

Zabbix

“A free of cost monitoring tool for Linux”

Installation with
Webmin, Apache, PHP and MySQL

on

Linux Mandrake 9.2

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1. What is Zabbix?

Zabbix is (free of cost) software that monitors numerous parameters of a network and the servers on that network. Zabbix is a useful tool for monitoring the health and integrity of servers. A flexible notification mechanism allows users to configure e-mail based alerts for virtually any event, allowing fast reaction to server problems. All monitored parameters are stored in a database. Zabbix offers excellent reporting and data visualisation features based on the stored data, making Zabbix useful for capacity planning. Zabbix supports both polling and trapping. All Zabbix reports and statistics, as well as configuration parameters, are accessed through a web-based frontend. The web-based front end means that the health of your servers can be assessed from any location. Properly configured, Zabbix can play an important role in monitoring IT infrastructure for companies with even hundreds of servers to monitor.

2. Getting Started

2.1. Introduction

Zabbix is structured in a client-server architecture. The Zabbix server (zabbix_suckerd) periodically connects to an agent placed on the monitored host, asks for specific information (processor load, free memory, available inodes, etc). The agent provides the server with the requested information and the server stores the received values in the database.

Zabbix also supports the use of a trapping method. In this case, the monitored host sends information to Zabbix server.

Database use plays a very important role in the Zabbix application. The entire history of received parameter values is stored in the database. In addition, the database is the sole source of configuration parameters for the application.

Zabbix performance depends highly on the efficiency and speed of the database used by Zabbix.

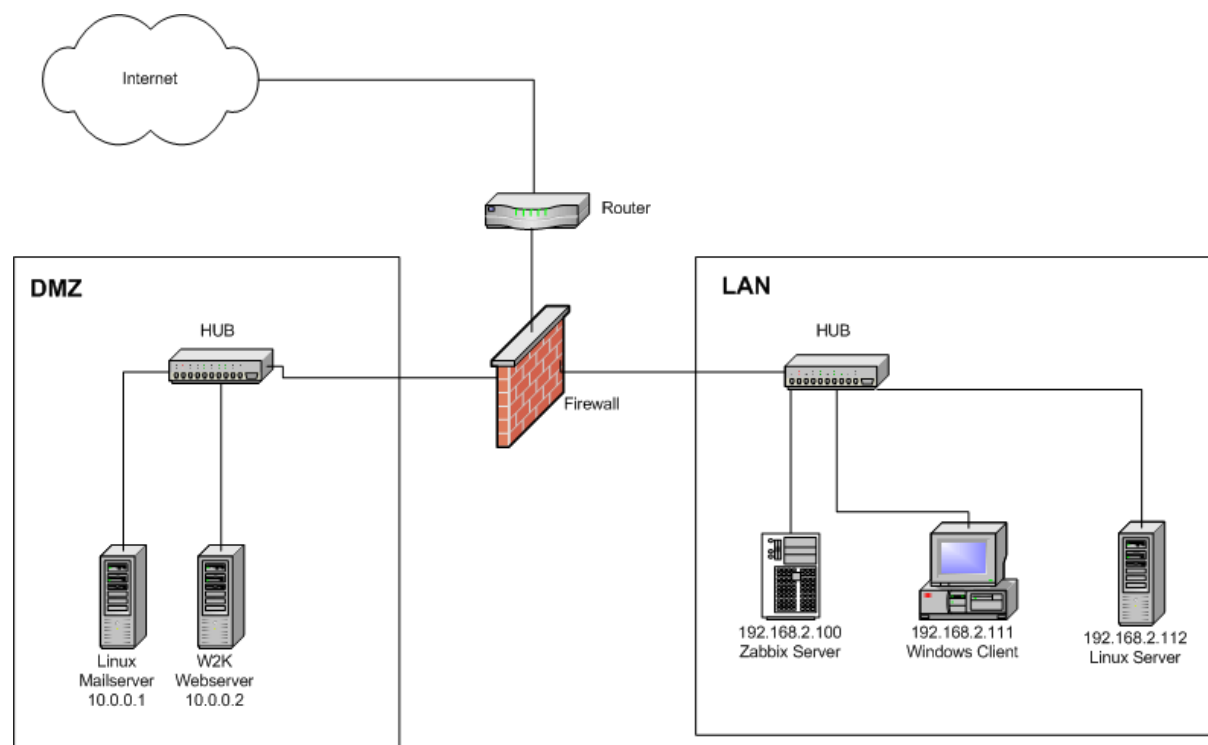
The frontend provides a convenient and platform-independent method for accessing Zabbix. Information provided by the frontend can be either graphical or textual. While graphical representations usually provide the easiest method to understand trends, the text representation of monitored parameters is intended to provide an easy way to export Zabbix data to other analytical tools.

2.2. Conceptual Topology

To keep it simple our “workshop” network consists of few servers and client machines running the Operating Systems Linux Mandrake and Windows 2000. We will install the Zabbix server on a Linux box and the agents on Linux but on Windows WS/Servers as well. If you are using a firewall, please configure it to allow the necessary traffic from the Zabbix agents/clients to the Zabbix server.

This guide contains all the necessary information for installing and understanding the architectural layout of the implementation. It was written with the assumption that you understand how to use Webmin and have a basic understanding of Linux Mandrake. This includes installing Linux Mandrake and RPM packages, editing files, making directories, compiling software and understanding general Unix commands. This guide doesn't explain how to use or configure Zabbix, but information on where to obtain this information can be found in the “Additional information” section.

We will use the following LAN:



2.1. Required Software

For this workshop the download edition Linux Mandrake 9.2 is used. To make it easy for new Linux users and to avoid compiling software we are just using RPM packages from the Linux distribution. This includes Apache, MySQL, PHP and Webmin. For that reason it could be possible that not always the latest software packages are used. You should make use of the Linux Mandrake upgrade tool to get the latest security fixes and updates. The procedure is explained a little bit more detailed in chapter 3.

The only software we have to download is the Zabbix source code. We will compile it later. Please download the latest version here:

<http://sourceforge.net/projects/zabbix>

Please download Linux Mandrake 9.2 ISO images from one of the following FTP server and burn it to 3 CD-ROMs.

