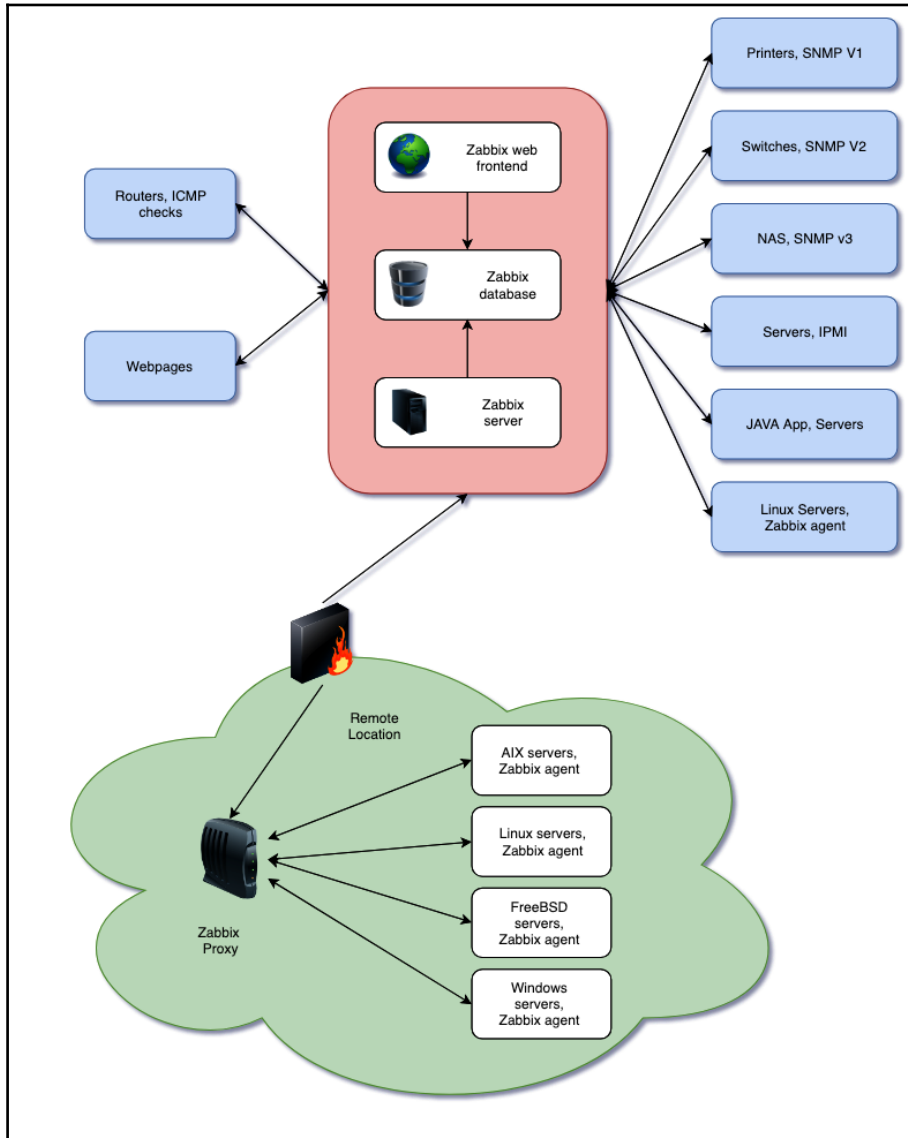
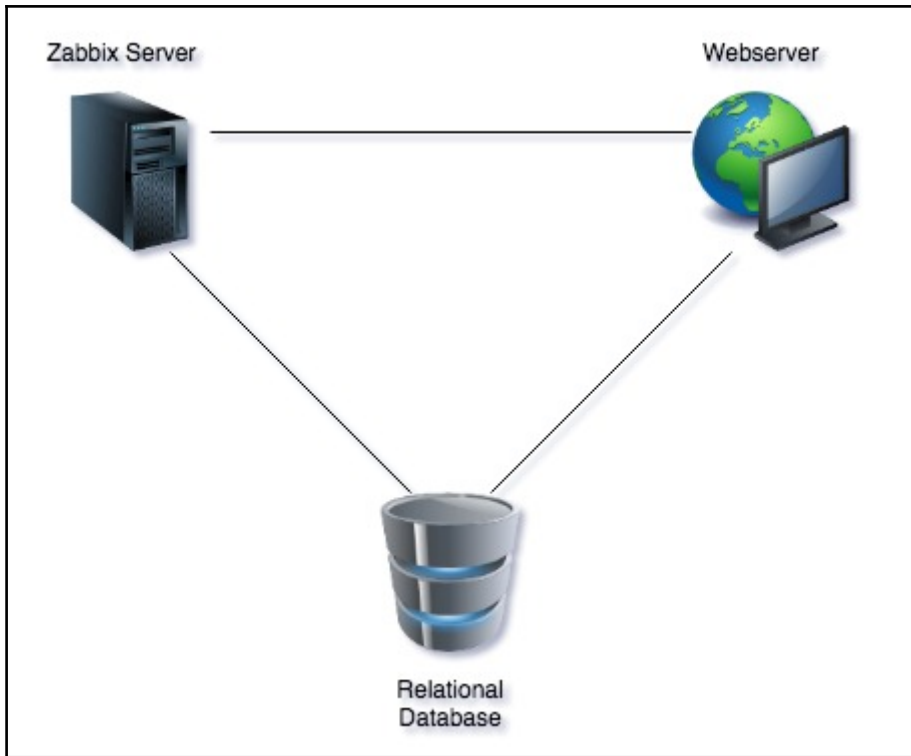


Chapter 1: Getting Started with Zabbix





Dashboard

[All dashboards](#) / [Dashboard](#)

Favourite graphs

No graphs added.

Updated: 10:20:49

Favourite screens

No screens added.

Updated: 10:20:48

Favourite maps

No maps added.

Updated: 10:20:49

Problems

Time	Recovery time	Status	Info	Host	Problem • Severity	Duration	Ack	Actions
10:08:33	10:18:33	RESOLVED		Zabbix server	Zabbix server has just been restarted	10m	No	

1 of 1 problem is shown Updated: 10:20:49

Web monitoring

Host group ▲ Ok Failed Unknown

No data found.

Discovery status

Discovery rule Up Down

No data found.

ZABBIX

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

Welcome to

Zabbix 4.0

Cancel

Back

Next step

ZABBIX

Check of pre-requisites

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

	Current value	Required	
PHP version	5.4.16	5.4.0	OK
PHP option "memory_limit"	128M	128M	OK
PHP option "post_max_size"	16M	16M	OK
PHP option "upload_max_filesize"	2M	2M	OK
PHP option "max_execution_time"	300	300	OK
PHP option "max_input_time"	300	300	OK
PHP option "date.timezone"	Europe/Riga		OK
PHP databases support	MySQL		OK
PHP bcmath	on		OK
PHP mbstring	on		OK

Cancel

Back

Next step



Configure DB connection

Please create database manually, and set the configuration parameters for connection to this database. Press "Next step" button when done.

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

Database type

Database host

Database port 0 - use default port

Database name

User

Password

[Back](#)

[Next step](#)



Zabbix server details

Please enter the host name or host IP address and port number of the Zabbix server, as well as the name of the installation (optional).

Welcome

Check of pre-requisites

Configure DB connection

Zabbix server details

Pre-installation summary

Install

Host

Port

Name

[Cancel](#)

[Back](#)

[Next step](#)

ZABBIX

- Welcome
- Check of pre-requisites
- Configure DB connection
- Zabbix server details
- Pre-installation summary
- Install**

Pre-installation summary

Please check configuration parameters. If all is correct, press "Next step" button, or "Back" button to change configuration parameters.

Database type MySQL
Database server localhost
Database port default
Database name zabbix
Database user zabbix
Database password *****

Zabbix server localhost
Zabbix server port 10051
Zabbix server name

Cancel

Back

Next step

ZABBIX

- Welcome
- Check of pre-requisites
- Configure DB connection
- Zabbix server details
- Pre-installation summary
- Install**

Install

[Details](#)

Cannot create the configuration file.

Unable to create the configuration file.

Alternatively, you can install it manually:

1. [Download the configuration file](#)
2. Save it as "*/srv/www/htdocs/zabbix/conf/zabbix.conf.php"



Install

- Welcome
- Check of pre-requisites
- Configure DB connection
- Zabbix server details
- Pre-installation summary
- Install

Congratulations! You have successfully installed Zabbix frontend.

Configuration file "/etc/zabbix/web/zabbix.conf.php" created.

Cancel

Back

Finish

ZABBIX

Username

Password

Remember me for 30 days

Sign in

or [sign in as guest](#)

Dashboard

[All dashboards](#) / [Dashboard](#)

Favourite graphs

No graphs added.

Updated: 13:43:43

Favourite screens

No screens added.

Updated: 13:43:43

Favourite maps

No maps added.

Updated: 13:43:43

Problems

Time ▼	Recovery time	Status	Info	Host	Problem • Severity	Duration	Ack	Actions
--------	---------------	--------	------	------	--------------------	----------	-----	---------

No data found.

0 of 0 problems are shown Updated: 13:45:44

Web monitoring

Host group ▲	Ok	Failed	Unknown
--------------	----	--------	---------

No data found.

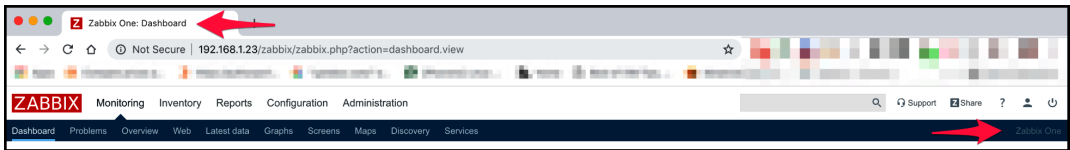
Updated: 13:45:45

Discovery status

Discovery rule	Up	Down
----------------	----	------

No data found.

Updated: 13:45:45



System information

Parameter	Value	Details
Zabbix server is running	Yes	localhost:10051
Number of hosts (enabled/disabled/templates)	91	7 / 0 / 84
Number of items (enabled/disabled/not supported)	76	76 / 0 / 0
Number of triggers (enabled/disabled [problem/ok])	24	24 / 0 [8 / 16]
Number of users (online)	4	2
Required server performance, new values per second	5.04	

Hosts

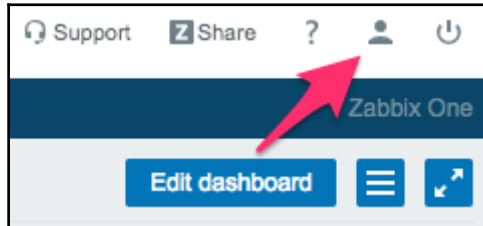
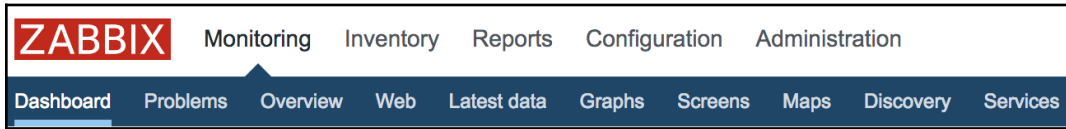
Group: all Create host Import

Monitored by:

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encryption	Info
<input type="checkbox"/> Zabbix server	11	68	46	11	2	127.0.0.1:10050	127.0.0.1:10050	Template App Zabbix Server, Template OS Linux (Template App Zabbix Agent)	Disabled	[ZBX] [SNMP] [JMX] [IPMI]	NONE	

Displaying 1 of 1 found

Chapter2: Getting Your First Notification



User profile: Zabbix Administrator

User

Media

Messaging

Password

Language

Theme

Auto-login

Auto-logout

* Refresh

* Rows per page

URL (after login)

User profile: Zabbix Administrator

User Media **Messaging**

Frontend messaging

Message timeout

Play sound

Trigger severity

<input checked="" type="checkbox"/> Recovery	<input type="text" value="alarm_ok"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> Not classified	<input type="text" value="no_sound"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> Information	<input type="text" value="alarm_information"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> Warning	<input type="text" value="alarm_warning"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> Average	<input type="text" value="alarm_average"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> High	<input type="text" value="alarm_high"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
<input checked="" type="checkbox"/> Disaster	<input type="text" value="alarm_disaster"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>

Show suppressed problems

User profile: Zabbix Administrator

User Media Messaging

Frontend messaging

Message timeout

Play sound

Trigger severity	<input checked="" type="checkbox"/> Recovery	<input type="text" value="alarm_ok"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> Not classified	<input type="text" value="no_sound"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> Information	<input type="text" value="alarm_information"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> Warning	<input type="text" value="alarm_warning"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> Average	<input type="text" value="alarm_average"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> High	<input type="text" value="alarm_high"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>
	<input checked="" type="checkbox"/> Disaster	<input type="text" value="alarm_disaster"/>	<input type="button" value="Play"/>	<input type="button" value="Stop"/>

Zabbix server Applications 3 Items 8 Triggers 1 Graphs 1 Discovery Web

127.0.0.1: [Template App Zabbix Server](#), [Template OS Linux](#) Disabled
10050 (Template App Zabbix Agent)

Items											Create item
All hosts / Zabbix server Disabled ZBX SNMP JMX IPMI Applications 11 Items 68 Triggers 46 Graphs 11 Discovery rules 2 Web scenarios											Filter
<input type="checkbox"/>	Wizard	Name	Triggers	Key	Interval	History	Trends	Type	Applications	Status	Info
<input type="checkbox"/>	...	Template App Zabbix Agent: Agent ping	Triggers 1	agent.ping	1m	1w	365d	Zabbix agent	Zabbix agent	Enabled	
<input type="checkbox"/>	...	Template OS Linux: Available memory	Triggers 1	vm.memory.size[available]	1m	1w	365d	Zabbix agent	Memory	Enabled	
<input type="checkbox"/>	...	Template OS Linux: Checksum of /etc/passwd	Triggers 1	vfs.file.cksum[/etc/passwd]	1h	1w	365d	Zabbix agent	Security	Enabled	
<input type="checkbox"/>	...	Template OS Linux: Context switches per second		system.cpu.switches	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	
<input type="checkbox"/>	...	Template OS Linux: CPU system time		system.cpu.util[,system]	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	
<input type="checkbox"/>	...	Template OS Linux: CPU user time		system.cpu.util[,user]	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	
<input type="checkbox"/>	...	Template OS Linux: CPU steal time		system.cpu.util[,steal]	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	
<input type="checkbox"/>	...	Template OS Linux: CPU softirq time		system.cpu.util[,softirq]	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	
<input type="checkbox"/>	...	Template OS Linux: CPU interrupt time		system.cpu.util[,interrupt]	1m	1w	365d	Zabbix agent	CPU, Performance	Enabled	

System information		
Parameter	Value	Details
Zabbix server is running	Yes	localhost:10051
Number of hosts (enabled/disabled/templates)	91	7 / 0 / 84
Number of items (enabled/disabled/not supported)	76	76 / 0 / 0
Number of triggers (enabled/disabled)	3	Only items assigned to enabled hosts are counted 3 / 16]
Number of users (online)	4	1
Required server performance, new values per second	5.04	

Hosts

Host Templates IPMI Macros Host inventory Encryption

* Host name

Visible name

* Groups

type here to search

* At least one interface must exist.

