

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

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1 Login and configuring user

Overview

In this section you will learn how to log in and set up a system user in Zabbix.

Login



This is the Zabbix “Welcome” screen. Enter the user name **Admin** with password **zabbix** to log in as a Zabbix superuser.

When logged in, you will see 'Connected as Admin' in the lower right corner of the page. Access to *Configuration* and *Administration* menus will be granted.

Protection against brute force attacks

In case of five consecutive failed login attempts, Zabbix interface will pause for 30 seconds in order to prevent brute force and dictionary attacks.

The IP address of a failed login attempt will be displayed after a successful login.

Adding user

To view information about users, go to *Administration* → *Users* and select *Users* in the dropdown.

<input type="checkbox"/>	Alias	Name	Surname	User type	Groups	Is online?	Login	Frontend access	Debug mode	Status
<input type="checkbox"/>	Admin	Zabbix	Administrator	Zabbix Super Admin	Zabbix administrators	Yes (Wed, 04 Jan 2012 15:39:51 +0200)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	guest	Default	User	Zabbix User	Guests	Yes (Wed, 04 Jan 2012 15:33:42 +0200)	Ok	System default	Disabled	Enabled

Initially there are only two users defined in Zabbix.

- 'Admin' user is a Zabbix superuser, which has full permissions.
- 'Guest' user is a special default user. If you are not logged in, you are accessing Zabbix with “guest” permissions. By default, “guest” has no permissions on Zabbix objects.

To add a new user, click on *Create user*.

In the new user form, make sure to add your user to one of the existing user groups, for example 'Network administrators'.

The screenshot shows the 'User' tab of the Zabbix user creation form. The form contains the following fields and controls:

- Alias:** user
- Name:** New
- Surname:** User
- Password:** masked with dots
- Password (once again):** masked with dots
- Groups:** Network administrators
- Language:** English (en_GB)
- Theme:** System default
- Auto-login:**
- Auto-logout (min 90 seconds):** 90
- Refresh (in seconds):** 30
- Rows per page:** 50
- URL (after login):** (empty)

Buttons: Add, Delete selected, Save, Cancel

By default, new users have no media (notification delivery methods) defined for them. To create one, go to the 'Media' tab and click on *Add*.

New media [?]

Type:

Send to:

When active:

Not classified
 Information
 Warning
 Average
 High
 Disaster

Use if severity: [All checked]

Status:

In this pop-up, enter an e-mail address for the user.

You can specify a time period when the medium will be active (see [Time period specification](#) page for description of the format), by default a medium is always active. You can also customise [trigger severity](#) levels for which the medium will be active, but leave all of them enabled for now.

Click on *Add*, then click *Save* in the user properties form. The new user appears in the userlist.

<input type="checkbox"/>	Alias	Name	Surname	User type	Groups	Is online?	Login	Frontend access	Debug mode	Status
<input type="checkbox"/>	Admin	Zabbix	Administrator	Zabbix Super Admin	Zabbix administrators	Yes (Wed, 04 Jan 2012 15:42:02 +0200)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	guest	Default	User	Zabbix User	Guests	Yes (Wed, 04 Jan 2012 15:33:42 +0200)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	user	New	User	Zabbix User	Network administrators	No	Ok	System default	Disabled	Enabled

Adding permissions

By default, a new user has no permissions to access hosts. To grant the user rights, click on the group of the user in the *Groups* column (in this case - 'Network administrators'). In the group properties form, go to the *Permissions* tab.

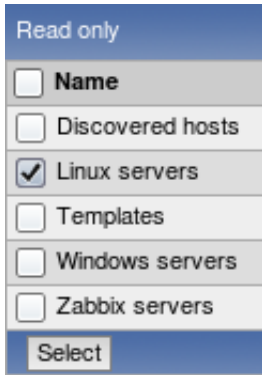
Permissions

Composing permissions

Read-write Read only Deny

[Add] [Delete selected] [Add] [Delete selected] [Add] [Delete selected]

This user is to have read-only access to *Linux servers* group, so click on *Add* below the 'Read only' listbox.



Read only	
<input type="checkbox"/>	Name
<input type="checkbox"/>	Discovered hosts
<input checked="" type="checkbox"/>	Linux servers
<input type="checkbox"/>	Templates
<input type="checkbox"/>	Windows servers
<input type="checkbox"/>	Zabbix servers
Select	

In this pop-up, mark the checkbox next to 'Linux servers', then click *Select*. *Linux servers* should be displayed in the respective box. In the user group properties form, click *Save*.