Austria

- <ftp://ftp.tugraz.at/mirror/Mandrake-linux/Mandrake/iso/> (Graz)
- <ftp://ftp.univie.ac.at/systems/linux/Mandrake/iso/> (Vienna)

Belgium

- <ftp://ftp.belnet.be/packages/mandrake/iso/>

Brazil

- <ftp://mirror.fis.unb.br/pub/linux/Mandrake/iso/> (Brasilia)

Canada

- <http://gulus.usherb.ca/pub/Mandrake/iso/> (Sherbrooke)

Czech Republic

- <ftp://ftp.fi.muni.cz/pub/linux/mandrake/iso/> (Brno)
- <ftp://ftp.linux.cz/pub/linux/mandrake/iso/> (Brno)
- <ftp://mandrake.contactel.cz/Mandrake/iso/>
- <ftp://sunsite.mff.cuni.cz/OS/Linux/Dist/Mandrake/mandrake/iso/> (Prague)

Denmark

- <ftp://ftp.darenet.dk/pub/linux/mandrake/iso/>
- <ftp://klid.dk/Mandrake/iso/> (Danish only)
- <http://www.klid.dk/sw/Mandrake/iso/> (Danish only)

Estonia

- <ftp://ftp.aso.ee/pub/os/Linux/distributions/mandrake/iso/>

Finland

- <ftp://ftp.song.fi/pub/linux/Mandrake/iso/> (Espoo)

France

- <ftp://ftp.cs.univ-paris8.fr/pub/linux/distributions/mandrake/iso/> (Paris)
- <ftp://ftp.ens-cachan.fr/mirror/Mandrake/iso/> (Cachan)
- <ftp://ftp.lip6.fr/pub/linux/distributions/mandrake/iso/> (Paris)
- ftp://ftp.proxad.net/pub/Distributions_Linux/mandrake/Mandrake/iso/ (Paris)
- <ftp://ftp.u-strasbg.fr/pub/linux/distributions/mandrake/iso/> (Strasbourg)
- <ftp://ftp.univ-lille1.fr/pub/os/linux/distributions/mandrake/iso/> (Lille)
- <http://ftp.club-internet.fr/pub/linux/Mandrake/iso/> (Paris)

Germany

- <ftp://ftp-stud.fht-esslingen.de/pub/Mirrors/Mandrake/iso/> (Esslingen)
- <ftp://ftp.de.uu.net/pub/linux/mandrake/iso/>
- <ftp://ftp.fh-giessen.de/pub/linux/mandrake/iso/> (Giessen)
- <ftp://ftp.leo.org/pub/comp/os/unix/linux/Mandrake/Mandrake/iso/> (Munchen)
- <ftp://ftp.uni-kassel.de/pub/linux/mandrake/iso/> (Kassel)

Greece

- <ftp://ftp.duth.gr/pub/Mandrake/iso/> (Thrace)
- <ftp://ftp.ntua.gr/pub/linux/mandrake/iso/> (Athens)
- <ftp://ftp.physics.auth.gr/pub/mirrors/mandrake/Mandrake/iso/> (Thessaloniki)

Hungary

- <ftp://ftp.prew.hu/pub/Linux/Mandrake/Mandrake/iso/> (Budapest)
- Ireland**
- <ftp://ftp.esat.net/pub/linux/mandrake/iso/>
- Italy**
- <ftp://bo.mirror.garr.it/mirrors/Mandrake/iso/> (Bologna)
- ftp://ftp.edisontel.it/pub/Mandrake_Mirror/Mandrake/iso/
- Malaysia**
- <http://mymirror.asiaosc.org/mandrake/iso/> (Sponsored Mimoms Berhad)
- Netherlands**
- <ftp://ftp.nl.uu.net/pub/linux/mandrake/iso/>
- <ftp://ftp.nluug.nl/pub/os/Linux/distr/Mandrake/Mandrake/iso/>
- <ftp://ftp.snt.utwente.nl/pub/linux/mandrake/iso/>
- <ftp://ftp.surfnet.nl/pub/os/Linux/distr/Mandrake/Mandrake/iso/>
- Norway**
- <ftp://ftp.uninett.no/pub/unix/Linux/Mandrake/Mandrake/iso/> (Oslo)
- Poland**
- <ftp://ftp.chemo.tuniv.szczecin.pl/pub/Linux/mandrake/iso/> (Szczecin)
- <ftp://ftp.ps.pl/mirrors/mandrake/iso/> (Szczecin)
- <ftp://ftp.task.gda.pl/pub/linux/Mandrake/iso/> (Gdansk)
- Russia**
- <ftp://ftp.kiae.su/pub/linux/Mandrake/iso/>
- <ftp://ftp.kiarchive.ru/pub/linux/Mandrake/iso/>
- Slovakia**
- <ftp://spirit.profinet.sk/mirrors/Mandrake/iso/> (Bratislava)
- South Africa**
- <ftp://ftp.is.co.za/linux/distributions/mandrake/iso/>
- Spain**
- <ftp://ftp.cica.es/pub/Linux/Mandrake/iso/> (Sevilla)
- <ftp://ftp.rediris.es/pub/linux/distributions/mandrake/iso/>
- Sweden**
- <ftp://ftp.chello.se/pub/Linux/Mandrake/iso/>
- <ftp://ftp.du.se/pub/os/mandrake/iso/> (Dalarna)
- <ftp://ftp.sunet.se/pub/Linux/distributions/mandrake/iso/>
- Taiwan**
- <ftp://ftp.csie.chu.edu.tw/pub/Linux/Mandrake/Mandrake/iso/>
- <ftp://linux.cdpa.nsysu.edu.tw/pub/mandrake/iso/>
- <ftp://mdk.linux.org.tw/pub/mandrake/iso/>
- United Kingdom**
- <ftp://ftp.mirror.ac.uk/sites/sunsite.uio.no/pub/unix/Linux/Mandrake/Mandrake/iso/> (Canterbury)
- United States**
- <ftp://ftp.cise.ufl.edu/pub/mirrors/mandrake/Mandrake/iso/> (Florida)
- <ftp://ftp.cs.ucr.edu/pub/mirrors/mandrake/Mandrake/iso/> (California)
- <ftp://ftp.cse.buffalo.edu/pub/Linux/Mandrake/mandrake/iso/> (NY)
- <ftp://ftp.ndlug.nd.edu/pub/mandrake/iso/> (Indiana)
- <ftp://ftp.phys.ttu.edu/pub/mandrake/iso/> (Texas)
- <ftp://ftp.uwsg.indiana.edu/linux/mandrake/iso/> (Indiana)
- <ftp://mandrake.mirrors.pair.com/mandrake/iso/> (Pennsylvania)
- <ftp://mirrors.usc.edu/pub/linux/distributions/mandrake/iso/> (California)
- <ftp://mirrors.xmission.com/mandrake/iso/> (Utah)
- <ftp://raven.cslab.vt.edu/pub/linux/mandrake/iso/> (Virginia)

3. Software Installation

3.1. Installing Linux Mandrake 9.2

The easiest way to install Mandrake 9.2 is to boot the system from the first CD-ROM.