Agent interfaces	IP address	DNS name	Connect to	Port	Default
<input type="checkbox"/>	<input type="text" value="127.0.0.1"/>	<input type="text"/>	<input checked="" type="radio"/> IP <input type="radio"/> DNS	<input type="text" value="10050"/>	<input checked="" type="radio"/> Remove

[Add](#)

Items

All hosts / A test host Enabled ZBX SNMP JMX IPMI Applications Items Triggers Graphs Discovery rules Web scenarios

Item Preprocessing

* Name

Type

* Key

* Host interface

Type of information

Units

* Update interval

ZABBIX Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services Zabbix One

Latest data

Filter

Host groups: type here to search Select

Hosts: A test host Select

Application: type here to search Select

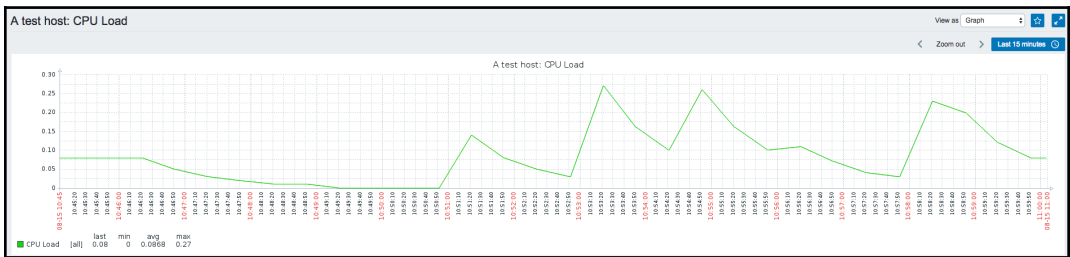
Name:

Show items without data:

Show details:

Apply Reset

<input type="checkbox"/>	Host	Name	Last check	Last value	Change	
<input type="checkbox"/>	A test host	- other - (1 item)				
<input type="checkbox"/>		CPU Load	2018-08-12 11:00:22	0.34	-0.23	Graph



Zoom out Last 15 minutes

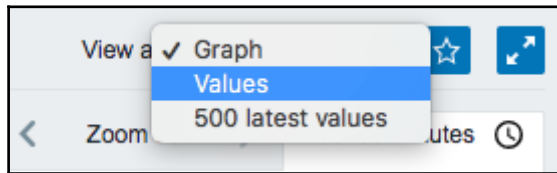
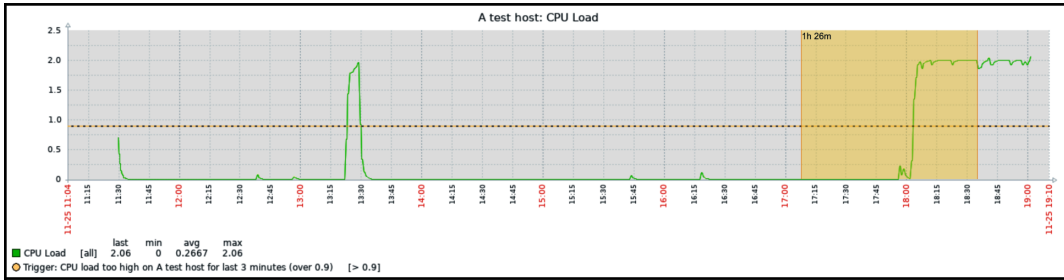
Zoom out Last 15 minutes

From: now-15m

To: now

Apply

Last 2 days	Yesterday	Today	Last 5 minutes
Last 7 days	Day before yesterday	Today so far	Last 15 minutes
Last 30 days	This day last week	This week	Last 30 minutes
Last 3 months	Previous week	This week so far	Last 1 hour
Last 6 months	Previous month	This month	Last 3 hours
Last 1 year	Previous year	This month so far	Last 6 hours
Last 2 years		This year	Last 12 hours
		This year so far	Last 1 day



Trigger Dependencies

Name: CPU load too high on A test host for last 3 minutes

Severity: Not classified | Information | Warning | Average | High | Disaster

Expression: Add

Condition

Item: A test host: CPU Load Select

Function: Average value of a period T is > N

Last of (T): 180 Time

Time shift: Time

N: 1

Insert Cancel

Overview

Group: all | Type: Triggers | Hosts location: Top

Show: Recent problems | Problems | Any

Acknowledge status: Any

Minimum trigger severity: Not classified

Age less than: 14 days

Name:

Application: Select

Host inventory: Type Remove

Show hosts in maintenance:

Apply Reset

Triggers

CPU load too high on A test host for last 3 minutes

A test host

Media type

Options

* Name

Type

* SMTP server

SMTP server port

* SMTP helo

* SMTP email

Connection security

 None STARTTLS SSL/TLS

Authentication

 None Username and password

Enabled

Add

Cancel

Media ✕

Type

* Send to [Remove](#)

[Remove](#)

[Add](#)

* When active

Use if severity Not classified
 Information
 Warning
 Average
 High
 Disaster

Enabled

[Add](#) [Cancel](#)

Host groups Templates Hosts Maintenance **Actions** Event correlation Discovery Services

Actions

Action Operations Recovery operations Update operations

* Name

Label	Name	Action
A	Trigger = A test host: CPU load too high on A test host for last 3 minutes	Remove

New condition =

[Add](#)

Enabled

* At least one operation, recovery operation or update operation must exist.

[Add](#) [Cancel](#)

Default subject Resolved: {EVENT.NAME}

Default message Problem has been resolved at {EVENT.RECOVERY.TIME} on {EVENT.RECOVERY.DATE}
Problem name: {EVENT.NAME}
Host: {HOST.NAME}
Severity: {EVENT.SEVERITY}
Original problem ID: {EVENT.ID}

Operations Details Action

Operation details

Operation type Send message

* At least one user or user group must be selected.

Send to User groups User group Action
[Add](#)

Send to Users User Action
Admin (Zabbix Administrator) [Remove](#)
[Add](#)

Send only to - All -

Default message

[Add](#) [Cancel](#)



* At least one operation, recovery operation or update operation must exist.

[Add](#) [Cancel](#)

Actions

Action **Operations** Recovery operations Update operations

* Default operation step duration

Default subject

Default message

Pause operations while in maintenance

Operations

Steps	Details	Start in	Duration	Action
-------	---------	----------	----------	--------

Operation details

Steps - (0 - infinitely)

Step duration (0 - use action default)

Operation type

* At least one user or user group must be selected.

Send to User groups

User group	Action
Add	

Send to Users

User	Action
Admin (Zabbix Administrator)	Remove
Add	

Send only to

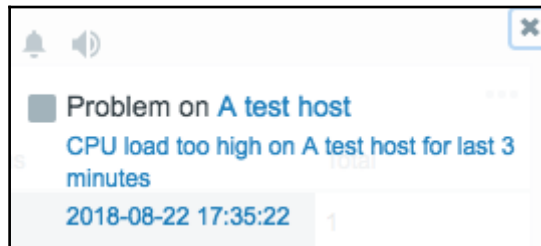
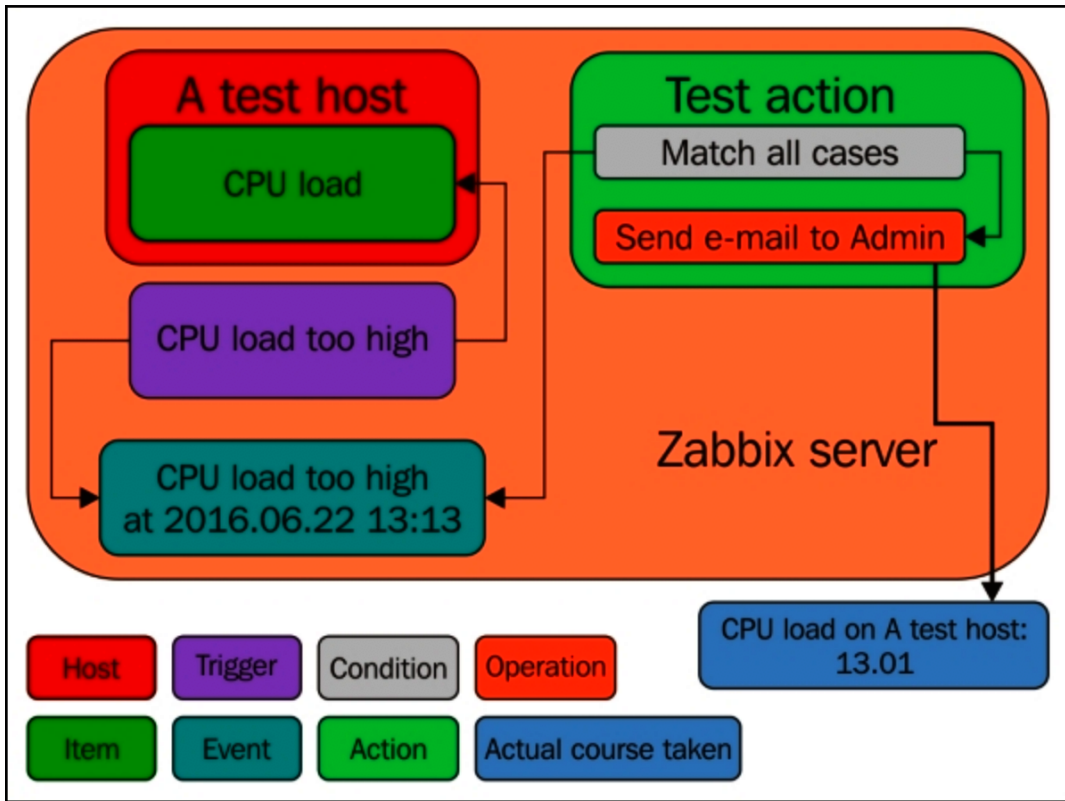
Default message

Conditions

Label	Name	Action
New		

[Add](#) [Cancel](#)

* At least one operation, recovery operation or update operation must exist.



User profile: Zabbix Administrator

User Media **Messaging**

Frontend messaging

Message timeout

Play sound

- Trigger severity
- Recovery
 - Not classified
 - Information
 - Warning
 - Average
 - High
 - Disaster

Show suppressed problems

Problems

Time	Recovery time	Status	Info	Host	Problem • Severity	Duration	Ack	Actions
------	---------------	--------	------	------	--------------------	----------	-----	---------

17:35:22	17:44:22	RESOLVED	A test host	CPU load too high on A test host for last 3 minutes	9m	No	↓
----------	----------	----------	-------------	---	----	----	---

Problems by severity

Time	User/Recipient	Action
2018-08-22 17:44:24	Admin (Zabbix Administrator)	✉
2018-08-22 17:44:22		📅
2018-08-22 17:35:22		🗑

✓ Zabbix agent

Zabbix agent (active)

Simple check

SNMPv1 agent

SNMPv2 agent

SNMPv3 agent

SNMP trap

Zabbix internal

Zabbix trapper

Zabbix aggregate

External check

Database monitor

HTTP agent

IPMI agent

SSH agent

TELNET agent

JMX agent

Calculated

Dependent item

Item Preprocessing

Preprocessing steps	Name	Parameters	Action
	Regular expression	pattern output	Remove
	Regular expression	pattern output	Remove
	Regular expression	pattern output	Remove

Text

- ✓ Regular expression
- Trim
- Right trim
- Left trim

Structured data

- XML XPath
- JSON Path

Arithmetic

- Custom multiplier

Change

- Simple change
- Change per second

Numeral systems

- Boolean to decimal
- Octal to decimal
- Hexadecimal to decimal

Clear history and trends Delete Cancel

a

A test host

Search: A test host

Hosts

Host	IP	DNS	Latest data	Problems	Graphs	Screens	Web	Applications	Items
A test host	192.168.1.29		Latest data	Problems	Graphs	Screens	Web	Applications 1	Items 36

Host groups

Host group	Latest data	Problems	Graphs	Web
No data found.				

Templates

Template	Applications	Items	Triggers	Graphs	Screens
No data found.					

Chapter 3: Monitoring with Zabbix Agents and Basic Protocols

Host Templates IPMI Macros Host inventory Encryption

Host name

Visible name

Groups

In groups

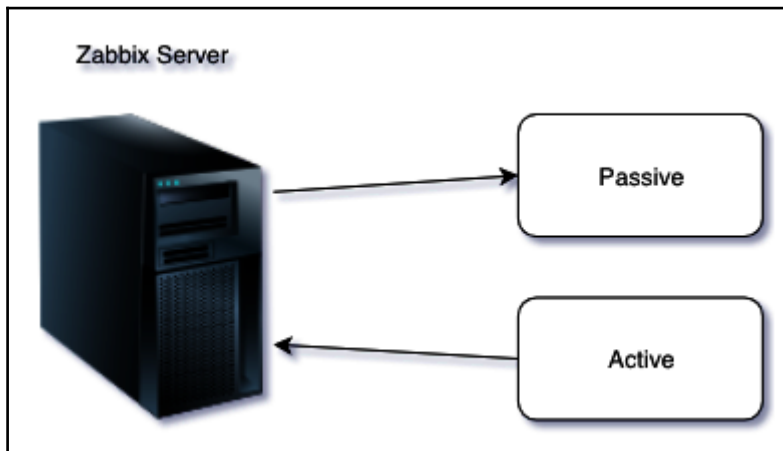
Other groups

New group

Agent interfaces

IP address	DNS name	Connect to	Port	Default
<input type="text" value="127.0.0.1"/>	<input type="text"/>	<input type="radio"/> IP <input type="radio"/> DNS	<input type="text" value="10050"/>	<input checked="" type="radio"/> Remove

[Add](#)



Item **Preprocessing**

Name

Type

Key

Host interface

Type of information

Units

Update interval

Custom intervals


Type	Interval	Period	Action
<input checked="" type="checkbox"/> Flexible	<input type="text" value="Scheduling"/>	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/> Remove

[Add](#)

History storage period

Standard items Type

Key	Name
agent.hostname	Agent host name. Returns string
agent.ping	Agent availability check. Returns nothing - unavailable; 1 - available
agent.version	Version of Zabbix agent. Returns string
kernel.maxfiles	Maximum number of opened files supported by OS. Returns integer
kernel.maxproc	Maximum number of processes supported by OS. Returns integer
net.dns[<ip>, <name>, <type>, <timeout>, <count>, <protocol>]	Checks if DNS service is up. Returns 0 - DNS is down (server did not respond or DNS resolution failed); 1 - DNS is up
net.dns.record[<ip>, <name>, <type>, <timeout>, <count>, <protocol>]	Performs a DNS query. Returns character string with the required type of information



Item added

✕

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services Zabbix One

Hosts

Group Linux servers Create host Import Filter

<input type="checkbox"/>	Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encryption	Info
<input type="checkbox"/>	Another host	Applications	Items 1	Triggers	Graphs	Discovery	Web	192.168.1.100: 10050		Enabled	ZBX SNMP JMX IPMI	NONE	
<input type="checkbox"/>	A test host	Applications	Items 1	Triggers 1	Graphs	Discovery	Web	127.0.0.1: 10050					

Get value from agent failed: cannot connect to [[192.168.1.100]:10050]; [113] No route to host

Displaying 2 of 2 found

ZABBIX Monitoring Inventory Reports Configuration Administration Zabbix One

Dashboard Problems Overview Web **Latest data** Graphs Screens Maps Discovery Services

Latest data

Host groups Linux servers type here to search Select Name

Hosts type here to search Select Show items without data

Application Select Show details

Apply Reset

<input type="checkbox"/>	Host	Name	Last check	Last value	Change
<input type="checkbox"/>	Another host	- other - (1 Item)			
<input type="checkbox"/>		Web server status	2018-09-15 12:19:54	0	Graph
<input type="checkbox"/>	A test host	- other - (1 Item)			
<input type="checkbox"/>		CPU Load	2018-09-15 12:20:22	0.01	-0.01 Graph


Details Cannot add item


Item with key "net.tcp.service[http,,80]" already exists on "Another host".