In Zabbix, access rights to hosts are assigned to user groups, not individual users.

Done! You may try to log in using the credentials of the new user.

2.0/manual/quickstart/login.txt · Last modified: 2012/01/04 16:00 by martins-v

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2 New host

Overview

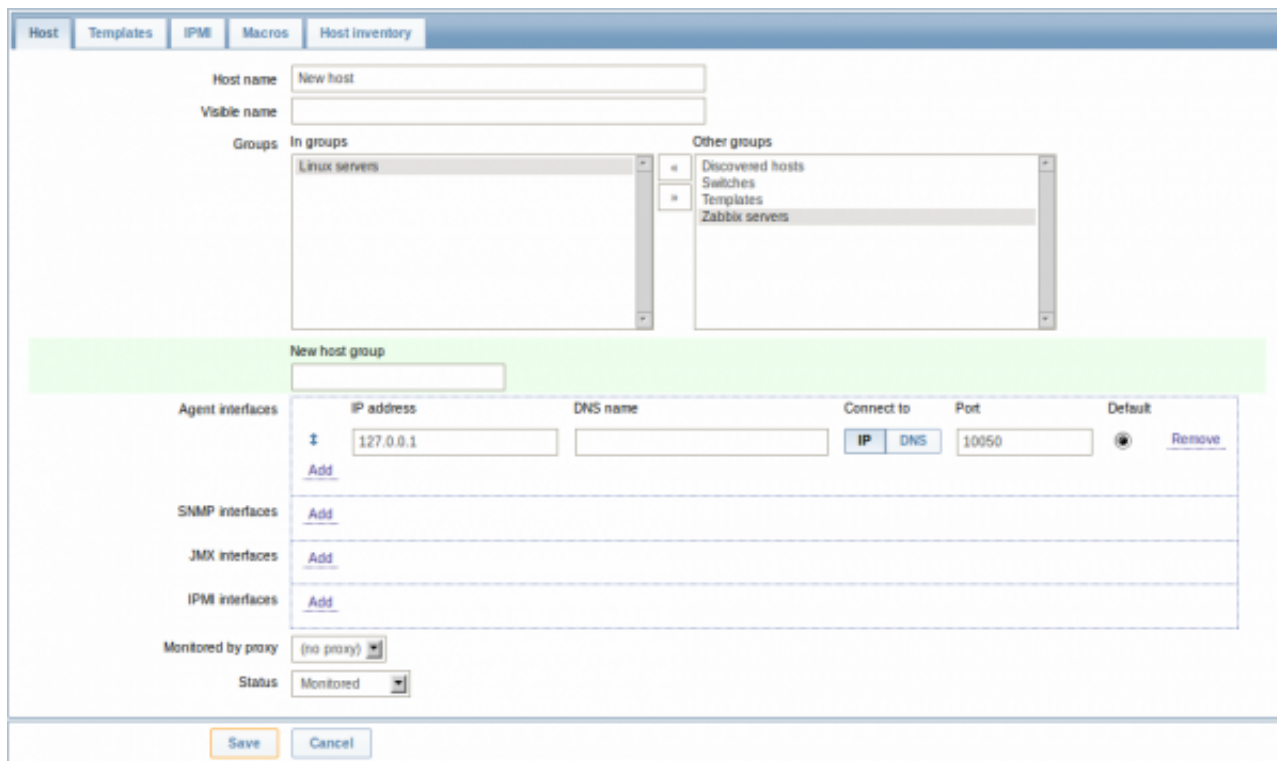
In this section you will learn how to set up a new host.

A host in Zabbix is a networked entity (physical, virtual) that you wish to monitor. The definition of what can be a “host” in Zabbix is quite flexible. It can be a physical server, a network switch, a virtual machine or some application.

Adding host

Information about configured hosts in Zabbix is available in *Configuration* → *Hosts*. There is already one pre-defined host, called 'Zabbix server', but we want to learn adding another.

To add a new host, click on *Create*. This will present us with a host configuration form.