When you begin, the first screen that comes up will present some information and give you installation options. Doing nothing will simply begin the installation in normal or “linux” mode.

Your choice of preferred language will affect the language of the documentation, the installer and the system in general. Select first the region you are located in, and then the language you speak.

Before continuing, you should carefully read the terms of the license. It covers the entire *Mandrake Linux* distribution. If you do agree with all the terms in it, check the Accept box. If not, simply turn off your computer.

DrakX now needs to know if you want to perform a new install or an upgrade of an existing *Mandrake Linux* system:

- **Install:** For the most part, this completely wipes out the old system. If you wish to change how your hard drives are partitioned, or change the file system, you should use this option. However, depending on your partitioning scheme, you can prevent some of your existing data from being over-written.
- **Upgrade:** this installation class allows you to update the packages currently installed on your *Mandrake Linux* system. Your current partitioning scheme and user data is not altered. Most of other configuration steps remain available, similar to a standard installation.

After configuring mouse and keyboard, it is now time to choose the security level desired for the machine. As a rule of thumb, the security level should be set higher if the machine will contain crucial data, or if it will be a machine directly exposed to the Internet. The trade-off of a higher security level is generally obtained at the expense of ease of use. If you do not know what to choose, stay with the default option.

Now you need to decide where you want to install the *Mandrake Linux* operating system on your hard drive. I recommend using Custom disk partitioning. Choose this option to manually partition your hard drive. Be careful — it is a powerful but dangerous choice and you can very easily lose all your data.

Follow the partitioning strategy noted below. This configuration is based on a 20 GB hard disk and 128 MB RAM.

Filesystem: swap
Size (MB): 512

Mount point /boot
Size (MB): 15

Mount point /var/www
Size (MB): 4000

Mount point /var
Size (MB): 6000

Mount point /
Size (MB): “Fill to maximum allowable size”

Please be careful when selecting partitions. After formatting, all data on the selected partitions will be deleted and you will not be able to recover it.

It is now time to specify which programs you wish to install on your system. There are thousands of packages available for *Mandrake Linux*, and to make it simpler to manage the packages have been placed into groups of similar applications. We just need a basis system. For that reason you should select the following groups:

- Console Tools
- Development
- KDE Workstation

We will install the rest step by step later.

After installing the packages it is now time to set the root password and you will have to create at least one regular user for yourself — this is the account which you should use for routine, day-to-day use. Although it is very easy to log in as `root` to do anything and everything, it may also be very dangerous! A very simple mistake could mean that your system will not work any more. If you make a serious mistake as a regular user, the worst that will happen is that you will lose some information, but not affect the entire system.

When you have finished adding users, you will be asked to choose a user that can automatically log into the system when the computer boots up. **Please do not use this feature!**

Please use the default features to install the bootloader. As a review, DrakX will present a summary of information it has about your system. You now have to configure the following:

- **Timezone:** By default, DrakX deduces your time zone based on the country you have chosen. You can click on the Configure button here if this is not correct.
- **Graphical Interface:** by default, DrakX configures your graphical interface in 800x600 or 1024x768 resolution. If that does not suit you, click on Configure to reconfigure your graphical interface. After the test you can choose whether you want to have your machine automatically switch to a graphical interface at boot. **Please do not use this feature!**

After that you are asked to update your Linux Mandrake Installation packages. At the time you are installing *Mandrake Linux*, it is likely that some packages have been updated since the initial release. Bugs may have been fixed, security issues resolved. To allow you to benefit from these updates, you are now able to download them from the Internet. Choosing Yes will display a list of places from which updates can be retrieved. You should choose one nearer to you. A package-selection tree will appear: review the selection, and press Install to retrieve and install the selected package(s). We will also use the upgrade feature in Mandrake Control Center later.

Installation is now complete and ready to use. Just click Reboot to reboot the system. The first thing you should see after your computer has finished doing its hardware tests is the bootloader menu, giving you the choice of which operating system to start.

If you have any problems with the Linux Mandrake installation, please use the the following link to get help:

<http://www.mandrakelinux.com/en/fdoc.php3>

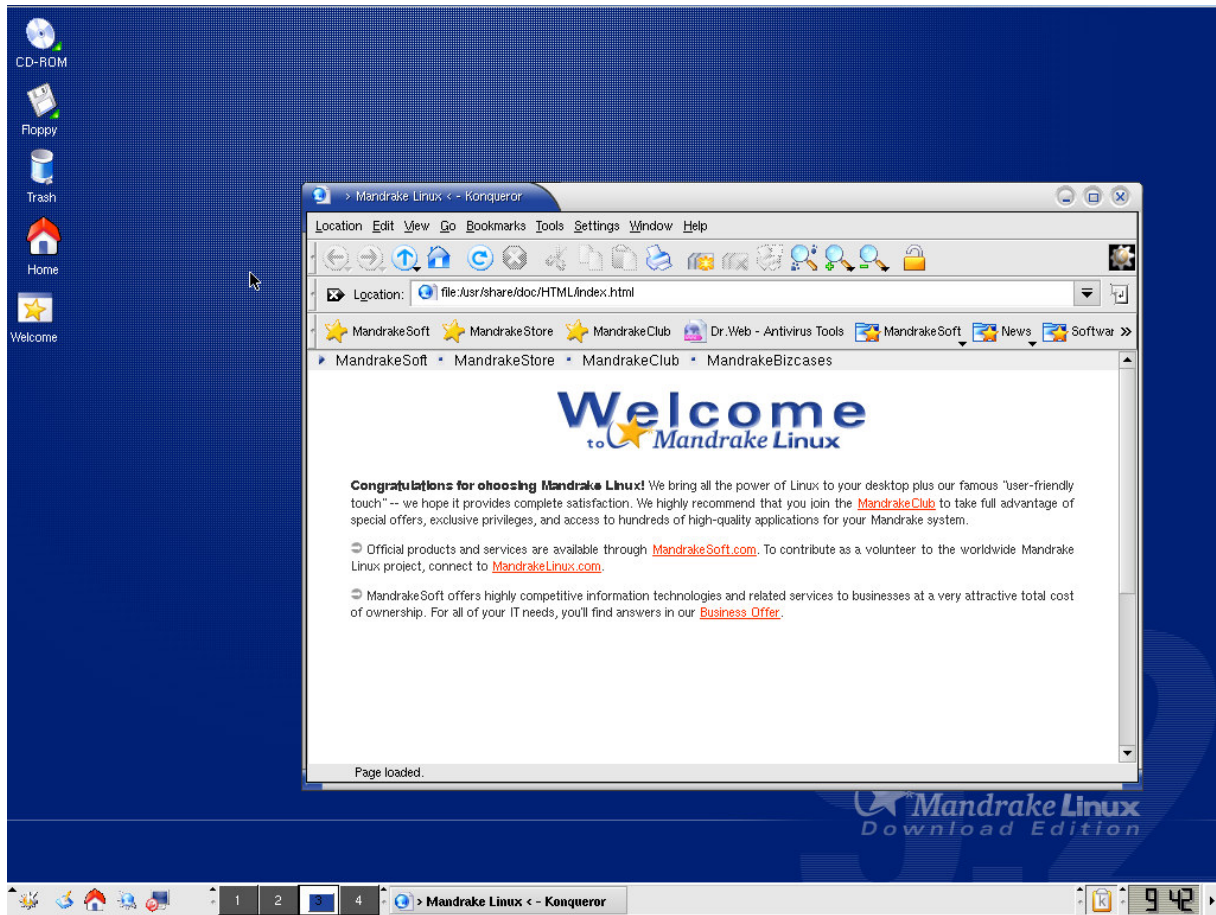
After rebooting the system you will be asked to login with a username and password. You should use the username you installed for day-to-day business. If you need root permissions, you can simply get it by typing the following command:

su

Do not login as root!

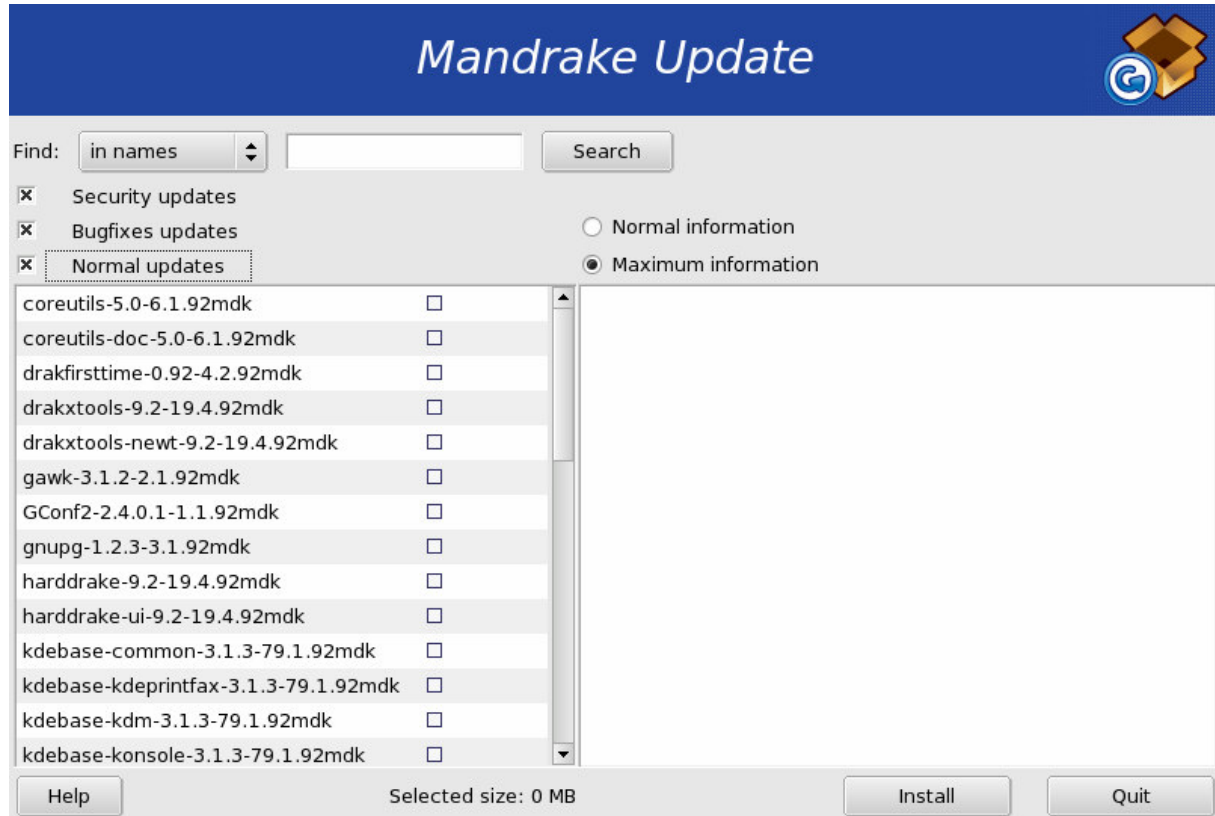
To run KDE and XWindows, you have to start the session with the following command:

xstart

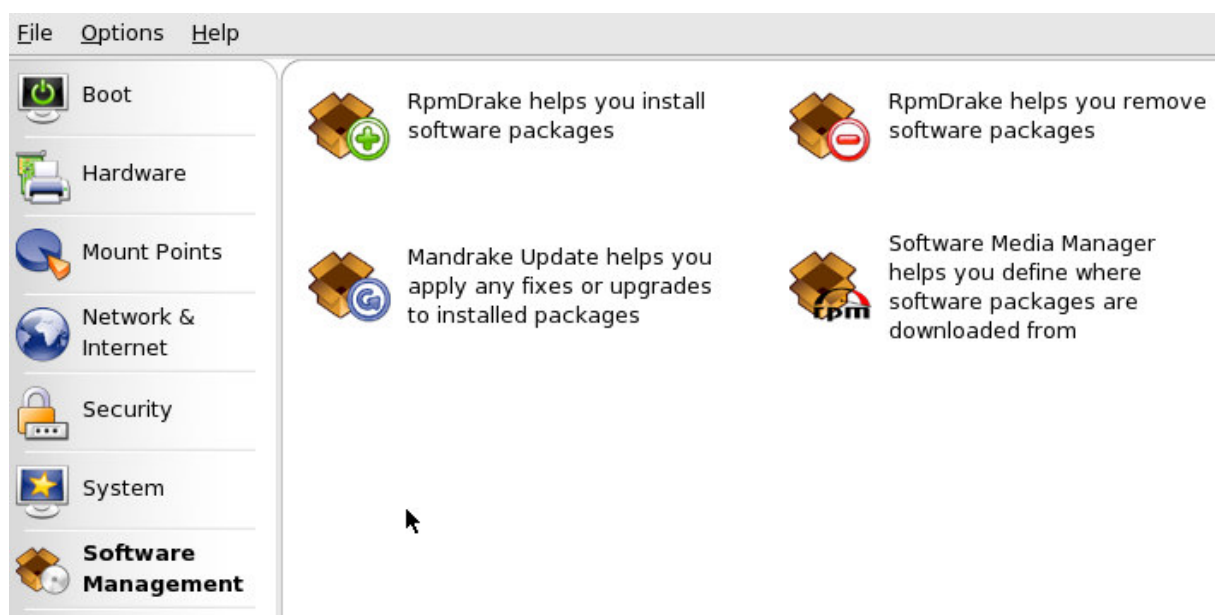


3.2. Installing Updates and additional RPM packages

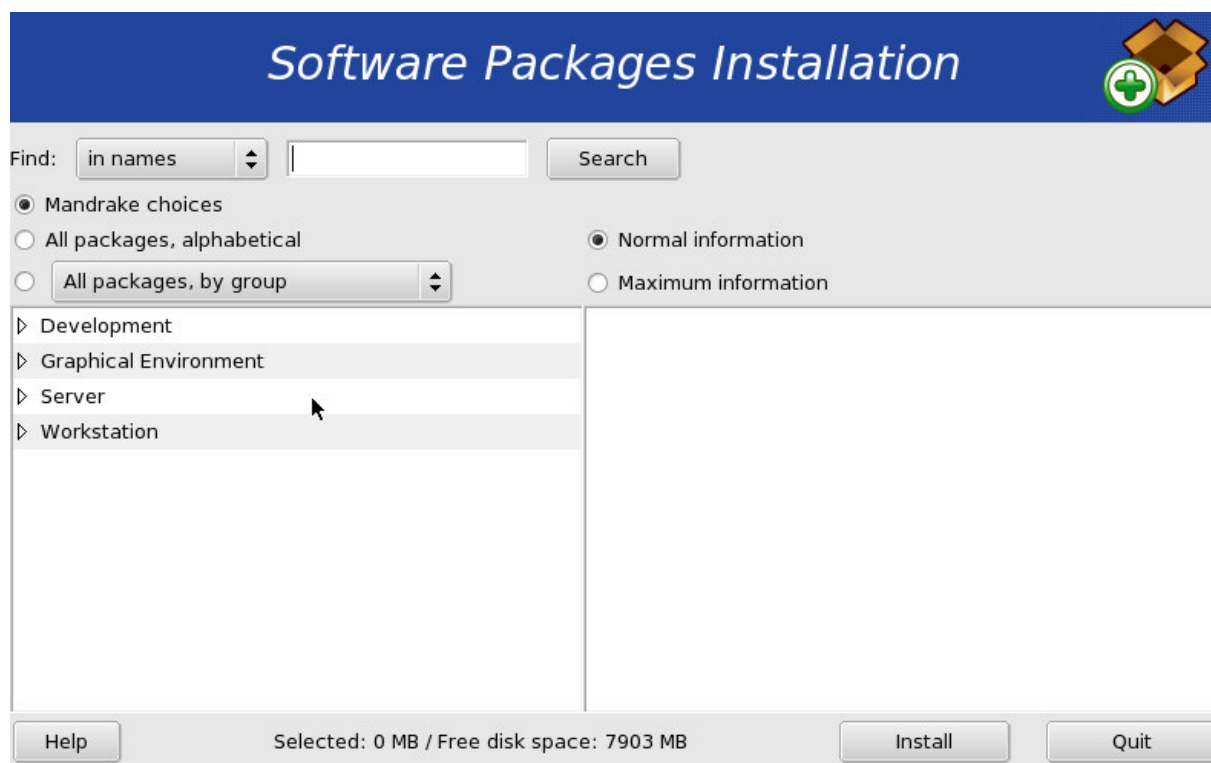
Please use the Mandrake Control Center to perform an update of your software. By clicking on “Mandrake Update” the system will be connected to the nearest FTP server and will get security updates, bugfixes and normal updates.



After doing that you can simply add RPM packages by using the appropriate button. Use the Search button the get the software you would like to install.



Software Packages Installation



The image shows a window titled "Software Packages Installation" with a blue header bar. In the top right corner of the header is a logo consisting of a green circle with a white plus sign and a brown cardboard box. Below the header, there is a search bar with a dropdown menu set to "in names" and a "Search" button. Below the search bar are four radio buttons: "Mandrake choices" (selected), "All packages, alphabetical", "All packages, by group" (with a dropdown arrow), and "Normal information" (selected). Below these are two more radio buttons: "Maximum information". The main area is split into two panes. The left pane is a tree view with four expandable categories: "Development", "Graphical Environment", "Server", and "Workstation". The right pane is empty. At the bottom, there is a status bar with a "Help" button, the text "Selected: 0 MB / Free disk space: 7903 MB", an "Install" button, and a "Quit" button.

Find: in names Search

Mandrake choices
 All packages, alphabetical
 All packages, by group

Normal information
 Maximum information

- Development
- Graphical Environment
- Server
- Workstation

Help Selected: 0 MB / Free disk space: 7903 MB Install Quit

3.3. Installing Webmin

We'll now start to install Webmin. Webmin is a web-based interface for system administration for UNIX. Using any browser that supports tables and forms (and Java for the File Manager module), you can setup user accounts, Apache, DNS, MySQL, file sharing and so on.

Webmin consists of a simple web server, and a number of CGI programs which directly update system files like `/etc/inetd.conf` and `/etc/passwd`. The web server and all CGI programs are written in Perl version 5, and use no non-standard Perl modules. Please get more information about Webmin here: <http://www.webmin.com>

Webmin will play an important role in the installation and maintenance of the Zabbix MySQL database.

Just use the "Search" feature like explained in 3.2 and you will find the package **webmin-1.100-2mdk**. Install the software by clicking on the "**Install**" button. After that you should start the software using the following command from your console:

```
/etc/init.d/webmin start
```

You can now see the Webmin interface in your favourite browser by using the following URLs:

<https://localhost:10000> or <https://IP-address:10000>

3.4. Installing Apache Webserver 2

Use the Software Installation Tool and install the following software. Mandrake will automatically look for dependencies and will ask to install the depended packages.

