.0 - 2.0.4

- IT services custom service times representation in the frontend could get broken after upgrading from 1.8 to 2.0 - fixed in the upgrade patch of 2.0.5

Known issues for 2.0.0 - 2.0.8

- Log size was not stored on Zabbix proxy, making the agent re-read the whole file upon restart.

Known issues for 2.0.1

- Event exporting to CSV also exports extra data - fixed for 2.0.2

Known issues for 2.0.4 - 2.0.6

- It is not possible to redirect line “info from server” from Zabbix sender output - fixed for 2.0.7

2.0/manual/installation/known_issues.txt · Last modified: 2013/08/26 12:09 by martins-v

6 Upgrade procedure

Overview

This section provides the steps required for a successful upgrade from Zabbix 1.8.x to 2.0.

Database upgrade to version 2.0 may take a long time, as all the historical data tables have to be upgraded.

Make sure to read upgrade notes before proceeding with the upgrade.

1 Stop Zabbix server

Stop Zabbix server to make sure that no new data is inserted into database.

2 Back up the existing Zabbix database

This is a very important step. Make sure that you have a backup of your database. It will help if the upgrade procedure fails (lack of disk space, power off, any unexpected problem).

3 Back up configuration files, PHP files and Zabbix binaries

Make a backup copy of Zabbix binaries, configuration files and PHP files.

4 Install new server binaries

You may use pre-compiled binaries or compile your own.

5 Review server configuration parameters

Some parameters of zabbix_server.conf might have changed from 1.8, new parameters added. You may want to review them.

6 Upgrade the database

Before you upgrade:

- Make sure the database user has enough permissions (create table, drop table, create index, drop index)
- Make sure you have enough free disk space.

Database upgrade scripts are located in the *upgrades/dbpatches/2.0/<db engine>* directory. Run the scripts:

- MySQL: upgrades/dbpatches/2.0/mysql/patch.sql
- PostgreSQL: upgrades/dbpatches/2.0/postgresql/patch.sql
- Oracle: upgrades/dbpatches/2.0/oracle/patch.sql
- IBM DB2: upgrades/dbpatches/2.0/ibm_db2/patch.sql

These scripts are only for upgrading Zabbix 1.8.x to 2.0! For upgrading from earlier versions first use upgrade scripts from Zabbix 1.6.x or Zabbix 1.8.x.

7 Install new Zabbix web interface

Follow installation instructions.

8 Start new Zabbix binaries

Start new binaries. Check log files to see if the binaries have started successfully.

2.0/manual/installation/upgrade.txt · Last modified: 2013/02/28 18:03 by Alexei

7 Upgrade notes for 2.0.0

1 Requirement changes

- Dropping MSIE 6 and 7 support for Zabbix frontend
- MySQL 5.0
- Windows 2000 (should specify minimum SP level)
- Minimum supported PHP version has been changed to 5.1.6
- Note that with the use of jQuery for the Zabbix frontend browser compatibility might have suffered somewhat - most notably, Konqueror does not work anymore.
- Minimum supported PostgreSQL version has been changed to 8.1
- Frontend now requires:
    - PHP gettext
    - PHP XML Reader
    - PHP XML Writer

2 Frontend specific upgrade notes

User group access property “API access” has been removed. Starting with Zabbix 2.0, all users have full access to the API.

Variables TRIGGER_FALSE_PERIOD and TRIGGER_BLINK_PERIOD in include/defines.inc.php have been removed. These settings may now be configured in *Administration → General → Trigger displaying options*.

Graph item type *Aggregated* has been removed. If such items are present, upgrade procedure will convert them to normal items.

Sorting by 'State' column in *Configuration → Maintenance* has been removed. Sorting by 'IP range' and 'Delay' columns in *Configuration → Discovery* have been removed.

After upgrading, sorting in all locations (tables) will be reset to defaults.

Multiple element selecting in maps while holding down *Shift* was removed. On Mac OSX multiple elements can now be selected by holding down *Command*.

Dropdown choice in *Administration → General* is not remembered anymore.

3 Database upgrading notes

Database upgrade to 2.0 for MySQL will run UPDATE statement that fixes web monitoring item units for all items including the ones with correct unit. This should be harmless and only result in some additional UPDATEs.

For better performance, especially with large databases on MySQL, increasing innodb_buffer_pool_size [http://dev.mysql.com/doc/refman/5.5/en/innodb-parameters.html#sysvar_innodb_buffer_pool_size] before upgrading is highly suggested. Also, disable binlog, if it is not needed, or increase binlog_cache_size [http://dev.mysql.com/doc/refman/5.1/en/replication-options-binary-log.html#sysvar_binlog_cache_size].

During database upgrade with MySQL *ERROR 1436 (HY000): Thread stack overrun* - increase **thread_stack** in

my.cnf. 256K should be enough.

4 Zabbix server related notes

Upgrading to 2.0.0 may increase Zabbix server configuration cache usage, because it now additionally caches general configuration and trigger information.