The screenshot shows the 'New host' configuration form in Zabbix. The form is titled 'Host' and has tabs for 'Templates', 'IPMI', 'Macros', and 'Host inventory'. The 'Host name' field is filled with 'New host'. The 'Visible name' field is empty. The 'Groups' section has two selectboxes: 'In groups' (containing 'Linux servers') and 'Other groups' (containing 'Discovered hosts', 'Switches', 'Templates', and 'Zabbix servers'). Below these is a 'New host group' field. The 'Agent interfaces' section has a table with columns: IP address, DNS name, Connect to, Port, and Default. The first row has '127.0.0.1' in the IP address field, 'IP' selected in the Connect to dropdown, and '10050' in the Port field. There are 'Add', 'Remove', and 'DNS' buttons. Below this are sections for 'SNMP interfaces', 'JMX interfaces', and 'IPMI interfaces', each with an 'Add' button. The 'Monitored by proxy' dropdown is set to '(no proxy)' and the 'Status' dropdown is set to 'Monitored'. At the bottom are 'Save' and 'Cancel' buttons.

The bare minimum to enter here is:

Host name

- Enter a host name. Alpha-numericals, spaces and underscores are allowed.

Groups

- Select one or several groups from the right hand side selectbox and click on « to move them to the 'In groups' selectbox.

All access permissions are assigned to host groups, not individual hosts. That is why a host must belong to at least one group.

IP address

- Enter the IP address of the host. Note that if this is the Zabbix server IP address, it must be specified in the Zabbix agent configuration file 'Server' directive.

Other options will suit us with their defaults for now.

When done, click *Save*. Your new host should be visible in the hostlist.

If the *Z* icon in the *Availability* column is red, there is some error with communication – move your mouse cursor over it to see the error message. If that icon is gray, no status update has happened so far. Check that Zabbix server is running, and try refreshing the page later as well.

2.0/manual/quickstart/host.txt · Last modified: 2012/06/08 10:25 by martins-v

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3 New item

Overview

In this section you will learn how to set up an item.

Items are the basis of gathering data in Zabbix. Without items, there is no data – because only an item defines a single metric or what data to get off of a host.

Adding item

All items are grouped around hosts. That is why to configure a sample item we go to *Configuration* → *Hosts* and find the 'New host' we have created.

The *Items* link in the row of 'New host' should display a count of '0'. Click on the link, and then click on *Create item*. This will present us with an item definition form.

Item :

Host

Name

Type

Key

Host interface

Type of information

Units

Use custom multiplier

Update interval (in sec)

Interval	Period	Action
No flexible intervals defined.		

New flexible interval Interval (in sec) Period

Keep history (in days)

Keep trends (in days)

Store value

Show value [show value mappings](#)

New application

Applications

Populates host inventory field

Description

Status

For our sample item, the essential information to enter is:

Name

- Enter *CPU Load* as the value. This will be the item name displayed in lists and elsewhere.

Key

- Enter *system.cpu.load* as the value. This is a technical name of an item that identifies the type of information that will be gathered. The particular key is just one of pre-defined keys that come with Zabbix agent.

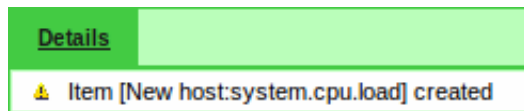
Type of information

- Select *Numeric (float)* here. This attribute defines the format of expected data.

You may also want to reduce the amount of days item history will be kept, to 7 or 14. This is good practice to relieve the database from keeping lots of historical values.

Other options will suit us with their defaults for now.

When done, click *Save*. The new item should appear in the itemlist. Click on *Details* above the list to view what exactly was done.



Seeing data

With an item defined, you might be curious if it is actually gathering data. For that, go to *Monitoring* → *Latest data*, click on the + before - **other** - and expect your item to be there and displaying data.

Name	Last check	Last value	Change	History
- other - (1 Items)				
CPU Load	05 Jan 2012 14:48:38	0.47	+0.37	Graph

With that said, first data may take up to 60 seconds to arrive. That, by default, is how often the server reads configuration changes and picks up new items to execute.

If you see no value in the 'Change' column, maybe only one value has been received so far. Wait 30 seconds for another value to arrive.