▽ Search results	<input type="checkbox"/>
apache2-2.0.47-6.3.92mdk	<input type="checkbox"/>
apache2-common-2.0.47-6.3.92mdk	<input type="checkbox"/>
apache2-mod_php-2.0.47_4.3.2-2mdk	<input type="checkbox"/>
apache2-mod_ssl-2.0.47-6.3.92mdk	<input type="checkbox"/>
apache2-modules-2.0.47-6.3.92mdk	<input type="checkbox"/>

Make sure that Apache is started with the following command:

`/etc/init.d/httpd start`

Now you should test if your web server is running properly. If you are using your browser and typing the following URL, you should see the default Apache webpage.

`http://IP-address` or `http://localhost`

Please create a file (**info.php**) with the following content and store it in the directory **/var/www/html** on your web server:

```
<?php
phpinfo ();
?>
```

If you now open the file with your preferred browser (`http://IP-address/info.php`), you should get all information about the Apache PHP support on your web server. If that is working, you are able the run PHP scripts on your server. Apache is finally prepared to run the Zabbix front-end software.

Using the default configuration, your web server's "Home Directory" is **/var/www/html**. We'll later install the Zabbix frontend in the following directory.

```
/var/www/html/zabbix
```

If you like to configure Apache with the Webmin interface, you have to configure this first by using **Server – Apache Webserver - Module Config**. Please modify the settings like this:

Configurable options for Apache Webserver	
Configurable options	
Display virtual servers as	<input checked="" type="radio"/> Icons <input type="radio"/> List
Order virtual servers by	<input checked="" type="radio"/> Order in config files <input type="radio"/> Server name <input type="radio"/> IP Address
Maximum number of servers to display	<input type="text"/>
File to add virtual servers to	<input checked="" type="radio"/> httpd.conf <input type="radio"/> <input type="text"/>
Test config file before applying changes?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Test config file after manual changes?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Test config file after other changes?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Test configuration with command	<input checked="" type="radio"/> apachectl configtest <input type="radio"/> httpd with -D options
Show Apache directive names	<input type="radio"/> Yes <input type="radio"/> No
Base directory for Apache documentation	<input checked="" type="radio"/> Apache website <input type="radio"/> <input type="text"/>
System configuration	
Apache server root directory	<input type="text" value="/etc/httpd"/>
Path to httpd executable	<input type="text" value="/usr/sbin/httpd2"/>
Apache version	<input checked="" type="radio"/> Work out automatically <input type="radio"/> <input type="text"/>
Path to the apachectl command	<input checked="" type="radio"/> None <input type="radio"/> <input type="text"/>
Command to start apache	<input type="radio"/> Use apachectl or start manually <input checked="" type="radio"/> <input type="text" value="/etc/rc.d/init.d/httpd star"/>
Command to stop apache	<input type="radio"/> Use apachectl or kill process <input checked="" type="radio"/> <input type="text" value="/etc/rc.d/init.d/httpd stop"/>
Command to apply configuration	<input checked="" type="radio"/> Use apachectl or HUP signal <input type="radio"/> <input type="text"/>
Path to httpd.conf	<input type="radio"/> Automatic <input checked="" type="radio"/> <input type="text" value="/etc/httpd/2.0/conf/httpd"/>
Path to srm.conf	<input checked="" type="radio"/> Automatic <input type="radio"/> <input type="text"/>
Path to access.conf	<input checked="" type="radio"/> Automatic <input type="radio"/> <input type="text"/>
Path to mime.types	<input type="radio"/> Automatic <input checked="" type="radio"/> <input type="text" value="/etc/mime.types"/>
<input type="button" value="Save"/>	

3.5 MySQL Server installation

Use the Software Installation Tool and install the following software. Mandrake will automatically look for dependencies and will ask to install the depended packages.

▽ Search results	<input type="checkbox"/>
libmysql12-4.0.15-1mdk	<input type="checkbox"/>
MySQL-4.0.15-1mdk	<input type="checkbox"/>
MySQL-client-4.0.15-1mdk	<input type="checkbox"/>
MySQL-common-4.0.15-1mdk	<input type="checkbox"/>
perl-Mysql-1.22_19-8mdk	<input type="checkbox"/>
php-mysql-4.3.2-3mdk	<input type="checkbox"/>

Remark: If you installed already Apache 2 successfully, you just need to install these two packages:

MySQL-4.0.15-1mdk
php-mysql-4.3.2-3mdk

After the installation use your console and start MySQL server like this:

/etc/init.d/mysql start

Webmin will help you later to configure the Zabbix MySQL databases. (See 3.7)

3.6 OpenSSH Server installations

OpenSSH is a free version of the SSH protocol suite of network connectivity tools. OpenSSH encrypts all traffic (including passwords) to effectively eliminate eavesdropping, connection hijacking, and other network-level attacks. Additionally, OpenSSH provides a myriad of secure tunneling capabilities, as well as a variety of authentication methods. We'll use OpenSSH for remote connections to our server.

Use the Software Installation Tool and install the following software. Mandrake will automatically look for dependencies and will ask to install the depended packages.

▸ Search results	<input type="checkbox"/>
kdeutils-kdessh-3.1.3-20mdk	<input type="checkbox"/>
openssh-3.6.1p2-8mdk	<input type="checkbox"/>
openssh-clients-3.6.1p2-8mdk	<input type="checkbox"/>
openssh-server-3.6.1p2-8mdk	<input type="checkbox"/>

After the installation use your console and start SSH server like this:

/etc/init.d/sshd start

3.7. Compiling and Installing Zabbix

3.7.1 How to compile Zabbix?

The Zabbix source code must be compiled for both the server (monitoring machine) as well as the client (monitoring machines). Please make sure to have root privileges for this process.

Zabbix requires other PRM packages we have to install first. Please use the Mandrake Software Package Installation like described in chapter 3.2 and install the following packages:

- php-gd-4.3.2-4mdk
- libnet-snmp50-5.0.9-7.1.92mdk
- libnet-snmp50-devel-5.0.9-7.1.92mdk
- libmysql12-devel-4.0.15-1mdk
- libopenssl0.9.7-static-devel-0.9.7b-4.1.92mdk

It's time to start to compile Zabbix. Please use your download directory and run the following commands:

```
tar xzf zabbix-1.0beta14.tar.gz
chown -R root:root zabbix-1.0beta14
cd zabbix-1.0beta14
./configure --with-mysql --with-net-snmp
make
```

If everything worked fine you should find the following files in **zabbix-1.0beta14/bin**:

zabbix_agent, zabbix_agentd, zabbix_sender, zabbix_suckerd, zabbix_trapper, zabbix_trapperd, ZabbixW32.exe

Please create the directory **/usr/local/zabbix** and copy those files in.