<input type="checkbox"/>	A test host	- other - (2 Items)			
<input type="checkbox"/>		SSH server status	2018-12-12 18:26:45	1	Graph
<input type="checkbox"/>		Web server status	2018-12-12 18:26:22	Up (1)	Graph

Item Preprocessing

Name Incoming traffic on interface \$1

Type Zabbix agent (active) 

Key net.if.in[if,<mode>] 

Type of information Numeric (unsigned) 

Units

Update interval 60s

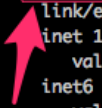
History storage period 7d

`net.if.in[if,<mode>]` Incoming traffic statistics on network interface. Returns integer

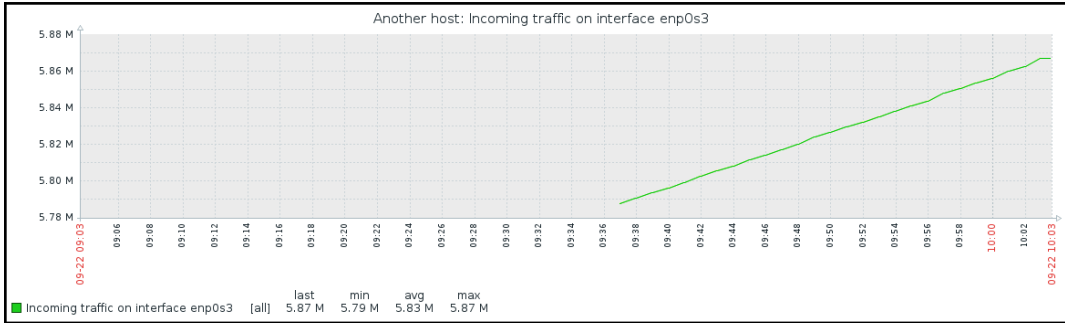
```

1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
  link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
  inet 127.0.0.1/8 scope host lo
    valid_lft forever preferred_lft forever
  inet6 ::1/128 scope host
    valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
  link/ether 08:00:27:ca:63:71 brd ff:ff:ff:ff:ff:ff
  inet 192.168.1.14/24 brd 192.168.1.255 scope global dynamic enp0s3
    valid_lft 3133sec preferred_lft 3133sec
  inet6 fe80::a00:27ff:feca:6371/64 scope link
    valid_lft forever preferred_lft forever

```



<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change		
▼	Another host	- other - (1 Item)				
<input type="checkbox"/>	Incoming traffic on enp0s3	2018-12-12 18:31:40	239	+8	Graph	



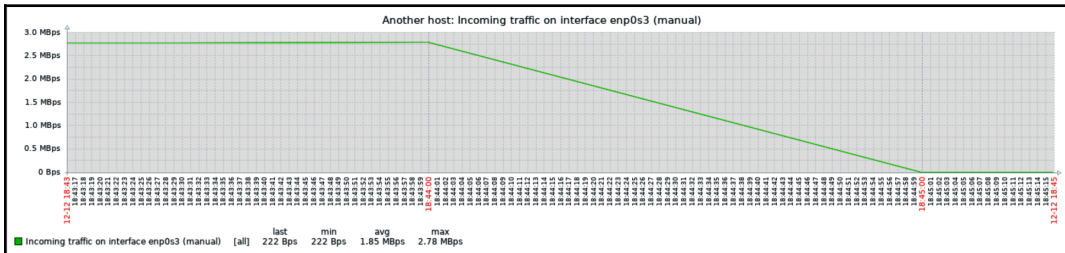
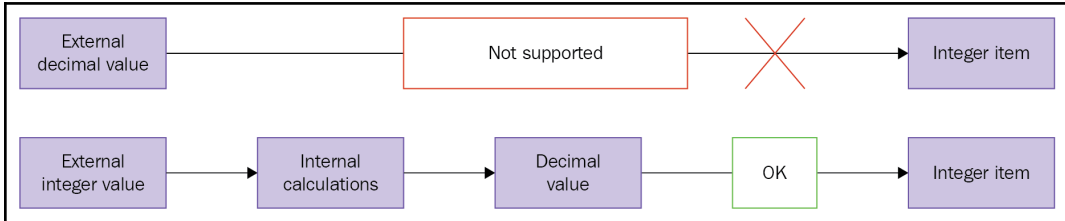
All hosts / Another host Enabled ZBX SNMP JMX IPMI Applications Items 3 Triggers Graphs Discovery rules Web scenarios

Item Preprocessing

Preprocessing steps	Name	Parameters	Action
	Change per second		Remove

Add

Update Clone Check now Clear history and trends Delete Cancel



Timestamp	Value
2018-12-12 18:46:30	249
2018-12-12 18:46:00	216
2018-12-12 18:45:30	254
2018-12-12 18:45:00	222
2018-12-12 18:44:00	2917670
2018-12-12 18:43:30	2910581
2018-12-12 18:43:00	2902951
2018-12-12 18:42:30	2896697
2018-12-12 18:42:00	2889398

<input type="checkbox"/>	Wizard	Name ▲	Triggers	Key	Interval
<input checked="" type="checkbox"/>	...	Incoming traffic on interface enp0s3		net.if.in[enp0s3]	60s
<input type="checkbox"/>	...	SSH server status		net.tcp.service[ssh]	60s
<input type="checkbox"/>	...	Web server status		net.tcp.service[http,,80]	60s

1 selected

Latest data

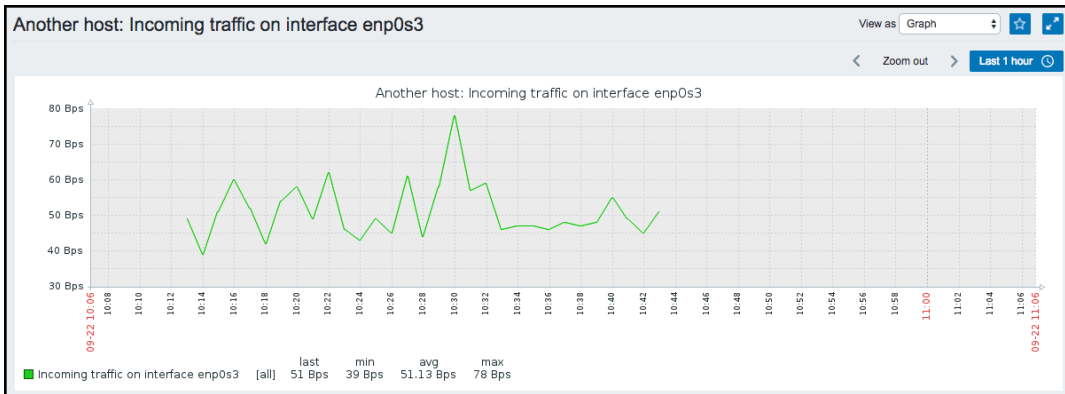
Filter


Host groups: Name:

Hosts: Show items without data:

Application: Show details:

<input type="checkbox"/>	Host	Name ▲	Last check	Last value	Change
<input type="checkbox"/>	Another host	- other - (3 items)			
<input type="checkbox"/>		Incoming traffic on interface enp0s3	2018-09-22 13:10:55	92 Bps	+2 Bps Graph



All hosts / Another host Enabled **ZBX** SNMP JMX IPMI Applications 2 Items 22 Triggers 12 Graphs 6 Discovery rules 2 Web scenarios Filter 

Host group: Type: Type of information: State:

Host: Update interval: History: Status:

Application: Trends: Triggers:

Name: Template:

Key: Discovery:

Subfilter affects only filtered data

TYPES
 Calculated 1 Simple check 2 SNMP trap 3 Zabbix agent 16

TYPE OF INFORMATION
 Numeric (float) 2 Numeric (unsigned) 17 Text 3


TEMPLATE
 Not Templated items 3 Templated items 19

WITH TRIGGERS
 Without triggers 10 With triggers 12


DISCOVERY
 Discovered 3 Regular 19

HISTORY
 14d 1 3m 21

INTERVAL
 30s 14 1m 2 2m 2 10m 1

Subfilter affects only filtered data 

TYPES
 Calculated +4 Simple check +3 SNMP trap +7 SSH agent +1 Zabbix agent +34 **Zabbix agent (active) 8** Zabbix aggregate +1 Zabbix trapper +1

TYPE OF INFORMATION
 Log 3 Numeric (float) 0 Numeric (unsigned) 5 Text 0 

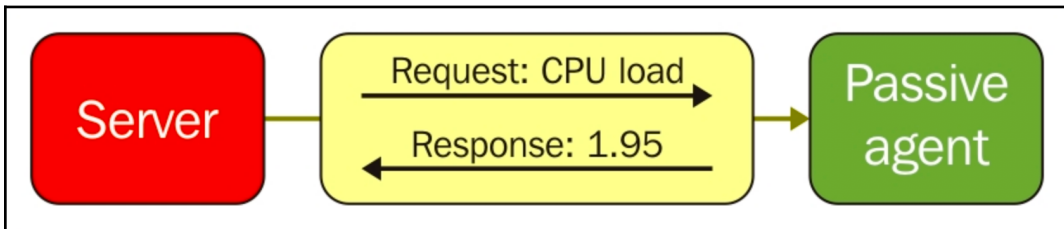
TEMPLATE
 Not Templated items 8 Templated items 0

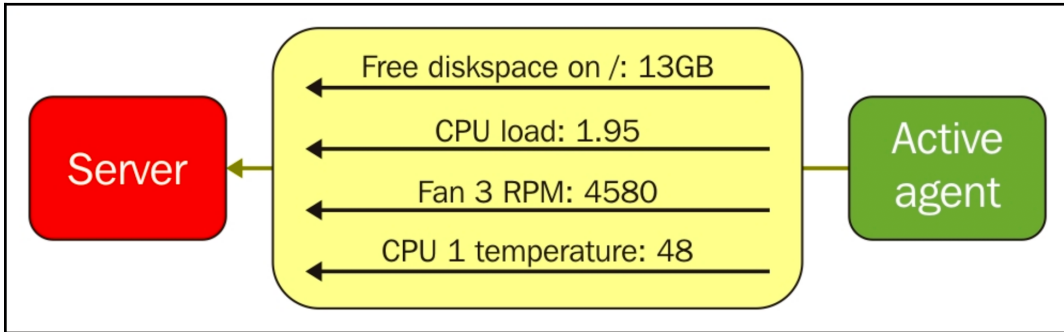
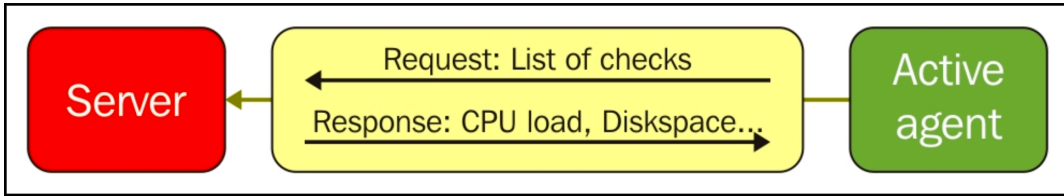
WITH TRIGGERS
 Without triggers 7 With triggers 1

DISCOVERY
 Discovered 0 Regular 8

HISTORY
 14d 0 3m 8

INTERVAL
 1s 3 2s 1 30s 4 1m 0 2m 0 3m 0 10m 0





Enabled

[Update](#) [Clone](#) [Check now](#) [Clear history and trends](#) [Delete](#) [Cancel](#)

* Name

Type

* Key [Select](#)

Item Preprocessing

Preprocessing steps	Name	Parameters	Action
	Custom multiplier	1000	Remove

[Add](#)

```
[root@localhost ~]# ls -al /usr/sbin/fping
-rwsr-xr-x. 1 root root 32960 Oct 26 2014 /usr/sbin/fping
```

Incoming traffic on interface enp0s8	2016-02-25 20:43:58	64 Bps
Incoming traffic on interface lo	2016-02-25 20:43:58	40 Bps

Overview Group: all | Type: Data | Hosts location: Top

Filter

Application:

Show suppressed problems

Items

Another host

A test host

3 selected

Type Original

Host interface Original

JMX endpoint Original

URL Original

Request body type Original

Request body Original

Headers Original

SNMP community Original

Context name Original

Security name Original

Security level Original

Authentication protocol Original

Authentication passphrase Original

Privacy protocol Original

Privacy passphrase Original

Port Original

Type of information Original

Units Original

Value mapping

Value mapping

Create value map

Import

<input type="checkbox"/> Name ▲	Value map	Used in items
<input type="checkbox"/> APC Battery Replacement Status	1 ⇒ unknown 2 ⇒ notInstalled 3 ⇒ ok 4 ⇒ failed 5 ⇒ highTemperature 6 ⇒ replaceImmediately 7 ⇒ lowCapacity	
<input type="checkbox"/> APC Battery Status	1 ⇒ unknown 2 ⇒ batteryNormal 3 ⇒ batteryLow	
<input type="checkbox"/> Certificate expiry status	0 ⇒ Expires soon 1 ⇒ Does not expire yet	
<input type="checkbox"/> CISCO-ENVMON-MIB::CiscoEnvMonState	1 ⇒ normal 2 ⇒ warning 3 ⇒ critical 4 ⇒ shutdown 5 ⇒ notPresent 6 ⇒ notFunctioning	Yes

Web server status

2018-12-12 19:44:22

Up (1)



ANOTHER HOST

0.62 ms

41 Bps

40 Bps

Down (0)

Up (1)

Up (1)

Custom intervals	Type	Interval	Period	Action
	Flexible Scheduling	3600	6-7,00:00-24:00	Remove
Add				

Custom intervals	Type	Interval	Period	Action
	Flexible Scheduling	wd1h9		Remove
Add				

1 selected

[Enable](#)
[Disable](#)
[Check now](#)
[Clear history](#)
[Copy](#)
[Mass update](#)
[Delete](#)

* Target type

Group

* Target Another host

A test host

ITEMS	ANOTHER HOST	A TEST HOST
CPU load	0	0.19
ICMP ping performance	0.76 ms	0.07 ms
Incoming traffic on interface enp0s8	53 Bps	859 Bps
Incoming traffic on interface lo	41 Bps	194 Bps
SMTP server status	Down (0)	Up (1)
SSH server status	Up (1)	Up (1)
Web server status	Up (1)	Up (1)

HISTORY

Last hour graph

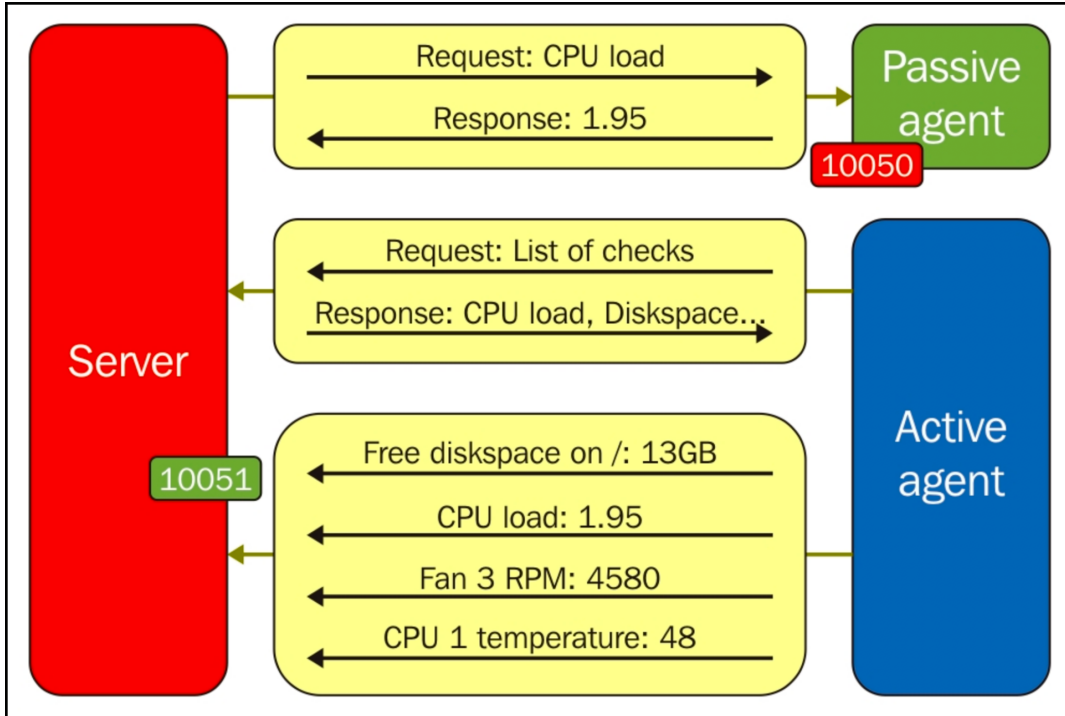
Last week graph

Last month graph

Latest values

HISTORY

Latest values



Chapter 4: Monitoring SNMP Devices

SNMPv2::sysDescr . 0

MIB	OID	UID
-----	-----	-----

SNMP interfaces

127.0.0.1 IP DNS 161 Remove

Use bulk requests

[Add](#)

TYPE	APPLICATIONS	STATUS	INFO
snmp_parse_oid(): cannot parse OID "PowerNet-MIB::upsAdvIdentSerialNumber.0".			

Serial number 2016-03-16 22:27:40 XA123PO

2018-11-25 17:02:30 163 Bps +31 Bps [Graph](#)

SNMP interfaces

127.0.0.1 IP DNS 161 Remove

Use bulk requests

[Add](#)

Name

Type

Key

Host interface


Type of information

SNMP trap tests	2016-03-18 23:17:48	23:17:46 2016/03/18 PDU INF...
-----------------	---------------------	--------------------------------

SNMP trap fallback	2016-03-18 23:33:04	23:33:03 2016/03/18 PDU INF...
SNMP trap tests	2016-03-18 23:17:48	23:17:46 2016/03/18 PDU INF...