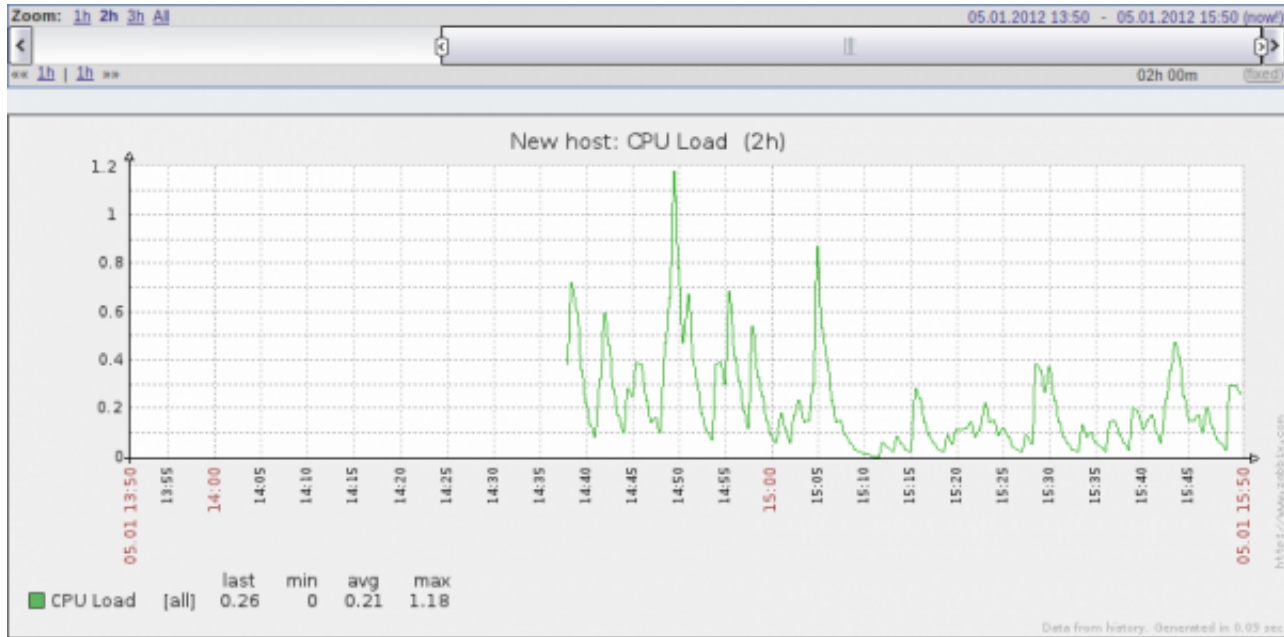
If you do not see information about the item as in the screenshot, make sure that:

- you entered item 'Key' and 'Type of information' fields exactly as in the screenshot
- both agent and server are running
- host status is 'Monitored' and its availability icon is green
- host is selected in the host dropdown, item is active

Graphs

With the item working for a while, it might be time to see something visual. Simple graphs are available for any monitored numeric item without any additional configuration. These graphs are generated on runtime.

To view the graph, go to *Monitoring* → *Latest data* and click on the 'Graph' link next to the item.