In **zabbix-1.0beta14/misc/conf** you will find the following configuration files:

zabbix_agent.conf zabbix_agentd.conf zabbix_suckerd.conf zabbix_trapper.conf zabbix_trapperd.conf

Please create the directory **/etc/zabbix** and copy those files in.

3.7.2 How to create Zabbix MySQL Database with webmin?

It's now time to install the Snort MySQL databases. That can easily be done by using our Webmin tool to create the needed data.

First of all, we need to create a blank Zabbix database:

zabbix

Open Webmin, goto **Server – MySQL Database Server – Create a new Database** and you will find the following box. Please add the database name **zabbix** and hit “Create”. After that you should find a new blank database (called zabbix) in your MySQL Databases area.

New database options

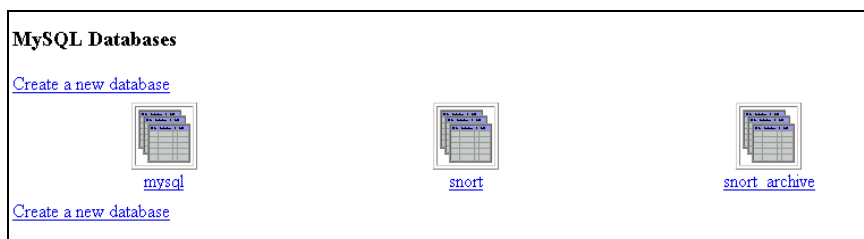
Database name

Initial table None

Initial table structure

Field name	Data type	Type width
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

If you did it correct, you should see a new database called zabbix:



We'll now create the necessary table in the zabbix databases using a SQL script located in the following subdirectory:

/zabbix-1.0beta14/create/mysql/schema.sql

To edit the zabbix database, please click on the entry **zabbix** and use the “**Execute SQL**” button to start the installation.

[Webmin Index](#)
[Module Index](#)
[Help..](#)

Edit Database

snort

This database has no tables.

Fields:

← [Return to database list](#)

[Webmin Index](#)
[Module Index](#)
[Help..](#)

Execute SQL

Enter an SQL command to execute on database snort_test ..

Select an SQL commands file to execute on database snort_test ..

From local file

From uploaded file

Search “From local file” to **/zabbix-1.0beta14/create/mysql/schema.sql** and hit the “Execute” button. If you go back to the “Edit Database” area, you should now see the new tables.

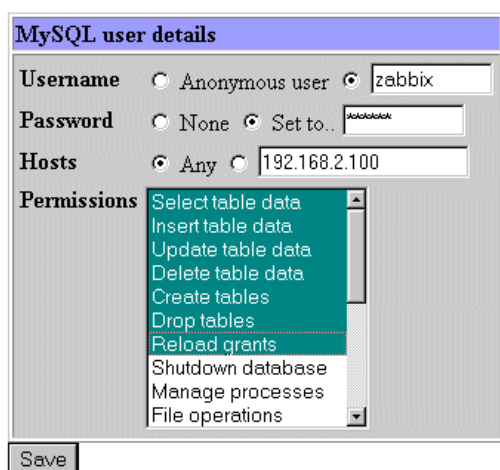
We have to repeat this procedure with the script you’ll find in the following directory:

`/zabbix-1.0beta14/create/data/data.sql`

Doing this, please click on entry **zabbix** again and use the “Execute SQL” button to start the installation of the necessary data.

As you can see, the script **schema.sql** installed the necessary tables and with the script **data.sql** we created the initial data in the Zabbix MySQL database.

Finally we have to create a database user. To do so, please go back to your “MySQL Database Server” and click on “Global Options – User Permissions”. Create a new user and add the following information:



Username: zabbix
 Password: xxxxxx (your password, please make a note)
 Host: 192.168.2.100
 Permissions: SELECT, INSERT, UPDATE, DELETE, CREATE

Do not forget to save everything. You'll need this information later, please make a note.

3.7.3 How to configure and to start Zabbix Server?

To configure Zabbix, we have to modify the zabbix configuration file we copied into the directory **/etc/zabbix**:

Run server process (please do the following configuration just on the server).

Let's start with **/etc/zabbix_suckerd.conf** and **/etc/zabbix_trapperd.conf**. Open the files with your preferred editor and make the following changes:

DBHost=192.168.2.100
DBName=zabbix
DBUser=zabbix
DBPassword=zabbix (use the password you installed in 3.7.2)

Zabbix supports two methods of server role activity. The server may be used in polling mode (Server Polling Method) or the server may be using in a listening mode (Server Listen Method) or both. The standard method utilised is the Server Polling Method in most instances. In this method the server is setup and configured to be aware of clients and then the server pools clients at defined intervals. We will use this method in our workshop. In this case **zabbix_suckerd** initiates connections to a client agent placed on a monitored host (**zabbix_agentd**). The client provides the server with the requested information and the server stores the received values in the MySQL database. This workshop will not describe the Server Listen Method with **zabbix_trapperd**, but you can obtain the information in chapter 6. You can use both methods on the same server as well.

Zabbix daemon processes (zabbix_suckerd and zabbix_trapperd) are protected from being run under root account. Running Zabbix as “root” with special rights is a security risk. For that reason we have to create the dedicated unprivileged user account “zabbix”.

The following Linux command will create this account:

```
useradd zabbix
```

We just have to use this new account to start zabbix_suckerd:

```
su zabbix  
/usr/local/zabbix/zabbix_suckerd
```

That's it. Please check if zabbix_suckerd is really running with the following command:

```
ps -ax | grep zabbix_suckerd
```

You should see something like this:

```
1631 ?    S    0:00 /usr/local/zabbix/zabbix_suckerd  
1633 ?    S    0:00 /usr/local/zabbix/zabbix_suckerd  
1634 ?    S    0:00 /usr/local/zabbix/zabbix_suckerd  
1635 ?    S    0:00 /usr/local/zabbix/zabbix_suckerd  
1636 ?    S    0:00 /usr/local/zabbix/zabbix_suckerd
```

3.7.4 How to configure and to start Zabbix Clients/Agents?

Unix/Linux Clients:

Please copy the compiled files from the Server to the following subdirectories on client machine:

```
Zabbix_agentd.conf  → /etc/zabbix/  
zabbix_agentd      → /usr/local/zabbix
```