TIMESTAMP	VALUE
2016-03-18 23:33:04	23:33:03 2016/03/18 PDU INFO: community public receivedfrom UDP: [127.0.0.1]:54642->[127.0.0.1]:162 errorindex 0 errorstatus 0 requestid 108168159

TIMESTAMP	VALUE
	00:14:55 2016/03/19 PDU INFO:
	messageid 0
	transactionid 11
	requestid 973564866
	notificationtype INFORM
	version 1
2016-03-19 00:14:56	receivedfrom UDP: [127.0.0.1]:40852->[127.0.0.1]:162
	community public
	errorstatus 0
	errorindex 0
	VARBINDS:
	DISMAN-EVENT-MIB::sysUpTimeInstance type=67 value=Timeticks: (3054527) 8:29:05.27
	SNMPV2-MIB::snmpTrapOID.0 type=6 value=OID: NET-SNMP-MIB::netsnmpExperimental
	NET-SNMP-MIB::netSnmpExperimental type=4 value=STRING: "some other trap"


Details ▲ Cannot copy items ✕

Cannot find host interface on "Another host" for item key "snmptrap.fallback".

Other configuration parameters

* Refresh unsupported items

Group for discovered hosts

Default host inventory mode Disabled Manual Automatic

User group for database down message

Log unmatched SNMP traps

Update

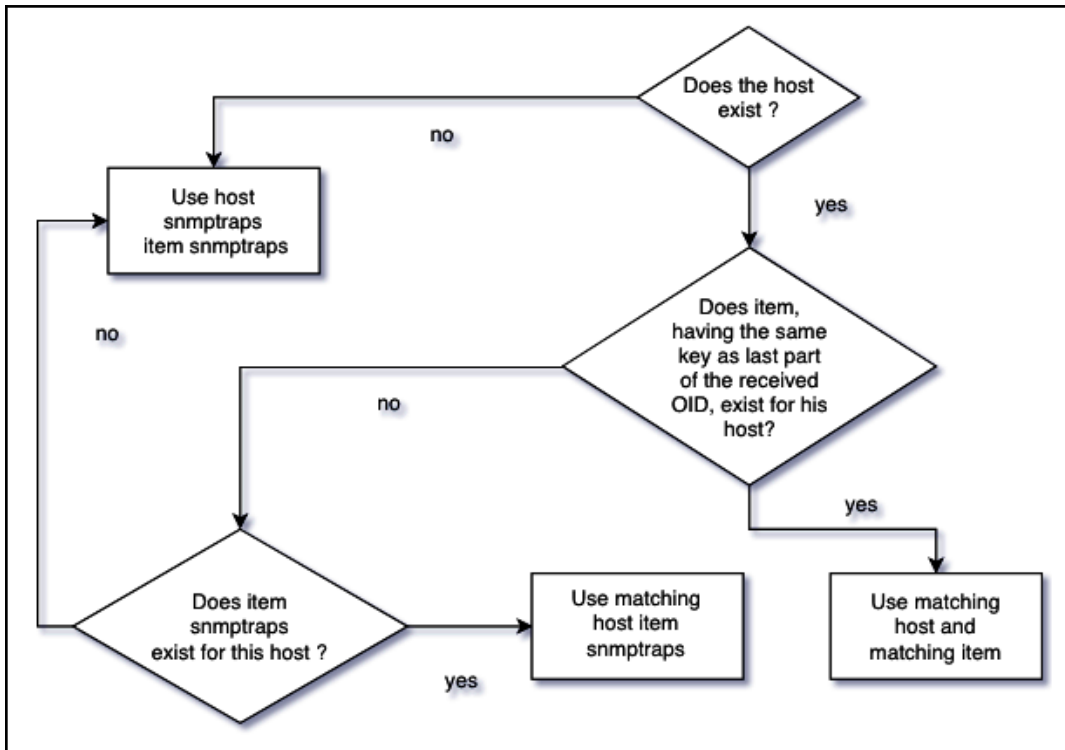
Received SNMP traps	2016-03-19 00:41:52	localhost "test" NET-SNMP-MI...
---------------------	---------------------	---------------------------------

TIMESTAMP	VALUE
2016-03-19 00:41:52	localhost "test" NET-SNMP-MIB::netSnmpExperimental

TIMESTAMP	VALUE
2016-03-19 00:44:31	localhost "another" NET-SNMP-MIB::netSnmpExperimental
2016-03-19 00:41:52	localhost "test" NET-SNMP-MIB::netSnmpExperimental

TIMESTAMP	VALUE
2016-03-19 00:47:09	localhost "A Very Important Failure" NET-SNMP-MIB::netSnmpExperimental
2016-03-19 00:44:31	localhost "another" NET-SNMP-MIB::netSnmpExperimental
2016-03-19 00:41:52	localhost "test" NET-SNMP-MIB::netSnmpExperimental

<u>Another host</u>	- other - (1 item)
snmptraps	2016-03-19 11:35:34 192.168.56.11 "test" NET-SNM...

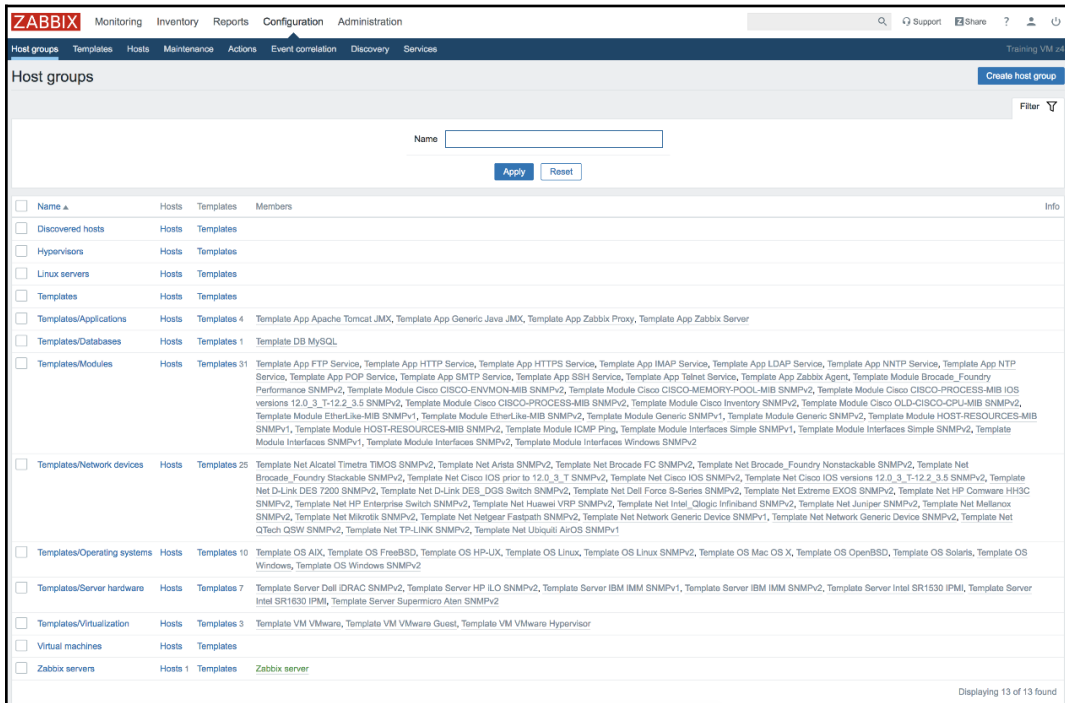


Experimental SNMP trap

2016-03-20 03:12:07

192.168.56.11 "test" NET-SNM...

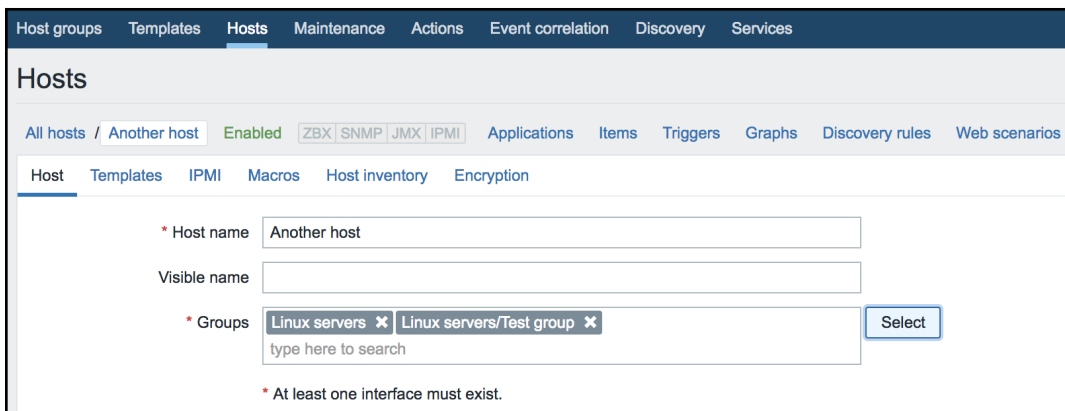
Chapter 5: Managing Hosts, Users, and Permissions



The screenshot shows the Zabbix web interface for managing host groups. The top navigation bar includes Monitoring, Inventory, Reports, Configuration, and Administration. The main menu has options for Host groups, Templates, Hosts, Maintenance, Actions, Event correlation, Discovery, and Services. The 'Host groups' page features a search bar for the group name, an 'Apply' button, and a 'Reset' button. Below this is a table listing various host groups with columns for Name, Hosts, Templates, and Members. The groups include:

- Discovered hosts
- Hypervisors
- Linux servers
- Templates
- Templates/Applications
- Templates/Databases
- Templates/Modules
- Templates/Network devices
- Templates/Operating systems
- Templates/Server hardware
- Templates/Virtualization
- Virtual machines
- Zabbix servers

 The 'Zabbix servers' group is highlighted in green. At the bottom right, it indicates 'Displaying 13 of 13 found'.



The screenshot shows the Zabbix web interface for configuring a new host. The top navigation bar includes Host groups, Templates, Hosts, Maintenance, Actions, Event correlation, Discovery, and Services. The 'Hosts' page has a breadcrumb trail: All hosts / Another host. Below the breadcrumb are tabs for Enabled, ZBX, SNMP, JMX, IPMI, Applications, Items, Triggers, Graphs, Discovery rules, and Web scenarios. The configuration form includes:

- Host name:** A text input field containing 'Another host'.
- Visible name:** An empty text input field.
- Groups:** A dropdown menu showing 'Linux servers' and 'Linux servers/Test group', with a 'Select' button to the right. Below the dropdown is a search input field with the placeholder text 'type here to search'.

 A note at the bottom states: '* At least one interface must exist.'

- Linux servers Hosts 2 Templates Another host, A test host
- Linux servers/SNMP group Hosts 1 Templates snmptrap

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services Training VM z4

Hosts Group: all [Create host](#) [Import](#)

Name: DNS:

Monitored by: IP:

Port:

<input type="checkbox"/>	Name ▲	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encryption	Info
<input type="checkbox"/>	Another host	Applications 1	Items 1	Triggers	Graphs	Discovery	Web	192.168.1.24: 10050		Enabled	ZBX SNMP JMX IPMI	NONE	
<input type="checkbox"/>	A test host	Applications	Items	Triggers	Graphs	Discovery	Web	127.0.0.1: 10050		Enabled	ZBX SNMP JMX IPMI	NONE	
<input type="checkbox"/>	SNMP Device	Applications	Items	Triggers	Graphs	Discovery	Web	127.0.0.1: 10050		Enabled	ZBX SNMP JMX IPMI	NONE	
<input type="checkbox"/>	snmptrap	Applications	Items	Triggers	Graphs	Discovery	Web	127.0.0.1: 161		Enabled	ZBX SNMP JMX IPMI	NONE	
<input type="checkbox"/>	Zabbix server	Applications 11	Items 86	Triggers 50	Graphs 14	Discovery 2	Web	127.0.0.1: 10050	Template App Zabbix Server, Template OS Linux (Template App Zabbix Agent)	Enabled	ZBX SNMP JMX IPMI	NONE	

Displaying 5 of 5 found

AVAILABILITY



Hosts

All hosts / A test host Enabled ZBX | SNMP | JMX | IPMI Applications Items Triggers Graphs Discovery rules Web scenarios

Host Templates IPMI Macros Host inventory Encryption

Disabled Manual Automatic

Type

Host groups Templates **Hosts** Maintenance Actions Event correlation Discovery Services

Hosts

Host Templates IPMI **Inventory** Encryption

Inventory mode Disabled **Manual** Automatic

Type snmp

ZABBIX Monitoring Inventory Reports Configuration Administration Support Share ? ? ? ?

Overview **Hosts** Training VM z4

Host inventory overview

Group all Grouping by Type

Type	Host count
test	2
snmp	2

ZABBIX Monitoring Inventory Reports Configuration Administration Support Share ? ? ? ?

Overview **Hosts** Training VM z4

Host inventory

Group all Filter

Field Type equals snmp

Apply Reset

Host	Group	Name	Type	OS	Serial number A	Tag	MAC address A
SNMP Device	Discovered hosts		snmp				
snmptrap	Linux servers/SNMP group		snmp				

Displaying 2 of 2 found

Overview **Hosts** Training VM z4

Host inventory

Overview **Details**

Host name SNMP Device

Agent interfaces

IP address	DNS name	Connect to	Port	Default
127.0.0.1		IP DNS	10050	<input checked="" type="radio"/>

Monitoring [Web](#) [Latest data](#) [Problems](#) [Graphs](#) [Screens](#)

Configuration [Host](#) [Applications](#) [Items](#) [Triggers](#) [Graphs](#) [Discovery](#) [Web](#)

[Cancel](#)

ZABBIX Monitoring **Inventory** Reports Configuration Administration Support Share ?

Overview **Hosts** Training VM z4

Host inventory

Group **all**

Filter

Field **Type** equals snmp

[Apply](#) [Reset](#)

Host	Group	Name	Type	OS	Serial number A	Tag	MAC address A
SNMP Device	Discovered hosts		snmp	Linux (http://www.kernel.org)			
snmptrap	Linux servers/SNMP group		snmp				

Displaying 2 of 2 found

Software application A ← The full OS Name

Host inventory

Type test

Software application A Linux localhost.localdomain 3.10.0-862.14.4.el7.x86_64 #1 SMP We

Host inventory

Group Linux servers

Filter 

Field Software application A contains 3.10.0-862

Host ▲	Group	Name	Type	OS	Serial number A	Tag	MAC address A
A test host	Linux servers, Linux servers/Test group		test				

Displaying 1 of 1 found

Maintenance periods

Maintenance **Periods** Hosts and groups

* Name

Maintenance type With data collection No data collection

* Active since 

* Active till 

Description



[Details](#) ▲ Cannot add maintenance

At least one host group or host must be selected.

Maintenance periods

Maintenance **Periods** Hosts and groups

* Periods

Period type	Schedule	Period	Action
One time only	2018-11-01 12:47	1h	Edit Remove
New			

Host groups Templates Hosts **Maintenance** Actions Event correlation Discovery Services

Maintenance periods


Maintenance Periods Hosts and groups

* At least one host group or host must be selected.