2.0/manual/quickstart/item.txt · Last modified: 2012/06/08 10:34 by martin-v

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4 New trigger

Overview

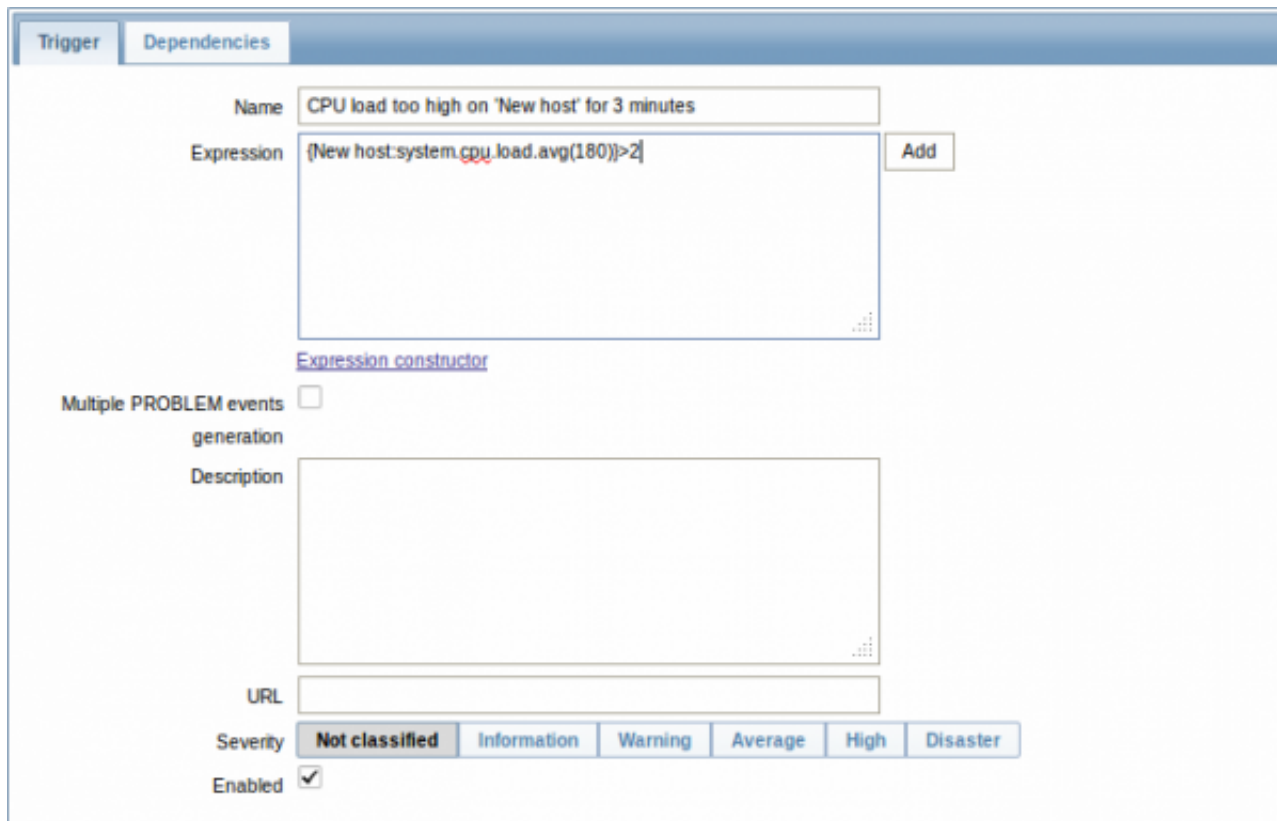
In this section you will learn how to set up a trigger.

Items only collect data. To automatically evaluate incoming data we need to define triggers. A trigger contains an expression that defines a threshold of what is an acceptable level for the data.

If that level is surpassed by the incoming data, a trigger will “fire” or go into a 'Problem' state – letting us know that something has happened that may require attention. If the level is acceptable again, trigger returns to an 'Ok' state.

Adding trigger

To configure a trigger for our item, go to *Configuration* → *Hosts*, find 'New host' and click on *Triggers* next to it and then on *Create trigger*. This presents us with a trigger definition form.



The screenshot shows the Zabbix trigger configuration form. The form has two tabs: "Trigger" (selected) and "Dependencies". The "Name" field contains "CPU load too high on 'New host' for 3 minutes". The "Expression" field contains "[New host:system.cpu.load.avg(180)]>2". There is an "Add" button next to the expression field. Below the expression field is a link for "Expression constructor". There is a checkbox for "Multiple PROBLEM events generation" which is currently unchecked. The "Description" field is empty. The "URL" field is empty. The "Severity" field has a dropdown menu with options: "Not classified", "Information", "Warning", "Average", "High", and "Disaster". The "Enabled" checkbox is checked.

For our trigger, the essential information to enter here is:

Name

- Enter *CPU load too high on 'New host' for 3 minutes* as the value. This will be the trigger name displayed in lists and elsewhere.

Expression

- Enter: {New host:system.cpu.load.avg(180)}>2

This is the trigger expression. Make sure that the expression is entered right, down to the last symbol. The item key here (system.cpu.load) is used to refer to the item. This particular expression basically says that the problem threshold is exceeded when the CPU load average value for 3 minutes is over 2. You can learn more about the [syntax of trigger expressions](#).

When done, click *Save*. The new trigger should appear in the trigger list.

Displaying trigger status

With a trigger defined, you might be interested to see its status.

For that, go to *Monitoring* → *Triggers*. After 3 minutes or so (we asked to evaluate a 3-minute average after all) your trigger should appear there, presumably with a green 'OK' flashing in the 'Status' column.

+	Severity	Status	Info	Last change ↓	Age	Duration	Acknowledged	Host	Name	Comments
	Not classified	OK		06 Jan 2012 14:06:38	9m 43s		Acknowledged	New host	CPU load too high on 'New host' for 3 minutes	Add

The flashing indicates a recent change of trigger status, one that has taken place in the last 30 minutes.