Open file **/etc/zabbix_agentd.conf** and change the configuration like this:

```
Server=192.168.2.100  
ListenPort=10005
```

Create a new user account zabbix like described in chapter 3.7.3 and run the agent like this:

```
su zabbix  
/usr/local/zabbix/zabbix_agentd
```

Windows Clients:

Please copy the compiled files from the Server to the following subdirectories on the Windows client machine:

Zabbix_agentd.conf → c:\

ZabbixW32.exe → c:\

Open file c:\zabbix_agentd.conf with your favourite editor and change the configuration like this:

Server=192.168.2.100

ListenPort=10005

Run the following command in the Windows Command box:

ZabbixW32.exe install

ZabbixW32.exe start

If you wish to use configuration file other than c:\zabbix_agentd.conf, you should use the following command for service installation:

ZabbixW32.exe --config <your_configuration_file> install

Here you can find other possible commands:

ZabbixW32.exe check-config	:	Check configuration file and exit
ZabbixW32.exe remove	:	Remove installed Zabbix Win32 Agent service
ZabbixW32.exe help	:	Display help information

5.0. Run the Zabbix PHP-based front-end

The front-end provides a convenient and platform-independent method for accessing ZABBIX. Information provided by the front-end can be either graphical or textual. While graphical representations usually provide the easiest way to understand trends, the text representation of monitored parameter is intended to provide an easy way to export ZABBIX data to other analytical tools.

To run the Web interface we will use Apache already installed in chapter 3.4. Let us make a first test to check if Apache is already running:

```
/etc/init.d/httpd status
```

If Apache is not running, please start it with the following command:

```
/etc/init.d/httpd start
```

Create a new subdirectory as root:

```
mkdir /var/www/html/zabbix
```

Copy the PHP source files you will find in your download directory to the new place and change the file ownership:

```
cp -R /installations/zabbix-1.0beta14/frontends/php/* /var/www/html/zabbix  
cd /var/www/html  
chown -R zabbix:zabbix zabbix/
```

Change the values in `/var/www/html/include/db.inc.php`:

```
$DB_TYPE      ="MYSQL";  
$DB_SERVER    ="192.168.2.100";  
$DB_DATABASE  ="zabbix";  
$DB_USER      ="zabbix";  
$DB_PASSWORD  ="zabbix"; (use the password you configured in chapter 3.7.2)
```

Do not forget to save the new settings! Finally we have to configure Apache to use a new “Document Root Directory”. Please use Webmin to do the following changes in your favourite browser:

- `https://192.168.2.100:10000`
- In the Webmin interface click on Servers – Apache Webserver – Default Server
- Go to Documents Options and change the Document Root Directory like this:
`/var/www/html/zabbix`

[Webmin Index](#)
[Module Index](#)

Document Options

For default server

Document Options for default server

Document root directory Default ...

User WWW directory Default

All users accessible

All users except ...

Only users ...

Per-directory options file Default

Directory options Default Selected below..

Option	Set for directory	Merge with parent
Execute CGI programs	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Follow symbolic links	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Server-side includes and execs	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Server-side includes	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Generate directory indexes	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Generate Multiviews	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable
Follow symbolic links if owners match	<input type="radio"/> Yes <input checked="" type="radio"/> No	<input type="radio"/> Enable <input type="radio"/> Disable

Generate MD5 digests Yes No Default

Generate ETag header from Default Selected attributes : INode number Last modified time File size

Virtual server path Default ...

Error message footer Email address Server name None Default

The rest can stay like it is. Please do not forget to save and restart Apache to re-read the configuration.

You now can use the Web interface by typing the following URL in your browser:

<http://192.168.2.100>

LATEST VALUES	TRIGGERS	QUEUE	ALARMS	ALERTS	NETWORK MAPS	GRAPHS	SCREENS	IT SERVICES
[HOME]	ABOUT	STATUS OF ZABBIX			AVAILABILITY REPORT			
Login								
Login name				<input type="text"/>				
Password				<input type="password"/>				
<input type="button" value="Enter"/>								
ZABBIX Copyright 2000-2004 by Alexei Vladishev								Connected as guest

Please use the default Login name “admin” without a password to enter the Admin Interface.

This finishes the installation workshop. To get more information, how to setup and use Zabbix, please read the Zabbix documentation you will find in chapter 6.0.

Let us create a new Host just to see if Zabbix is working properly. As an example we will create a new (Windows) host (192.168.2.111) in the Web interface. Make sure you have the Windows Agent already configured like explained in chapter 3.7.4.

Please login as admin and create a new host clicking on “Hosts”. Add the following information into the Host table:

Host group	
Group name	<input type="text"/>
Hosts	STANDALONE UNIX_ZABBIX_AGENT WIN32_ZABBIX_AGENT
<input type="button" value="add group"/>	

Host	
Host	<input type="text" value="192.168.2.111"/>
Groups	Templates
New group	<input type="text"/>
Use IP address	<input type="checkbox"/>
Port	<input type="text" value="10005"/>
Status	Monitored
Use the host as a template	WIN32_ZABBIX_AGENT
<input type="button" value="add"/>	

If you clicked on the “add” button and everything worked fine, you should find a new entry in the hosts table. If you click on “Latest values” and on 192.168.2.111, you will see the information the client/agent sent to the server.

10005	192.168.2.111	10005	Monitored
-------	-------------------------------	-------	---------------------------

6.0. Trouble shouting and additional help

If you have any problems with the Zabbix installation, please check this:

- Is your web server running? (/etc/init.d/httpd status)
- Does your web server have PHP support?
- Is the MySQL server running (check with Webmin)?
- Did you do a typing mistake while configuring **zabbix_XXX.conf** files?
- Are the MySQL passwords, user permissions correct? (Double-check with Webmin)

Check if all files are stored in the recommended directories:

- configuration files in /etc/zabbix
- binaries in /usr/local/zabbix

Check if the processes are running on the server and on the client:

- server - ps -ax | grep zabbix_suckerd
- client - ps -ax | grep zabbix_agentd

Other important reading and websites to visit:

Zabbix Home Page	http://www.zabbix.com/
Zabbix Support	http://www.zabbix.com/#support
Zabbix User Manual	http://www.zabbix.com/#manual
Zabbix Forum	http://sourceforge.net/forum/forum.php?forum_id=74299
Zabbix News	http://sourceforge.net/news/?group_id=23494
Linux Mandrake	http://www.mandrakesoft.com/
Linux Mandrake Manual	http://doc.mandrakelinux.com/MandrakeLinux/92/en/Discovery.html/