Host groups
type here to search

Hosts
type here to search

Tags



Maintenance periods Group: Linux servers

State:

<input type="checkbox"/>	Name	Type	Active since	Active till	State	Description
<input type="checkbox"/>	Normal maintenance	With data collection	2018-11-01 00:00	2019-11-02 00:00	Active	we keep data during this maintenance

Displaying 1 of 1 found

ZABBIX Monitoring Inventory Reports Configuration Administration

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services Training VM z4

Problems

Export to CSV

Filter

Show: **Recent problems** Problems History

Host groups: type here to search [Select]

Hosts: **A test host** type here to search [Select]

Application: type here to search [Select]

Triggers: type here to search [Select]

Problem: type here to search

Minimum severity: Not classified

Age less than: 14 days

Host inventory: Type [dropdown] [Remove]

Tags: And/Or Or tag [input] Contains Equals value [input] [Remove]

Show tags: None 1 2 3 Tag name: Full Shortened None

Tag display priority: comma-separated list

Show suppressed problems Show unacknowledged only

Compact view Show timeline

Show details Highlight whole row

Apply Reset

Time	Severity	Recovery time	Status	Info	Host	Problem
13:10:41	Warning		PROBLEM		A test host	CPU load too high on A test host for last 3 minutes

0 selected [Mass update]

Normal maintenance [Maintenance with data collection] we keep data during this maintenance

Edit widget



Type

Name

Refresh interval

Show

Host groups

Exclude host groups

Hosts

Problem

- Severity Not classified
 Information
 Warning
 Average
 High
 Disaster

Tags

[Remove](#)

[Add](#)

Show tags

Tag name

Tag display priority

Show suppressed problems




Show unacknowledged only

Sort entries by

Show timeline

* Show lines

* Periods

Period type	Schedule	Period	Action
Maintenance period	Period type: One time only ▾ * Date: 2018-11-03 10:18  * Maintenance period length: 0 Days 1 ▾ Hours 0 ▾ Minutes Add Cancel		

[Add](#) [Cancel](#)

<input type="checkbox"/> Name ▲	Type	Active since	Active till	State	Description
<input type="checkbox"/> Maintenance with all data dropped	No data collection	2018-11-03 00:00	2019-11-04 00:00	Active	
<input type="checkbox"/> Normal maintenance	With data collection	2018-11-01 00:00	2019-11-02 00:00	Active	we keep data during this maintenance

Displaying 2 of 2 found

Status

Availability

In maintenance

ZBX SNMP JMX IPMI

Enabled

ZBX SNMP JMX IPMI

Maintenance **Periods** Hosts and groups

* Periods	Period type	Schedule	Period	Action
Maintenance period	Period type	Daily		
	* Every day(s)	1		
	At (hour:minute)	12 : 0		
	* Maintenance period length	0 Days 1 Hours 0 Minutes		
	Add Cancel			
	Add Cancel			

Maintenance **Periods** Hosts and groups

* Periods	Period type	Schedule	Period	Action
Maintenance period	Period type	Weekly		
	* Every week(s)	1		
	* Day of week	<input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday		
	At (hour:minute)	12 : 0		
	* Maintenance period length	0 Days 1 Hours 0 Minutes		
	Add Cancel			
	Add Cancel			

Maintenance **Periods** Hosts and groups

* Periods	Period type	Schedule	Period	Action
Maintenance period	Period type <input type="text" value="Monthly"/>	* Month <input type="checkbox"/> January <input type="checkbox"/> July <input type="checkbox"/> February <input type="checkbox"/> August <input type="checkbox"/> March <input type="checkbox"/> September <input type="checkbox"/> April <input type="checkbox"/> October <input type="checkbox"/> May <input type="checkbox"/> November <input type="checkbox"/> June <input type="checkbox"/> December	Date <input type="text" value="Day of month"/> <input type="text" value="Day of week"/>	* Day of week <input type="text" value="first"/> <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday
	At (hour:minute)	<input type="text" value="12"/>	:	<input type="text" value="0"/>
	* Maintenance period length	<input type="text" value="0"/> Days	<input type="text" value="1"/> Hours	<input type="text" value="0"/> Minutes
	Add Cancel			
	<input type="button" value="Add"/> <input type="button" value="Cancel"/>			

- ✓ first
- second
- third
- fourth
- last

Authentication

Authentication HTTP settings LDAP settings

Default authentication Internal LDAP

Alias Name Surname User type Any Zabbix User Zabbix Admin Zabbix Super Admin

<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	No	Ok	Internal	Disabled	Enabled

Users

User **Media** Permissions

* Alias

Name

Surname

* Groups

* Password

* Password (once again)

Password is not mandatory for non internal authentication type.

Language

Theme

Auto-login

Auto-logout

* Refresh

* Rows per page

URL (after login)

Password

- ✓ Zabbix User
- Zabbix Admin
- Zabbix Super Admin

General Proxies Authentication User groups **Users** Media types Scripts Queue

Users

User Media **Permissions**

User type

Permissions	Host group	Permissions
	All groups	None

Permissions can be assigned for user groups only.

General Proxies Authentication **User groups** Users Media types Scripts Queue Training VM z4

User groups Create user group

Filter

Name Status Any Enabled Disabled

Apply Reset

<input type="checkbox"/>	Name ▲	#	Members	Frontend access	Debug mode	Status
<input type="checkbox"/>	Disabled	Users		System default	Disabled	Disabled
<input type="checkbox"/>	Enabled debug mode	Users		System default	Enabled	Enabled
<input type="checkbox"/>	Guests	Users 1	guest	Internal	Disabled	Enabled
<input type="checkbox"/>	No access to the frontend	Users		Disabled	Disabled	Enabled
<input type="checkbox"/>	Zabbix administrators	Users 2	Admin (Zabbix Administrator), monitoring_user (monitor user)	System default	Disabled	Enabled

Displaying 5 of 5 found

0 selected Enable Disable Enable debug mode Disable debug mode Delete

✓ System default

Internal

LDAP

Disabled

User group **Permissions** Tag filter

Permissions

Host group	Permissions
All groups	None

type here to search Select Read-write Read Deny None

Include subgroups

[Add](#)

Update Delete Cancel

General Proxies Authentication **User groups** Users Media types Scripts Queue Training VM z4

User groups

User group Permissions Tag filter

Permissions

Host group	Permissions
All groups	None
Linux servers	Read-write Read Deny None
Linux servers/SNMP group	Read-write Read Deny None
Linux servers/Test group	Read-write Read Deny None

type here to search

Include subgroups

[Add](#)

User **Media** Permissions

User type

Host groups Templates **Hosts** Maintenance Actions Discovery Services Training VM z4

Hosts Group all

Name DNS

Monitored by IP

Port

Name **Status**

No data found.

Displaying 0 of 0 found

General Proxies Authentication User groups **Users** Media types Scripts Queue Training VM z4

Users User group: All

Filter

Alias Name Surname User type: Any Zabbix User Zabbix Admin Zabbix Super Admin

<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 (2018-11-04 12:14:27)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	advanced_user	advanced	user	Zabbix Admin	Zabbix administrators	Yes (2018-11-04 12:11:20)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	guest			Zabbix User	Guests	Yes (2018-11-04 12:10:50)	Ok	Internal	Disabled	Enabled
<input type="checkbox"/>	monitoring_user	monitor	user	Zabbix User	Our users, Zabbix administrators	No (2018-11-04 12:10:30)	Ok	System default	Disabled	Enabled

Displaying 4 of 4 found

User groups ✕

Name

Disabled

Enabled debug mode

Guests

No access to the frontend

Our users

Zabbix administrators

General Proxies Authentication **User groups** Users Media types Scripts Queue

User groups

User group Permissions **Tag filter**

Permissions

- Host group
- All groups
- Linux servers
- Linux servers/Important SNMP Hosts
- Linux servers/SNMP group
- Linux servers/Test group

Permissions

None

Read-write Read Deny None

Read-write Read Deny None

Read-write Read Deny None

Read-write Read Deny None

type here to search

Include subgroups

[Add](#)

User type	Zabbix User	Zabbix Admin	Zabbix Super Admin
Permissions			
Read-Write	Read only	Full	Full
Read only	Read only	Read only	Full
Deny	None	None	Full

Chapter 6: Detecting Problems with Triggers

Condition ✕

* Item

Function ▾

Last of (T) ▾

Time shift Time

* Result ▾

Trigger **Dependencies**

* Name

Severity

* Expression

[Expression constructor](#)

OK event generation

PROBLEM event generation mode

OK event closes

Tags

[Add](#)

Allow manual close

URL

Description

Enabled

Dashboard Problems **Overview** Web Latest data Graphs Screens Maps Discovery Services Training VM 24

Overview Group: all Type: **Triggers** Hosts location: Top

Filter

Show

Acknowledge status

Minimum trigger severity

Age less than days

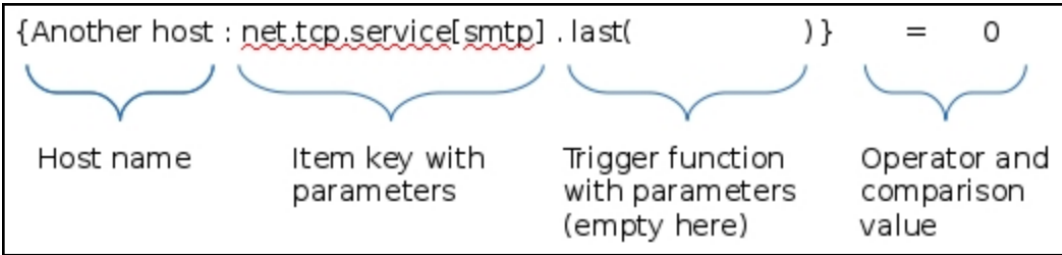
Name

Application

Host inventory

[Add](#)

Show suppressed problems



Condition

* Item

Function

Last of (T) Count

Time shift Time

* Result =

Trigger Dependencies

Dependencies	Name	Action
	Another host: SMTP service is down	Remove
	Add	

<input type="checkbox"/>	Severity	Value	Name ▲	Expression	Status	Info	Tags
<input type="checkbox"/>	Average	PROBLEM	SMTP service is down	{Another host:net.tcp.service[smtp].last()}=0	Enabled		
<input type="checkbox"/>	Average	OK	Web service is down Depends on: Another host: SMTP service is down	{Another host:net.tcp.service[http,,80].last()}=0	Enabled		

Dashboard Problems Overview Web Latest data Graphs Screens Maps Discovery Services Training VM 24

Overview Group all Type Triggers Hosts location Top Filter

Show Recent problems Problems Any Application Select

Acknowledge status Any Host inventory Type Add Remove

Minimum trigger severity Not classified Show suppressed problems

Age less than 14 days Name

Apply Reset

Triggers

SMTP service is down (HOST.NAME) has just been restarted

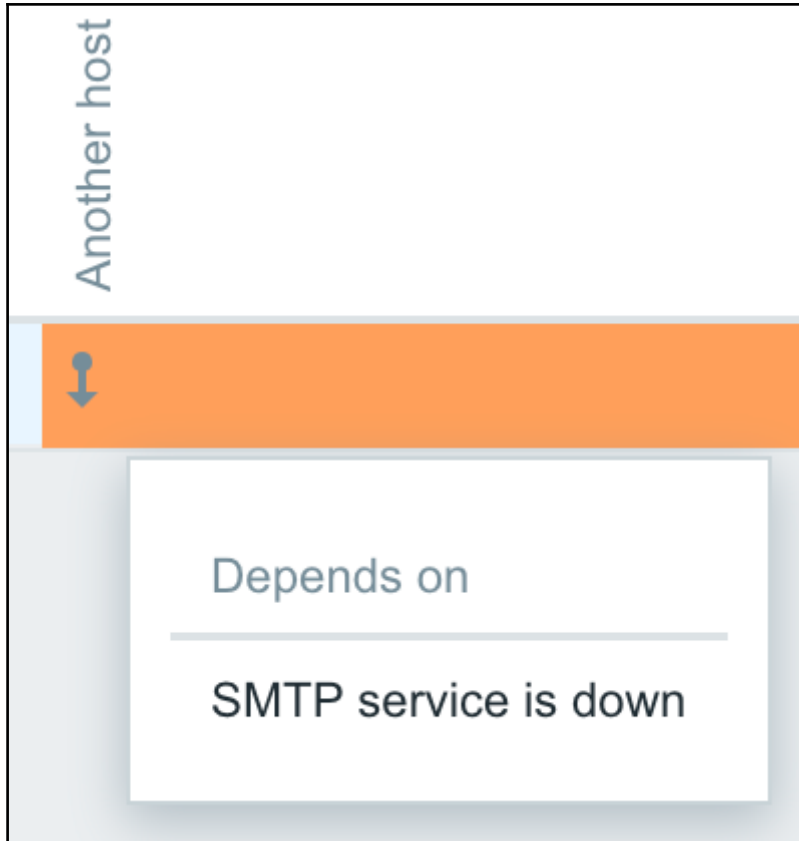
Another host Zabbix server

Another host



Dependent

Web service is down



Applications 3 Items 26 **Triggers 12** Graphs 6 Discovery rules 2 Web scenarios

<input type="checkbox"/> Severity	Value	Name ▲	Expression	Status	Info	Tags
<input type="checkbox"/> Average	PROBLEM	SMTP service is down Depends on: Another host: Testfile is missing	{Another host:net.tcp.service[smtp].last()}=0	Enabled		

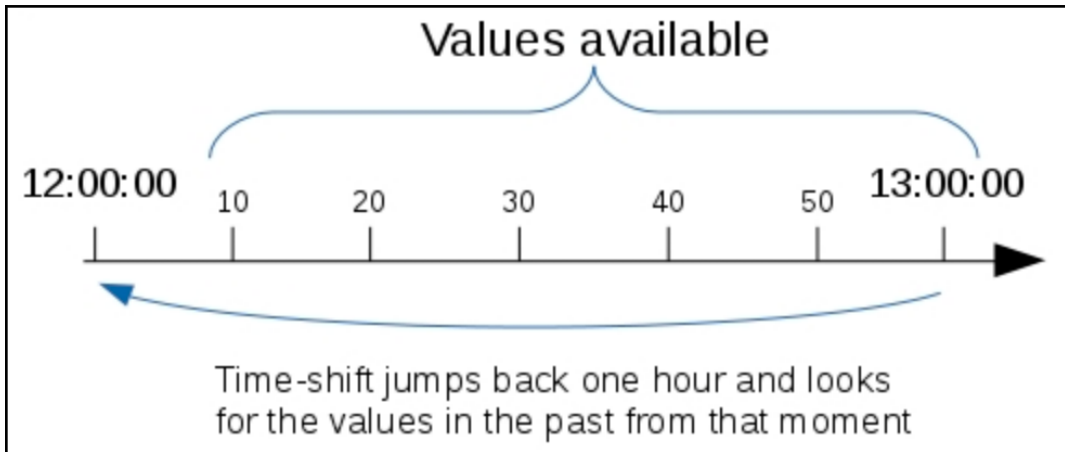
Web service is down



SMTP service is down



Testfile is missing



Trigger severities

Trigger severities ▾

* Not classified	<input type="text" value="Not classified"/>	<input type="text" value="97AAB3"/>
* Information	<input type="text" value="Information"/>	<input type="text" value="7499FF"/>
* Warning	<input type="text" value="Warning"/>	<input type="text" value="FFC859"/>
* Average	<input type="text" value="Average"/>	<input type="text" value="FFA059"/>
* High	<input type="text" value="High"/>	<input type="text" value="E97659"/>
* Disaster	<input type="text" value="Disaster"/>	<input type="text" value="E45959"/>

Custom severity names affect all locales and require manual translation!

Trigger displaying options

Trigger displaying options ▾

Use custom event status colours



* Unacknowledged PROBLEM events blinking

* Acknowledged PROBLEM events blinking

* Unacknowledged RESOLVED events blinking

* Acknowledged RESOLVED events blinking

* Display OK triggers for

* On status change triggers blink for

Update

Reset defaults

Event details

Trigger details

Host: Another host

Trigger: SMTP service is down

Severity: **Average**

Problem expression: `{Another host:net.tcp.service[smtp].last()}=0`

Recovery expression:

Event generation: Normal

Allow manual close: No

Enabled: Yes

Actions

Step	Time	User/Recipient	Action	Message/Command	Status	Info
	2018-11-12 14:25:36	Admin (Zabbix Administrator)		will take care of the issue		
	2018-11-12 12:18:12					
	2018-11-12 12:17:42					

Event list [previous 20]

Time	Recovery time	Status	Age	Duration	Ack	Actions
2018-11-12 12:17:42	2018-11-12 12:18:12	RESOLVED	2h 7m 54s	30s	No	
2018-11-11 16:21:42	2018-11-11 16:38:42	RESOLVED	22h 3m 54s	17m	No	
2018-11-11 16:10:12	2018-11-11 16:11:12	RESOLVED	22h 15m 24s	1m	No	
2018-11-10 18:23:42	2018-11-11 16:05:12	RESOLVED	1d 20h 1m	21h 41m 30s	No	

Event details

Event: SMTP service is down

Severity: **Information**

Time: 2018-11-12 12:17:42

Acknowledged: No

Resolved by: Trigger

Tags:

- comments have been made. The number of comments is also displayed.
- problem severity has been increased (e.g. Information → Warning)
- problem severity has been decreased (e.g. Warning → Information)
- problem severity has been changed, but returned to the original level (e.g. Warning → Information → Warning)
- actions have been taken. The number of actions is also displayed.
- actions have been taken, at least one is in progress. The number of actions is also displayed.
- actions have been taken, at least one has failed. The number of actions is also displayed.