If a red 'PROBLEM' is flashing there, then obviously the CPU load has exceeded the threshold level you defined in the trigger.

2.0/manual/quickstart/trigger.txt · Last modified: 2012/06/08 10:36 by martins-v

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5 Receiving problem notification

Overview

In this section you will learn how to set up alerting in the form of notifications in Zabbix.

With items collecting data and triggers designed to “fire” upon problem situations, it would also be useful to have some alerting mechanism in place that would notify us about important events even when we are not directly looking at Zabbix front-end.

This is what notifications do. E-mail being the most popular delivery method for problem notifications, we will learn how to set up an e-mail notification.

E-mail settings

Initially there are several predefined notification [delivery methods](#) in Zabbix. [E-mail](#) is one of those.

To configure e-mail settings, go to *Administration* → *Media types* and click on *Email* in the list of pre-defined media types.

Media types				
Displaying 1 to 3 of 3 found				
<input type="checkbox"/>	Description ↕	Type	Used in actions	Details
<input type="checkbox"/>	Email	Email	-	SMTP server: "mail.company.com", SMTP helo: "company.com", SMTP email: "zabbix@company.com"
<input type="checkbox"/>	Jabber	Jabber	-	Jabber identifier: "jabber@company.com"
<input type="checkbox"/>	SMS	SMS	-	GSM modem: "/dev/ttyS0"

This will present us with the e-mail settings definition form.

Media	
Description	<input type="text" value="Email"/>
Type	<input type="text" value="Email"/>
SMTP server	<input type="text" value="mail.company.com"/>
SMTP helo	<input type="text" value="company.com"/>
SMTP email	<input type="text" value="zabbix@company.com"/>
<input type="button" value="Save"/> <input type="button" value="Delete"/> <input type="button" value="Cancel"/>	

Set the values of SMTP server, SMTP helo and SMTP e-mail to the appropriate for your environment.

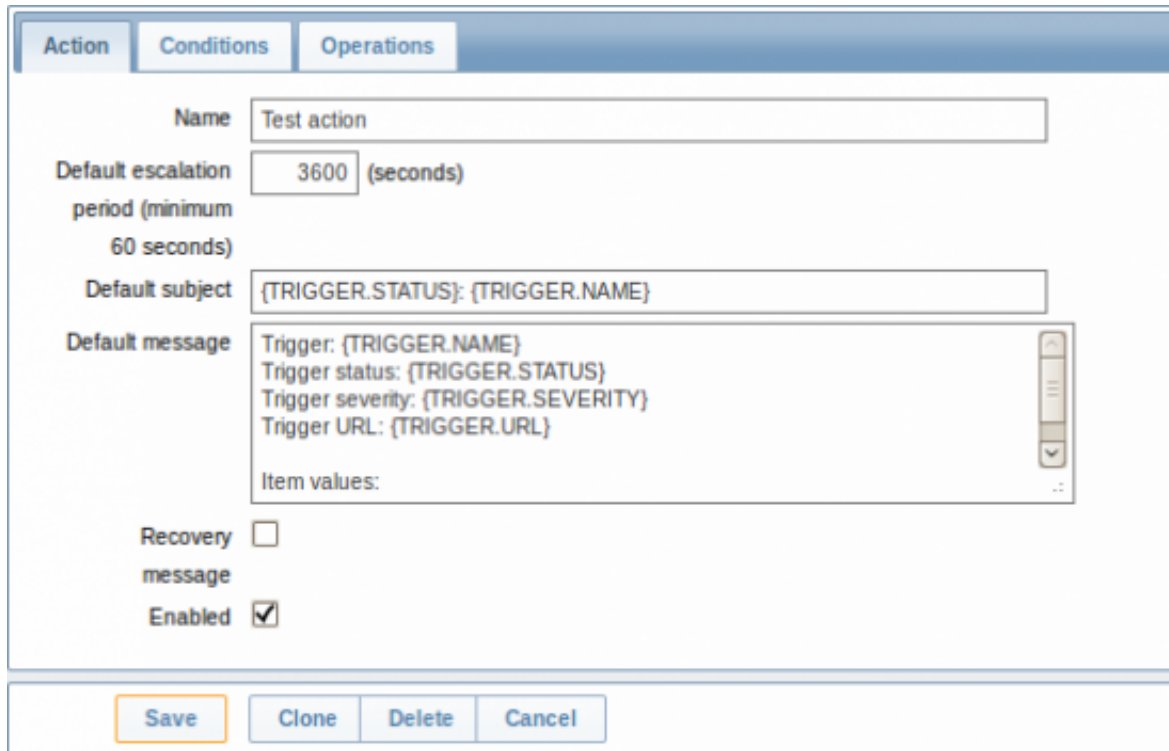
'SMTP email' will be used as the 'From' address for the notifications sent from Zabbix.