5 Changed default configuration directories

- **configuration files location**

/etc/zabbix → /usr/local/etc (depends on compile-time installation variable *sysconfdir*)

- **external scripts**

/etc/zabbix/externalscripts → /usr/local/share/zabbix/externalscripts (depends on compile-time installation variable *datadir*)

- **alert scripts**

/home/zabbix/bin → /usr/local/share/zabbix/alertscripts (depends on compile-time installation variable *datadir*)

- **include directories** (recommended)

/etc/zabbix/zabbix_server → /usr/local/etc/zabbix_server.conf.d
/etc/zabbix/zabbix_proxy → /usr/local/etc/zabbix_proxy.conf.d
/etc/zabbix/zabbix_agent → /usr/local/etc/zabbix_agent.conf.d
/etc/zabbix/zabbix_agentd → /usr/local/etc/zabbix_agentd.conf.d

6 Installation procedure changes

Schema file **sqlite.sql** has been renamed to **sqlite3.sql**.

Image file **images_pgsql.sql** has been renamed to **images_postgresql.sql**.

Database creation files have been moved in **database** directory. It contains one directory per supported database type.

Option --with-pgsql for **configure** script has been changed to --with-postgresql.

Directory **misc/conf** was moved to be just **conf** in the top level source directory.

7 Item changes

net.tcp.dns and **net.tcp.dns.query** have been renamed to **net.dns** and **net.dns.record**, respectively. Old syntax still supported as an alias.

All items that return text (character, log, text types of information), including user parameters and external checks, now can return whitespace only as well, setting the return value to an empty string.

Internal item **zabbix[log]** has been removed.

External check parameter handling was changed. Previously, only one parameter was accepted. Starting with Zabbix 2.0, key syntax conforms to other types of items and multiple comma-separated parameters may be passed.

Multi-line values can now be stored for the output of external checks.

Hardcoded first parameter {HOST.CONN} for external checks has been removed and now external check parameters may be fully customised. Upgrade process adds this macro as a first parameter to all existing external checks.

After upgrading, it is recommended to manually review all external checks that have more than one parameter in the key for any possible conversion errors to correct.

The format of simple checks has been changed. The possibility of using IP addresses in simple checks has been added. Database upgrade process converts all existing simple check keys to the new syntax.

A **status** item has been removed. Instead of it a new internal item - **zabbix[host,agent,available]** has been added. The database upgrade process **doesn't convert** all existing 'status' keys and associated triggers to the new syntax, so they have to be converted manually.

8 Upgrade notes for proxies

Older Zabbix proxies (1.6 and 1.8) cannot be used with Zabbix 2.0 server; similarly, a Zabbix 2.0 proxy cannot be used with Zabbix 1.8 or older server. All proxies must be upgraded at the same time as the server.

Zabbix 1.8 proxies may continue collecting data while the server database is upgraded. In this case proxy database must be converted before the new server is started up. Proxy will send all collected and converted values to the server once both server and proxy are upgraded and started up.

9 Upgrade notes for agents

Server parameter has been changed. Entries in it will never be used for active checks, only for passive. Only entries from **ServerActive** will be used for active checks.

Parameter **ServerPort** has been removed. If it will be still specified in the configuration file, agent will not start up.

Parameters **DisableActive** and **DisablePassive** have been removed. Instead, not specifying **ServerActive** will not do any active item processing, and specifying **StartAgents**=0 will disable processing of incoming connections for passive items.
If these parameters will be still specified in the configuration file, agent will not start up.

See also: Version compatibility.

10 Upgrade notes for web monitoring

If a host was assigned to be monitored by a proxy before upgrading to 2.0 and it had a web scenario assigned to it, this web scenario would be performed from the Zabbix server. After upgrade such a web scenario may stop working. After upgrading to 2.0 the proxy that this host is assigned to should be compiled with web monitoring support and be able to access websites, used in the scenario.

11 General notes

{IPADDRESS} macro deprecated, use {HOST.IP}

“Host profiles” were renamed to “host inventory”. New host inventory macros {INVENTORY.*} were introduced. {PROFILE.*} macros are still supported but it's highly recommended to change those to {INVENTORY.*} . See this page for details.

2.0/manual/installation/upgrade_notes.txt · Last modified: 2013/02/28 18:02 by Alexei

8 Upgrade notes for 2.0.1

- In 2.0.0, XML export used a mix of short and long forms for empty tags (both *<tag></tag>* and *<tag/>*). Since 2.0.1, all empty tags use the empty form (*<tag/>*).
- Updating Zabbix agent from 2.0.0 to 2.0.1 on Windows systems might result in historical data loss. See ZBX-5094 [https://support.zabbix.com/browse/ZBX-5094?page=com.atlassian.jira.plugin.system.issuetabpanels:comment-tabpanel&focusedCommentId=59727#comment-59727] for more details.

2.0/manual/installation/upgrade_notes_201.txt · Last modified: 2013/02/28 18:02 by Alexei

9 Upgrade notes for 2.0.3

Accepted data limit of 128MB was introduced when using Zabbix protocol. Any other data (including older Zabbix protocols) stays limited at 16MB.

2.0/manual/installation/upgrade_notes_203.txt · Last modified: 2013/02/28 18:01 by Alexei

10 Upgrade notes for 2.0.4

Requirement changes

Zabbix frontend will now require PHP session auto start disabled (session.auto_start parameter in php.ini file).

API changes

API version has been bumped to 2.0.4 and will match Zabbix version from now on.

2.0/manual/installation/upgrade_notes_204.txt · Last modified: 2013/02/28 18:01 by Alexei

11 Upgrade notes for 2.0.8

Configuration changes

Upgrade to Zabbix 2.0.8 changes the ODBC login timeout for *Database monitor* items from a fixed value, 5 seconds, to the value of configurable “Timeout” parameter in server/proxy configuration file (3 seconds by default).