Triggers

All hosts / Another host Enabled **ZBX** SNMP JMX IPMI Applications 1 Items 6 **Triggers 5** Graphs Discovery rules Web scenarios

Trigger Dependencies

* Name:

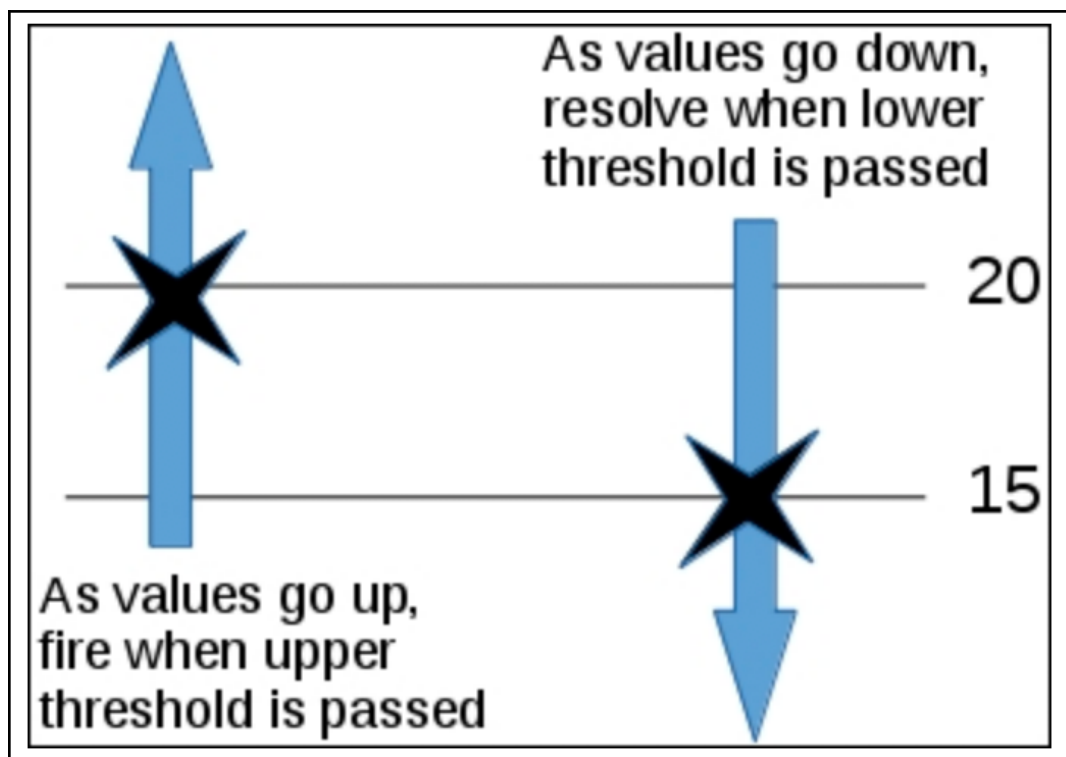
Severity: Not classified Information Warning **Average** High Disaster

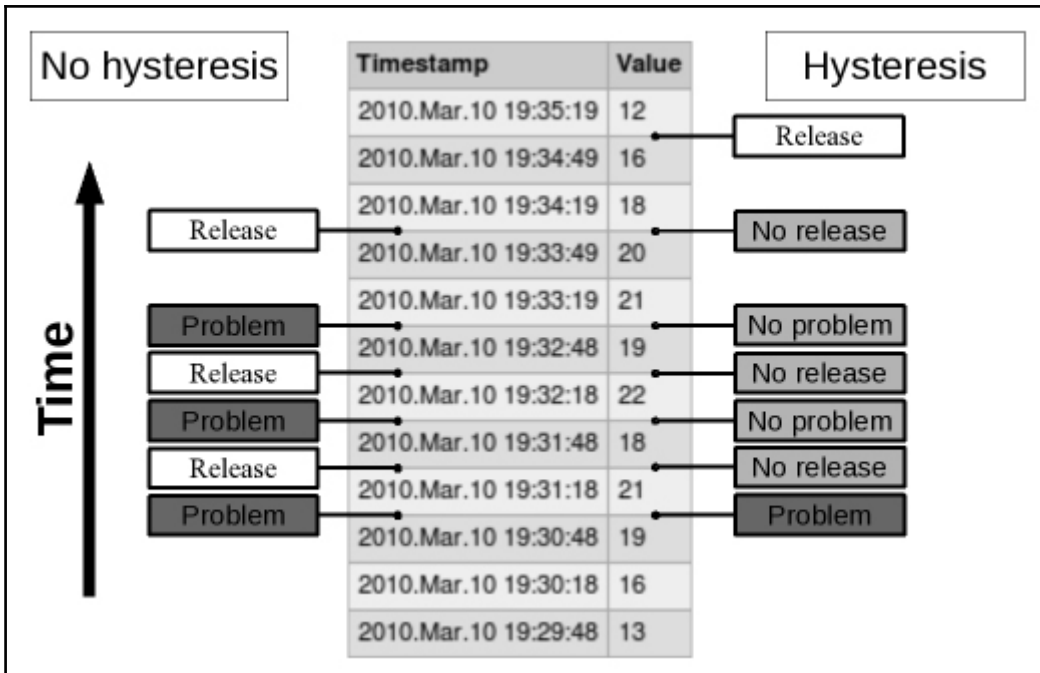
* Problem expression:

[Expression constructor](#)

OK event generation: Expression Recovery expression None

* Recovery expression:





Correlation **Operations**

* Name

* Conditions

Label	Name	Action
New condition	Old event tag	equals tag

[Add](#)

Description

Enabled

Tags

Application

Ms SQL Server

Remove

Add

Tags

Service

stopped

Remove

Add

Correlation Operations

* Name

Type of calculation And/Or A and B

* Conditions

Label	Name	Action
A	Old event tag <i>Application</i> equals <i>Ms SQL Server</i>	Remove
B	New event tag <i>Service</i> equals <i>stopped</i>	Remove

New condition

Old event tag
equals

Add

Description

Enabled

Update
Clone
Delete
Cancel

Event correlation rules

Correlation

Operations

* Operations

Details

Action

Close old events

[Remove](#)

New operation

Close old events ▾

[Add](#)

Update

Clone

Delete

Cancel

Chapter 7: Acting upon Monitored Conditions

Actions

Action Operations Recovery operations Update operations

* Name

Type of calculation A and B

Conditions	Label	Name	Action
	A	Problem is not suppressed	Remove
	B	Trigger severity is greater than or equals <i>Not classified</i>	Remove

New condition

[Add](#)

Enabled

* At least one operation, recovery operation or update operation must exist.

Host groups Templates Hosts Maintenance **Actions** Event correlation Discovery Services

Actions

Action Operations **Recovery operations** Update operations

* Default operation step duration

Default subject

Default message

Pause operations for suppressed problems

Operations	Steps	Details	Start in	Duration	Action
	1	Send message to user groups: Our users via all media	Immediately	Default	Edit Remove
		New			

* At least one operation, recovery operation or update operation must exist.

* Target type

Group

* Target Another host
 A test host

Actions

Action

Operations

Recovery operations

Update operations

* Name

Type of calculation

And/Or



A and B

Users

User

Media

Permissions

Media

Type

Send to

When active

Use if severity

Status

Action

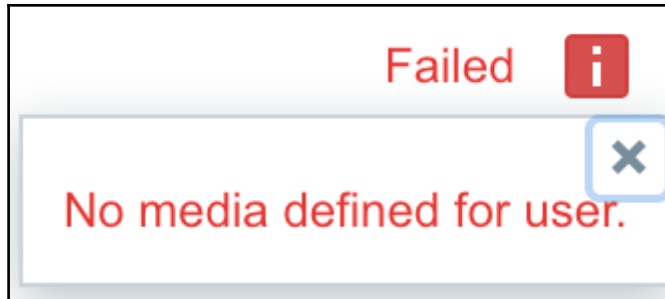
[Add](#)

Update

Delete

Cancel

RECIPIENT(S)	MESSAGE	STATUS	INFO
monitoring_user (monitoring user) monitoring_user@company.tld	<p>Subject: PROBLEM: SNMP trap has arrived on snmptraps</p> <p>Message: Trigger: SNMP trap has arrived on snmptraps Trigger status: PROBLEM Trigger severity: Information Trigger URL:</p> <p>Item values:</p> <ol style="list-style-type: none"> Received SNMP traps (snmptraps:snmptraps): 192.168.56.11 "Critical Error" NET-SNMP-MIB::netSnmpExperimental 'UNKNOWN' ('UNKNOWN':'UNKNOWN'): 'UNKNOWN' 'UNKNOWN' ('UNKNOWN':'UNKNOWN'): 'UNKNOWN' <p>Original event ID: 374</p>	Sent	
advanced_user (advanced user)	<p>Subject: PROBLEM: SNMP trap has arrived on snmptraps</p> <p>Message: Trigger: SNMP trap has arrived on snmptraps Trigger status: PROBLEM Trigger severity: Information Trigger URL:</p> <p>Item values:</p> <ol style="list-style-type: none"> Received SNMP traps (snmptraps:snmptraps): 192.168.56.11 "Critical Error" NET-SNMP-MIB::netSnmpExperimental 'UNKNOWN' ('UNKNOWN':'UNKNOWN'): 'UNKNOWN' 'UNKNOWN' ('UNKNOWN':'UNKNOWN'): 'UNKNOWN' <p>Original event ID: 374</p>	Not sent	



Actions

Action Operations Recovery operations Update operations

* Default operation step duration

Default subject

Default message

Pause operations for suppressed problems

Operations	Steps	Details	Start in	Duration	Action
1	Send message to users:	Admin (Zabbix Administrator) via all media	Immediately	Default	Edit Remove
New					

* At least one operation, recovery operation or update operation must exist.

Action Operations Recovery operations Update operations

* Default operation step duration 

Default subject

Default message

Pause operations for suppressed problems

Operations	Steps	Details	Start in	Duration	Action
1 - 6	Send message to users:	Admin (Zabbix Administrator) via all media	Immediately	60	Edit Remove
New					

* At least one operation, recovery operation or update operation must exist.



Steps - (0 - infinitely)

Step duration (0 - use action default)

Operation type

* At least one user or user group must be selected.

Send to User groups	User group	Action
	Add	

Send to Users	User	Action
	monitoring_user (monitor user)	Remove
	Add	



Send only to

Default message



Subject

Message

Conditions	Label	Name	Action
	A	Event acknowledged equals <i>Not Ack</i>	Remove
	New		



[Update](#) [Cancel](#)

[Action](#)
[Operations](#)
[Recovery operations](#)
[Update operations](#)

* Default operation step duration

Default subject

Default message

Pause operations for suppressed problems

Operations

Steps	Details	Start in	Duration	Action
2 - 6	Send message to users: Admin (Zabbix Administrator) via all media	00:30:00	60	Edit Remove
7 - 0	Send message to users: Admin (Zabbix Administrator) via all media	00:35:00	Default	Edit Remove
7	Send message to users: advanced_user (advanced user) via all media	00:35:00	Default	Edit Remove
9	Send message to users: monitoring_user (monitor user) via all media	01:35:00	Default	Edit Remove

[New](#)

Before				After
STEPS	DETAILS	START IN	DURATION (SEC)	START IN
1 - 5	Send message to users: Admin (Zabbix Administrator) via all media	Immediately	60	00:30:00
6 - 0	Send message to users: Admin (Zabbix Administrator) via all media	00:05:00	Default	00:35:00
6	Send message to users: advanced_user (advanced user) via all media	00:05:00	Default	00:35:00
9	Send message to users: monitoring_user (monitoring user) via all media	00:20:00	Default	01:35:00

Media types

Media type [Options](#)

* Name

Type

* Script name

Script parameters	Parameter	Action
	<input type="text" value="{ALERT.MESSAGE}"/>	Remove
	Add	

Enabled

Add

Cancel

Actions

Action **Operations** Recovery operations Update operations

* Name

Type of calculation A and B

Conditions	Label	Name	Action
	A	Host equals <i>Another host</i>	Remove
	B	Trigger name contains <i>Web service is down</i>	Remove

New condition

[Add](#)

Enabled

* At least one operation, recovery operation or update operation must exist.

SCRIPTS

Detect operating system

Management 

Ping

Top CPU using processes

Traceroute

GO TO

Host inventory

Latest data

Problems

Graphs

Host screens

Ping

```
ping -c 3 127.0.0.1; case $? in [01]) true;; *) false;; esac
```

```
PING 127.0.0.1 (127.0.0.1) 56(84) bytes of data.  
64 bytes from 127.0.0.1: icmp_seq=1 ttl=64 time=0.013 ms  
64 bytes from 127.0.0.1: icmp_seq=2 ttl=64 time=0.021 ms  
64 bytes from 127.0.0.1: icmp_seq=3 ttl=64 time=0.023 ms  
  
--- 127.0.0.1 ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 1999ms  
rtt min/avg/max/mdev = 0.013/0.019/0.023/0.004 ms
```

Cancel

Scripts

Create script

Filter 

Name

Apply

Reset

<input type="checkbox"/> Name ▲	Type	Execute on	Commands	User group	Host group	Host access
<input type="checkbox"/> Detect operating system	Script	Server (proxy)	sudo /usr/bin/nmap -O {HOST.CONN}	Zabbix administrators	All	Read
<input type="checkbox"/> Ping	Script	Server (proxy)	ping -c 3 {HOST.CONN}; case \$? in [01]) true;; *) false;; esac	All	All	Read
<input type="checkbox"/> Traceroute	Script	Server (proxy)	/bin/traceroute {HOST.CONN}	All	All	Read

Displaying 3 of 3 found

```
sudo /usr/bin/nmap -O 192.168.1.29
```

```
Starting Nmap 6.40 ( http://nmap.org ) at 2018-12-15 12:16 CET
Nmap scan report for 192.168.1.29
Host is up (0.00034s latency).
Not shown: 998 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
MAC Address: 08:00:27:B2:77:88 (Cadmus Computer Systems)
```