Press *Save* when ready.

Now you have configured 'Email' as a working media type. A media type must be linked to users by defining specific delivery addresses (like we did when [configuring a new user](#)), otherwise it will not be used.

New action

Delivering notifications is one of the things [actions](#) do in Zabbix. Therefore, to set up a notification, go to *Configuration* → *Actions* and click on *Create action*.



The screenshot shows the 'Create Action' form in Zabbix, with the 'Conditions' tab selected. The form contains the following fields and options:

- Name:** Test action
- Default escalation period (minimum 60 seconds):** 3600 (seconds)
- Default subject:** {TRIGGER.STATUS}: {TRIGGER.NAME}
- Default message:** Trigger: {TRIGGER.NAME}
Trigger status: {TRIGGER.STATUS}
Trigger severity: {TRIGGER.SEVERITY}
Trigger URL: {TRIGGER.URL}
Item values:
- Recovery message:**
- Enabled:**

At the bottom of the form, there are four buttons: Save, Clone, Delete, and Cancel.

In this form, enter a name for the action.

{TRIGGER.STATUS} and {TRIGGER.NAME} macros (or variables), visible in the *Default subject* and *Default message* fields, will be replaced with the actual trigger status and trigger name values.

In the most simple case, if we do not add any more specific [conditions](#), the action will be taken upon any trigger change from 'Ok' to 'Problem'.

We still should define what the action should do – and that is done in the *Operations* tab. Click on *New* in there, which opens a new operation form.

Here, click on *Add* in the *Send to Users* block and select the user ('user') we have defined. Select 'Email' as the value of *Send only to*. When done with this, click on *Add*.

That is all for a simple action configuration, so click *Save* in the action form.

Receiving notification

Now, with delivering notifications configured it would be fun to actually receive one. To help with that, we might on purpose increase the load on our host – so that our trigger “fires” and we receive a problem notification.

Open the console on your host and run:

```
cat /dev/urandom | md5sum
```

You may run one or several of these processes [<http://en.wikipedia.org/wiki/Md5sum>].

Now go to *Monitoring* → *Latest data* and see how the values of 'CPU Load' have increased. Remember, for our trigger to *fire*, the 'CPU Load' value has to go over '2' for 3 minutes running. Once it does:

- in *Monitoring* → *Triggers* you should see the trigger with a flashing 'Problem' status
- you should receive a problem notification in your e-mail

If notifications do not work:

- verify once again that both the e-mail settings and the action have been configured properly
- make sure the user you created has at least read permissions on the host which generated the event, as noted in the *[Adding user](#)* step. The user, being part of the 'Network administrators' user group must have at least read access to 'Linux servers' host group that our host belongs to.
- Additionally, you can check out the action log by going to *Administration* → *Audit*, and choosing *Actions* in the dropdown, located in the upper right corner.

2.0/manual/quickstart/notification.txt · Last modified: 2012/03/27 16:18 by tomtomdev

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6 New template

Overview

In this section you will learn how to set up a template.

Previously we learned how to set up an item, a trigger and how to get a problem notification for the host.

While all of these steps offer a great deal of flexibility in themselves, it may appear like a lot of steps to take if needed for, say, a thousand hosts. Some automation would be handy.

This is where templates come to help. Templates allow to group useful items, triggers and other entities so that those can be reused again and again by applying to hosts in a single step.

When a template is linked to a host, the host inherits all entities of the template. So, basically a pre-prepared bunch of checks can be applied very quickly.

Adding template

To start working with templates, we must first create one. To do that, in *Configuration* → *Templates* click on *Create*. This will present us with a template configuration form.