Top CPU using processes

```
top -n 1 -b | grep -A 10 "^[ ]*PID"
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1	root	20	0	128140	6720	4168	S	0.0	0.3	0:02.61	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.19	ksoftirqd/0
5	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0H
7	root	rt	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
8	root	20	0	0	0	0	S	0.0	0.0	0:00.00	rcu_bh
9	root	20	0	0	0	0	S	0.0	0.0	0:00.72	rcu_sched
10	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	lru-add-dra+
11	root	rt	0	0	0	0	S	0.0	0.0	0:00.04	watchdog/0
13	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kdevtmpfs

Cancel

Execution confirmation

Reboot this system?

Cancel

Execute

* Name

Type

Execute on

* Commands

Description

User group

Host group

Required host permissions

Enable confirmation

Confirmation text

SCRIPTS

Detect operating system

Management ▶

Ping

Top CPU using processes

Traceroute

GO TO

Host inventory

Latest data

Problems

Graphs


Host screens

Reboot

Operation details

Steps - (0 - infinitely)

Step duration (0 - use action default)

 Operation type

* Target list

Target	Action
New	

 Type

 * Script name

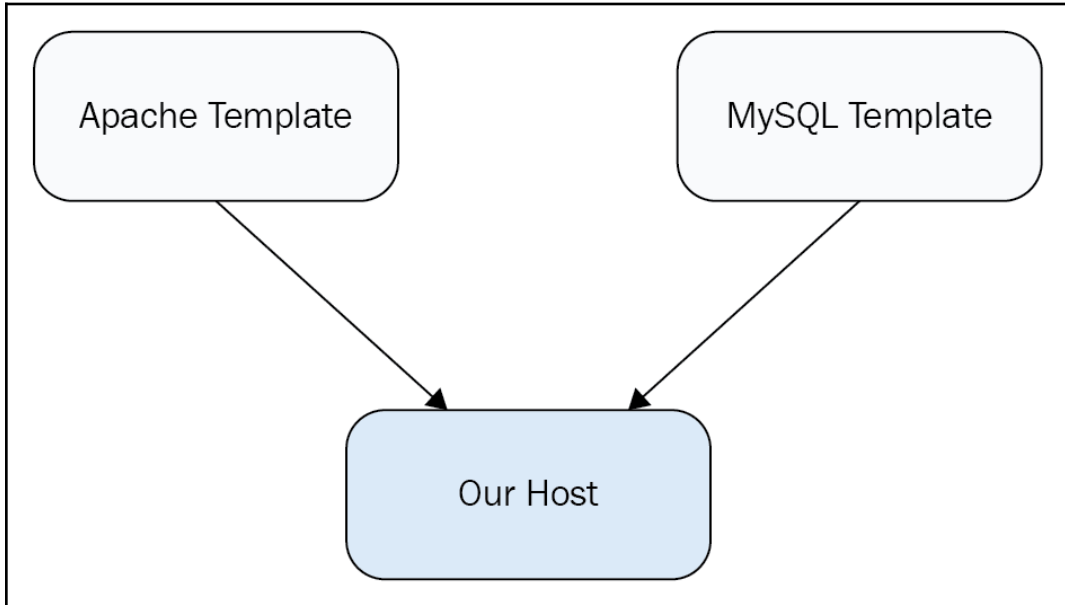
Conditions

Label	Name	Action
New		

[Update](#) [Cancel](#)

* At least one operation, recovery operation or update operation must exist.

Chapter 8: Simplifying Complex Configurations with Templates



Template [Linked templates](#) [Macros](#)

* Template name

Visible name

* Groups
type here to search

Description

Items

All hosts / Another host

Enabled

ZBX

SNMP

JMX

IPMI

* Target type

Templates

Group

Custom templates

* Target



C_Template_Linux

Copy

Cancel

NAME ▲	TRIGGERS	KEY	NAME ▲	TRIGGERS	KEY
CPU load	Triggers 1	system.cpu.load	CPU load		system.cpu.load
Full OS name		system.uptime	Experimental SNMP trap		netSnmpExperimental2
ICMP ping performance		icmppingsec	ICMP ping performance		icmppingsec
incoming traffic on interface		net.if.in[io]	incoming traffic on interface enp0s8		net.if.in[enp0s8]
incoming traffic on interface enp0s8		net.if.in[enp0s8]	incoming traffic on interface lo		net.if.in[io]
SMTP server status	Triggers 1	net.tcp.service[smtp]	Local time	Triggers 1	system.localtime
SNMP trap fallback	Triggers 1	snmptrap.fallback	SMTP server status	Triggers 1	nettcp.service[smtp]
SNMP trap tests		snmptrap[test]	SNMP trap fallback		snmptrapfallback
SSH server status	Triggers 1	net.tcp.service[ssh]	snmptraps	Triggers 1	snmptrap2
Web server status	Triggers 1	net.tcp.service[http,80]	SNMP traps tests		snmptrap[test]
Zabbix agent version		agent.version	SSH server status		nettcp.service[ssh]
			Testfile exists	Triggers 1	vfs.file.exists[smp.testfile]
			Web server status	Triggers 1	nettcp.service[http,80]
			Zabbix agent version		agentversion


Host **Templates** IPMI Macros Host inventory Encryption

Linked templates

Name	Action
C_Template_Linux	

Link new templates

[Add](#)




Host **Templates** IPMI Macros Host inventory Encryption


Linked templates

Name	Action
C_Template_Linux	Unlink

Link new templates

[Add](#)



 **Host updated**

<input type="checkbox"/>	...	Full OS Name	system.uname
<input type="checkbox"/>	...	C_Template_Linux: ICMP ping performance	icmppingsec
<input type="checkbox"/>	...	C_Template_Linux: Incoming traffic on interface enp0s3	net.if.in[enp0s3]

Item **Preprocessing**

Parent items **C_Template_Linux**

* Name

Type

* Key

* Host interface

User name

Password

* Type of information

Units

* Update interval

Custom intervals	Type	Interval	Period	Action
	<input checked="" type="checkbox"/> Flexible <input type="checkbox"/> Scheduling	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/>	Remove
	Add			

* History storage period

Warning OK

C_Template_Linux: CPU load too high on A test host for last 3 minutes

Show Recent problems Problems History

Host groups Select

Hosts Select

Application Select

Triggers Select

Problem

Minimum severity Not classified

Template Linked templates Macros

Template macros Inherited and template macros

Macro ⇒ Value Remove

Add

Update Clone Full clone Delete Delete and clear Cancel

Host Templates IPMI Macros Host inventory Encryption

Host macros Inherited and host macros

Macro ⇒ Effective value Change ← Template value Global value (configure)

⇒ Change ←

Add

Update Clone Full clone Delete Cancel

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
13:26:27	Warning		PROBLEM		Another host	CPU load too high on Another host for last 3 minutes (over 1)	11s	No		
13:25:11	Warning		PROBLEM		A test host	CPU load too high on A test host for last 3 minutes (over 0.9)	1m 27s	No		

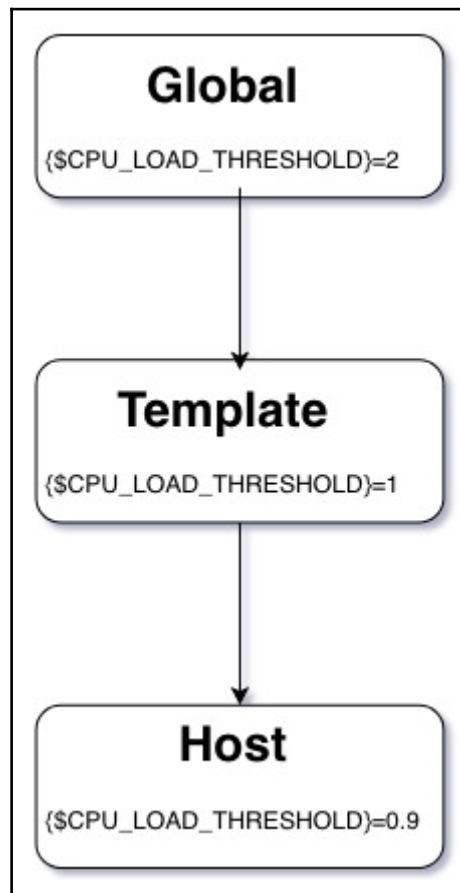
General Proxies Authentication User groups Users Media types Scripts Queue Training VM z4

Macros

Macros

Macro: ⇒ Value: [Remove](#)

[Add](#)



Template **Linked templates** Macros

* Template name

Visible name

* Groups
type here to search

Description

 [Details ▲](#) Cannot update host ✕


Item "net.tcp.service[smtp]" already exists on "Another host", inherited from another template.

Host **Templates** IPMI Inventory Encryption

Link templates

Replace

Clear when unlinking

 [Details](#) ▲ Items deleted ✕

- Deleted: Trigger "SMTP service is down" on "C_Template_Linux".
- Deleted: Trigger "Testfile is missing" on "C_Template_Linux".

Host Templates IPMI Inventory Encryption

Link templates

C_Template_Email ✕ C_Template_Linux ✕ Select

type here to search

Replace
 Clear when unlinking

Update Cancel

<input type="checkbox"/> Name ▲	Applications	Items	Triggers	Graphs	Screens	Discovery	Web	Linked templates	Linked to
<input type="checkbox"/> C_Template_Email	Applications	Items 2	Triggers 2	Graphs	Screens	Discovery	Web		Another host, A test host
<input type="checkbox"/> C_Template_Linux	Applications	Items 11	Triggers 4	Graphs	Screens	Discovery	Web		Another host, A test host

Displaying 2 of 2 found

All hosts / A test host Enabled zBX SNMP JMX IPMI Applications Items 14 Triggers 7 Graphs Discovery rules Web scenarios

Host Templates IPMI Macros Host inventory Encryption

Linked templates

Name	Action
C_Template_Email	Unlink Unlink and clear
C_Template_Linux	Unlink Unlink and clear

Link new templates

type here to search Select

[Add](#)

Update Clone Full clone Delete Cancel

[Details](#) ▲ Host updated ✕

- Unlinked: Item "SMTP server status" on "A test host".
- Unlinked: Item "Testfile exists" on "A test host".
- Templates "C_Template_Email" unlinked from hosts "A test host".

<input type="checkbox"/>	...	Testfile exists	Triggers 1	vfs.file.exists[/tmp/testfile]
<input type="checkbox"/>	...	C_Template_Linux: Web server status	Triggers 1	net.tcp.service[http,,80]
<input type="checkbox"/>	...	C_Template_Linux: Zabbix agent version		agent.version

[Details](#) ▲ Host updated ✕

- Deleted: Trigger "SMTP service is down" on "A test host".
- Deleted: Trigger "Testfile is missing" on "A test host".
- Templates "C_Template_Email" unlinked from hosts "A test host".

<input type="checkbox"/>	Name ▲	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates
<input type="checkbox"/>	Another host	Applications 1	Items 13	Triggers 7	Graphs	Discovery	Web	192.168.1.25:10050	C_Template_Email, C_Template_Linux
<input type="checkbox"/>	A test host	Applications	Items 12	Triggers 5	Graphs	Discovery	Web	192.168.1.29:10050	C_Template_Linux

Host **Templates** IPMI Inventory Encryption

Link templates

type here to search

Replace
 Clear when unlinking

Template **Linked templates** Macros

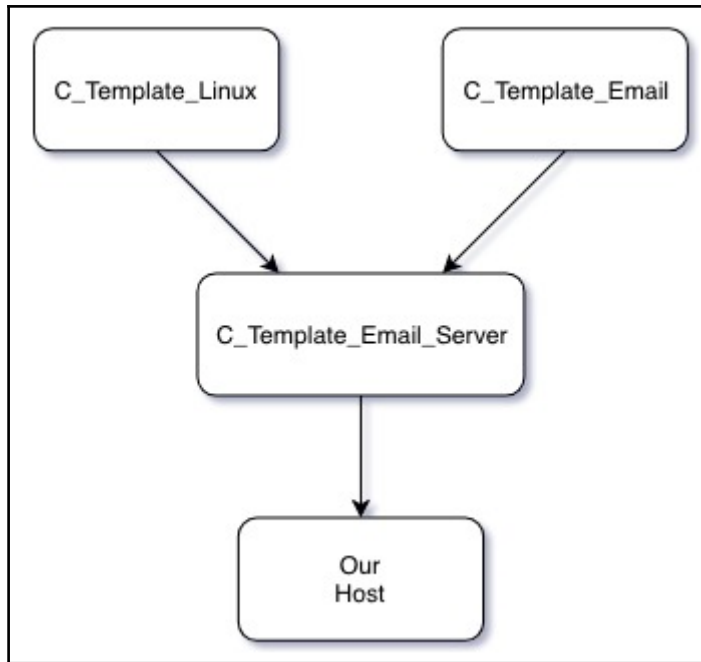
Linked templates

Name	Action
C_Template_Email	Unlink
C_Template_Linux	Unlink

Link new templates

type here to search

[Add](#)







[Another host](#) [Applications 1](#) [Items 13](#) [Triggers 7](#) [Graphs](#) [Discovery](#) [Web](#) 192.168.1.25: 10050 [C_Template_Email_Server](#)
([C_Template_Email](#),
[C_Template_Linux](#))

Item [Preprocessing](#)


Parent items [C_Template_Email](#) ⇒ [C_Template_Email_Server](#)

Chapter 9: Visualizing Data with Screens and Slideshows

[Edit dashboard](#)  

System information  

Parameter	Value	Details
Zabbix server is running	Yes	localhost:10051
Number of hosts (enabled/disabled/templates)	89	5 / 0 / 84
Number of items (enabled/disabled/not supported)	67	67 / 0 / 0
Number of triggers (enabled/disabled [problem/ok])	20	20 / 0 [6 / 14]
Number of users (online)	4	1
Required server performance, new values per second	5.07	

 [+ Add widget](#) [Save changes](#) [Cancel](#)

Dashboard properties

* Owner

Admin (Zabbix Administrator) ✕

Select

* Name

Global view

Apply

Cancel

Add widget

Type

Action log

Name

default

Refresh interval

Default (1 minute)

Sort entries by

Time (descending)

* Show lines

25

Add

✓ Action log

Clock

Data overview

Discovery status

Favourite graphs

Favourite maps

Favourite screens

Graph

Graph (classic)

Map

Map navigation tree

Plain text

Problem hosts

Problems

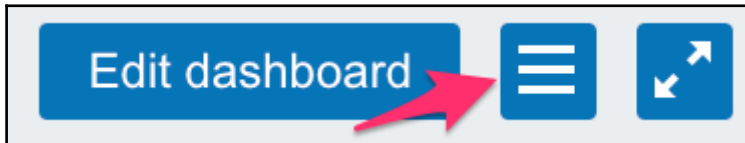
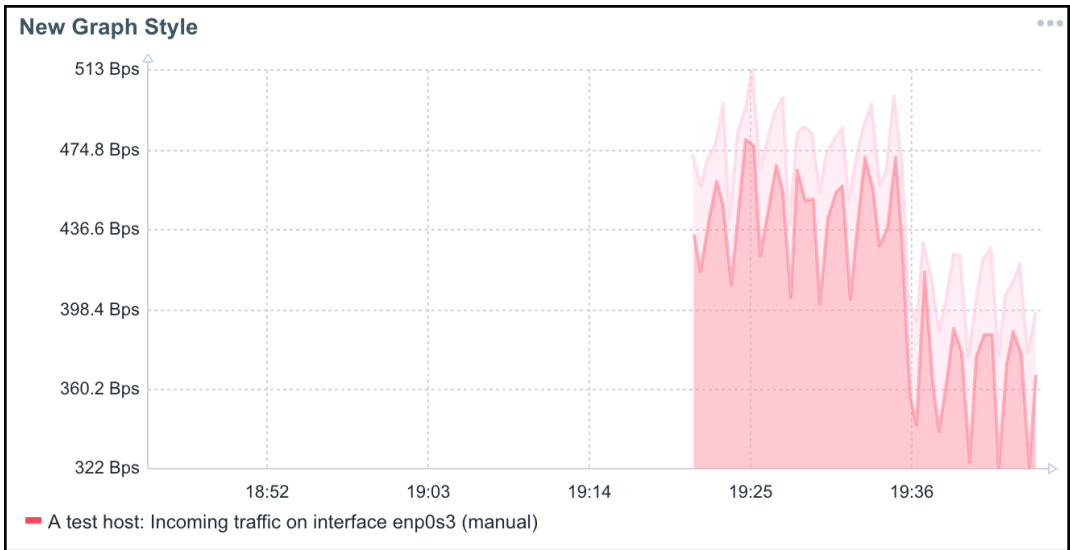