The screenshot shows the 'Create Template' form in Zabbix. At the top, there are three tabs: 'Template' (selected), 'Linked templates', and 'Macros'. Below the tabs, there are two input fields: 'Template name' with the value 'New template' and 'Visible name' which is empty. Under the 'Groups' section, there are two list boxes. The left one is labeled 'In Groups' and contains 'Templates'. The right one is labeled 'Other Groups' and contains 'Custom Templates', 'Discovered hosts', 'Linux servers', 'Netherlands', 'SNMP devices', 'Windows servers', and 'Zabbix servers'. Below these is a 'New group' input field. The 'Hosts / In' section has a list box labeled 'Templates' which is empty. To its right, there is a dropdown menu labeled 'Other | Group' with 'Custom Templates' selected, and a list box containing 'C_Templates', 'C_Template_Linux', and 'C_Template_Linux2'.

The required parameters to enter here are:

Template name

- Enter a template name. Alpha-numericals, spaces and underscores are allowed.

Groups

- Select one or several groups from the right hand side selectbox and click on « to move them to the 'In groups' selectbox. The template must belong to a group.

When done, click *Save*. Your new template should be visible in the list of templates.



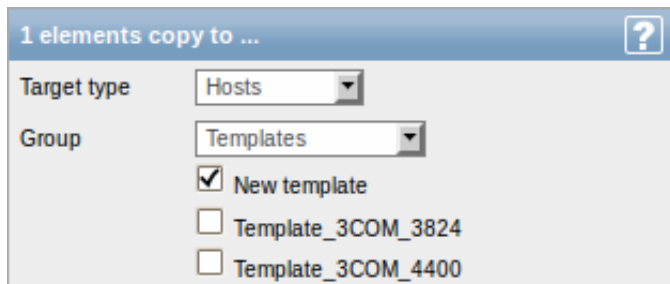
As you may see, the template is there, but it holds nothing in it – no items, triggers or other entities.

Adding item to template

To add an item to the template, go to the item list for 'New host'. In *Configuration* → *Hosts* click on *Items* next to 'New host'.

Then:

- mark the checkbox of the 'CPU Load' item in the list
- select *Copy selected to...* in the dropdown below the list and click on *Go*
- select the template to copy item to



- click on *Copy*

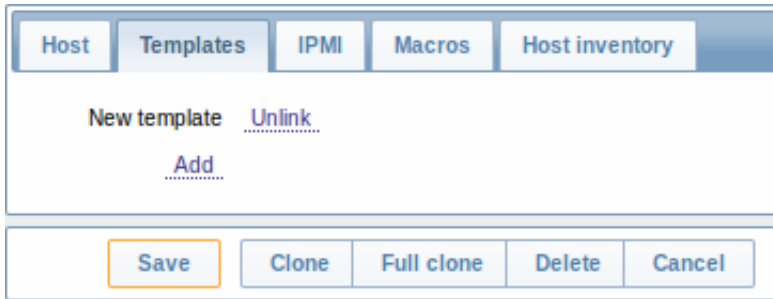
If you now go to *Configuration* → *Templates*, 'New template' should have one new item in it.

We will stop at one item only for now, but similarly you can add any other items, triggers or other entities to the template until it's a fairly complete set of entities for given purpose (monitoring OS, monitoring single application).

Linking template to host

With a template ready, it only remains to add it to a host. For that, go to *Configuration* → *Hosts*, click on 'New host' to open its property form and go to the **Templates** tab.

There, click on *Add*, mark the template we have created ('New template') and click on *Select*. The template should appear in the form.



The screenshot shows a web interface for creating a new template in Zabbix. At the top, there is a navigation bar with tabs for 'Host', 'Templates', 'IPMI', 'Macros', and 'Host inventory'. Below the navigation bar, there are three links: 'New template', 'Unlink', and 'Add'. At the bottom of the form, there are five buttons: 'Save', 'Clone', 'Full clone', 'Delete', and 'Cancel'.

Click *Save* in the form to save the changes. The template is now added to the host, with all entities that it holds.

As you may have guessed, this way it can be applied to any other host as well. Any changes to the items, triggers and other entities at the template level will propagate to the hosts the template is linked to.

Linking pre-defined templates to hosts

As you may have noticed, Zabbix comes with a set of predefined templates for various OS, devices and applications. To get started with monitoring very quickly, you may link the appropriate one of them to a host, but beware that these templates need to be fine-tuned for your environment. Some checks may not be needed, and polling intervals may be way too frequent.

More information about [templates](#) is available.

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