Problems by severity

System information

Trigger overview

URL

Web monitoring



Dashboard sharing

Type Private Public

List of user group shares

User groups	Permissions	Action
Add		

List of user shares

Users	Permissions	Action
Add		



Screens

Screen [Sharing](#)

* Owner

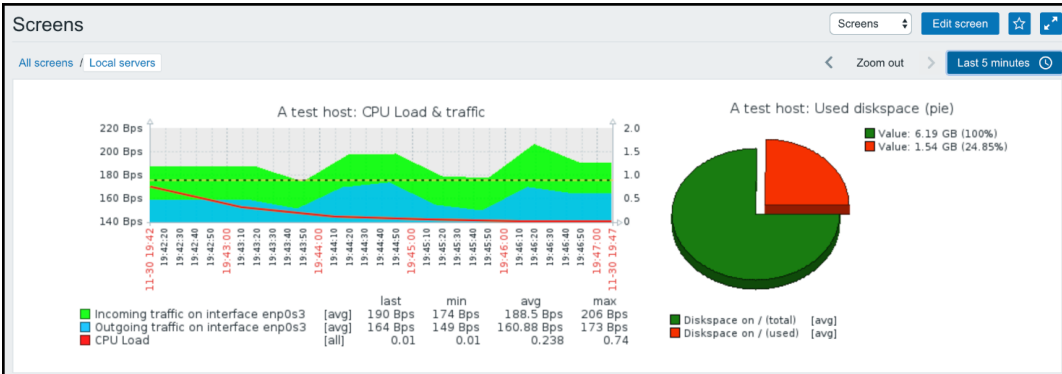
* Name

* Columns

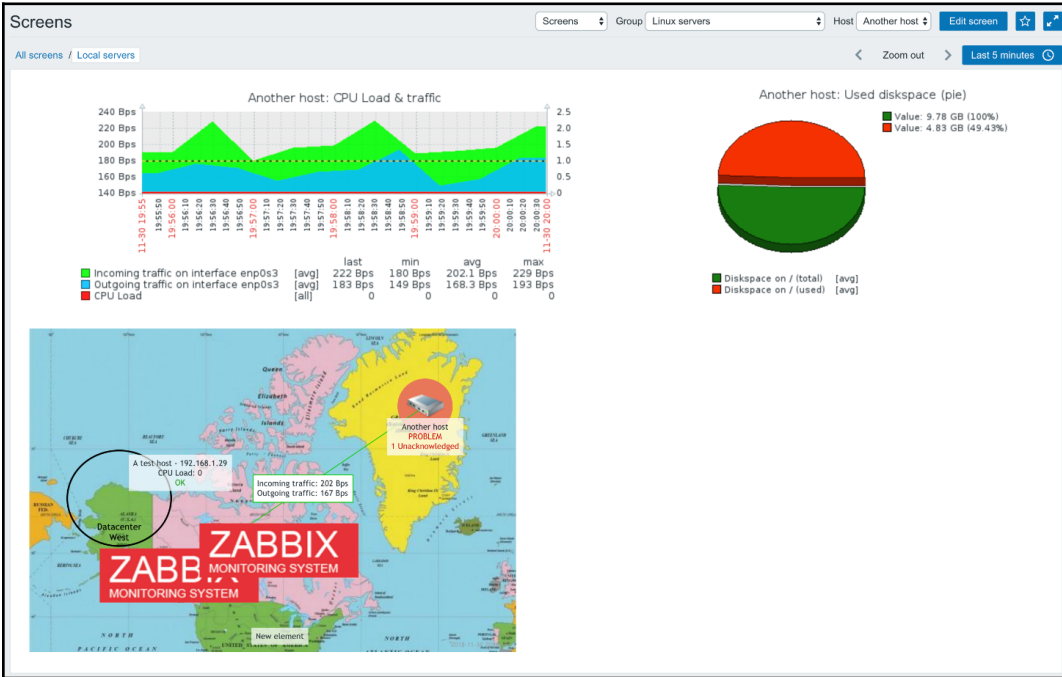
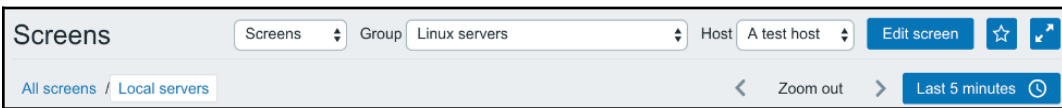
* Rows

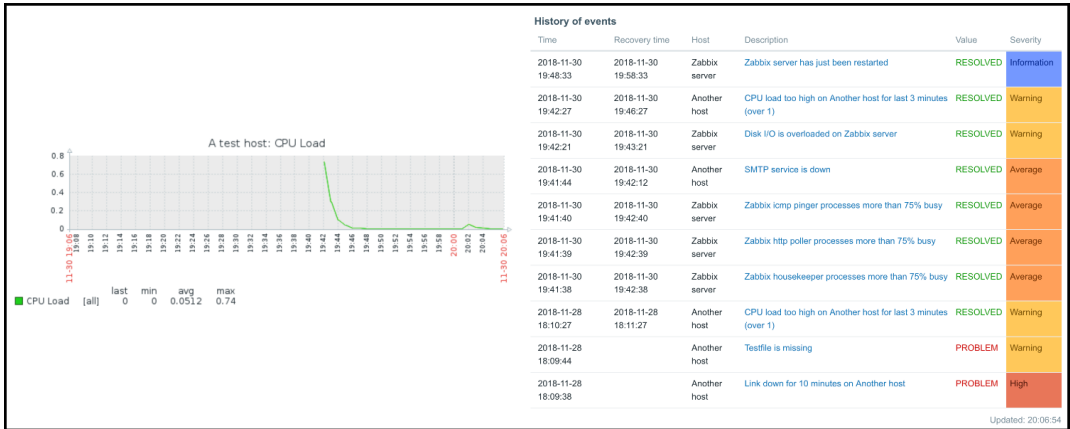
Screens: Local servers

<input type="button" value="+"/> <input type="button" value="Change"/>	<input type="button" value="+"/> <input type="button" value="Change"/>	<input type="button" value="+"/> <input type="button" value="Change"/>
<input type="button" value="+"/> <input type="button" value="Change"/>	<input type="button" value="-"/> <input type="button" value="Change"/>	<input type="button" value="-"/> <input type="button" value="Change"/>



Dynamic item





- Action log
- Clock
- Data overview
- Graph
- Graph prototype
- ✓ History of events
- Host group issues
- Host info
- Host issues
- Map
- Plain text
- Problems by severity
- Screen
- Simple graph
- Simple graph prototype
- System information
- Trigger info
- Trigger overview
- URL

Clock

✓ Graph

Graph prototype

Plain text

Simple graph

Simple graph prototype

URL

SCRIPTS

Detect operating system

Management ▶

Ping

Top CPU using processes

Traceroute

GO TO

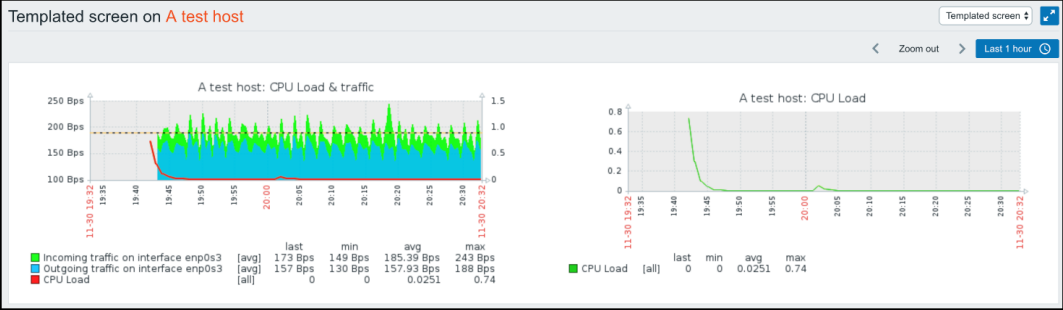
Host inventory

Latest data

Problems

Graphs

Host screens



Slide shows

Slide **Sharing**

* Owner

* Name

* Default delay

* Slides

Screen	Delay	Action
1: Local servers	<input type="text" value="default"/>	Remove
2: Experimental screen	<input type="text" value="5s"/>	Remove

[Add](#)

REFRESH INTERVAL MULTIPLIER

x0.25

x0.5

✓ x1

x1.5

x2

x3

x4

x5

Auto-login

Auto-logout

15m

* Refresh

60s

* Rows per page

50

Chapter 10: Advanced Item Monitoring

Item [Preprocessing](#)

* Name

Type

* Key

Type of information

* Update interval

* History storage period

<input type="checkbox"/>	First logfile	2018-12-01 11:09:29	2018-08-13 13:03:05 third ...
--------------------------	---------------	---------------------	-------------------------------

Timestamp	Local time	Value
2018-12-01 11:09:29		2018-08-13 13:03:05 third log entry
2018-12-01 11:09:29		2018-08-13 13:02:04 second log entry
2018-12-01 11:09:29		2018-08-13 13:01:03 a log entry

<input type="checkbox"/>	Second logfile	2018-12-01 11:42:08	2018-12-1 10:34:05 fourth...
--------------------------	----------------	---------------------	------------------------------

Timestamp	Local time	Value
2018-12-01 11:56:27	2018-12-1 10:54:05	sixth log entry - now with an error
2018-12-01 11:42:08	2018-12-1 10:34:05	fourth log entry

Timestamp	Local time	Value
2018-12-01 12:04:54	2018-12-1 11:05:05	eleventh log entry - warning 613
2018-12-01 12:03:57	2018-12-1 11:02:05	eighth log entry - just an error
2018-12-01 11:56:27	2018-12-1 10:54:05	sixth log entry - now with an error
2018-12-01 11:42:08	2018-12-1 10:34:05	fourth log entry

Timestamp	Local time	Value
2018-12-01 12:48:01	2018-12-1 03:00:00	rotated second
2018-12-01 12:46:03	2018-12-1 03:00:00	rotated first

PROBLEM event generation mode

Allow manual close

Trigger **Dependencies**

* Name

Severity

* Problem expression

[Expression constructor](#)

OK event generation

* Recovery expression

Show

Host groups

Hosts

Application

Triggers

Problem

Minimum severity

Age less than days

Host inventory

[Add](#)

Tags

[Add](#)

Show tags Tag name

Tag display priority

Show suppressed problems Show unacknowledged only

Compact view Show timeline

Show details Highlight whole row

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
13:04:42	<input type="checkbox"/> Warning		13:09:32	RESOLVED	A test host	warning on errors	4m 50s	No		

OK event generation

PROBLEM event generation mode

OK event closes


* Tag for matching

Tags

[Add](#)

Timestamp	Local time	Value
2018-12-01 13:23:29		15445
2018-12-01 13:23:29		5445
2018-12-01 13:23:29		445

Item Preprocessing

Preprocessing steps	Name	Parameters	Action
	Regular expression	pattern	output Remove

[Add](#)

Log time format

Timestamp	Local time	Value
2018-12-01 17:40:51	2018-12-01 17:40:13	2018-12-01 16:40:13 a timestamped log entry
2018-12-01 13:09:32		ok



A test host: Second logfile

View as: Values As plain text

Zoom out Last 6 hours Filter

Items list: A test host: Second logfile Select

Value:

Selected: Show selected

Apply Reset

Timestamp	Local time	Value
2018-12-01 12:04:54	2018-12-1 11:05:05	eleventh log entry - warning 613
2018-12-01 12:03:57	2018-12-1 11:02:05	eighth log entry - just an error
2018-12-01 11:56:27	2018-12-1 10:54:05	sixth log entry - now with an error

Items list: A test host: Second logfile Select

Value: error

Selected: Mark selected as Red
 as Green
 as Blue

Apply Reset

<input type="checkbox"/>	Diskspace on / (free)	2018-12-01 18:02:43	4.65 GB
<input type="checkbox"/>	Diskspace on / (total)	2018-12-01 18:02:20	6.19 GB
<input type="checkbox"/>	Diskspace on / (used)	2018-12-01 18:02:24	1.54 GB

Host	Name	Last check	Last value	Change
▼ A test host	cpu (2 Items)			
<input type="checkbox"/>	Average system load for both servers	2018-12-01 18:13:44	0.81	Graph
<input type="checkbox"/>	CPU Load	2018-12-01 18:13:11	1.62	+0.64 Graph
▼ Another host	cpu (1 Item)			
<input type="checkbox"/>	CPU Load	2018-12-01 18:13:27	0	Graph

Item **Preprocessing**

* Name

Type

* Key

Type of information


Units

* Update interval

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	
▼ <input type="checkbox"/> <u>Another host</u>	- other - (1 Item)				
<input type="checkbox"/>	CPU Load	2018-12-02 13:18:27	0.87	+0.51	Graph
▼ <input type="checkbox"/> <u>A test host</u>	- other - (3 Items)				
<input type="checkbox"/>	Average system load for both servers	2018-12-02 13:18:14	0.9	+0.49	Graph
<input type="checkbox"/>	Average system load for Linux servers	2018-12-02 13:18:15	0.9	+0.49	Graph
<input type="checkbox"/>	CPU Load	2018-12-02 13:18:11	1.43	+0.98	Graph

<input type="checkbox"/>	Open connections	2018-12-02 13:38:53	28	Graph
--------------------------	------------------	---------------------	----	-----------------------

<input type="checkbox"/>	Open connections	2018-12-02 13:45:05	28
<input type="checkbox"/>	Open connections in ESTABLISHED state	2018-12-02 13:45:05	1
<input type="checkbox"/>	Open connections in TIME_WAIT state	2018-12-02 13:45:05	27

Item **Preprocessing** 

* Name

Type

* Key

Type of information


Units

* Update interval

* History storage period

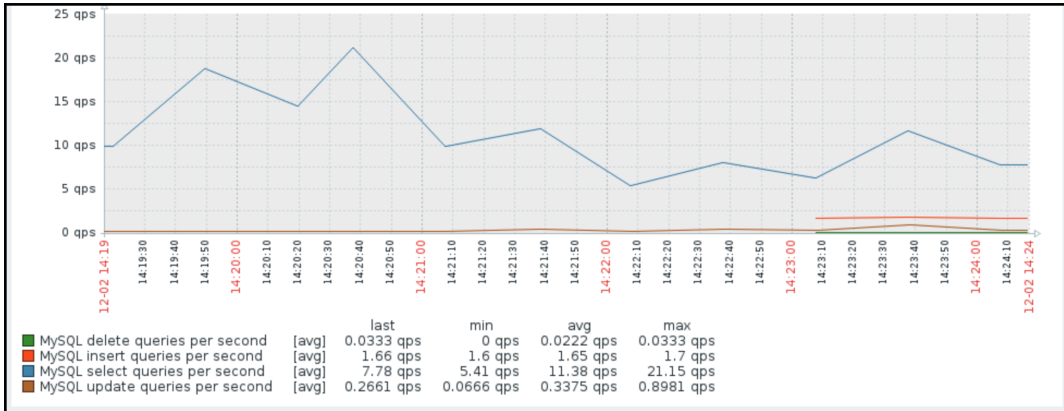
* Trend storage period

Show value [show value mappings](#)

 New application

<input type="checkbox"/>	MySQL select queries per second	2018-12-02 14:18:20	9.76 qps	-1.65 qps
--------------------------	---------------------------------	---------------------	----------	-----------

<input type="checkbox"/>	...	MySQL select queries per second	mysql.queries[select]
<input type="checkbox"/>	...	MySQL update queries per second	mysql.queries[update]
<input type="checkbox"/>	...	MySQL insert queries per second	mysql.queries[insert]
<input type="checkbox"/>	...	MySQL delete queries per second	mysql.queries[delete]



Certificate expiry time on www.google.com 2018-12-02 14:49:54 2019-01-30 10:59:00

Value mapping

Value mapping

* Name: Certificate expiry status

Value	Mapped to	Action
0	Expires soon	Remove
1	Does not expire yet	Remove

[Add](#)

Amount of persons in the room 2018-12-02 15:03:41 2 +1

Allowed hosts 192.168.1.23

Item Preprocessing

* Name Users logged in (SSH)

Type SSH agent

* Key ssh.run[system.users]

* Host interface 192.168.1.29 : 10050

Authentication method Password

* User name zabbixtest

Password zabbix

* Executed script `who | wc -l`




Zabbix master item

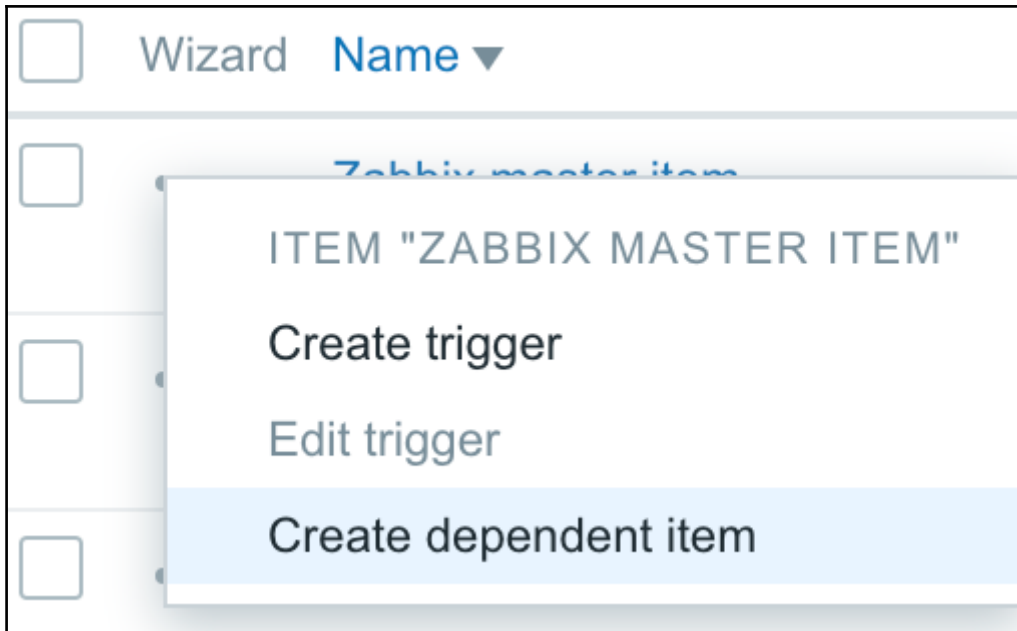
2018-12-02 16:12:03

Aborted_clients 0 Abo...

[History](#)

Timestamp	Value
2018-12-02 16:14:03	Aborted_clients 0
	Aborted_connects 2
	Access_denied_errors 0
	Aria_pagecache_blocks_not_flushed 0
	Aria_pagecache_blocks_unused 15737
	Aria_pagecache_blocks_used 1
	Aria_pagecache_read_requests 80
	Aria_pagecache_reads 0
	Aria_pagecache_write_requests 24
	Aria_pagecache_writes 0
	Aria_transaction_log_syncs 0
	Binlog_commits 0
	Binlog_group_commits 0
	Binlog_snapshot_file
	Binlog_snapshot_position 0

 Zabbix master item



Item Preprocessing

* Name

Type

* Key

* Master item

Type of information

* History storage period

Show value [show value mappings](#)

New application

This screenshot shows the "Preprocessing" configuration page for a Zabbix item. The page is titled "Item Preprocessing". The configuration fields are as follows: "Name" is "Innodb_deadlocks" (highlighted in yellow); "Type" is "Dependent item"; "Key" is "Innodb.deadlocks" with a "Select" button; "Master item" is "A test host: Zabbix master item" with a "Select" button; "Type of information" is "Character"; "History storage period" is "90d"; "Show value" is "As is" with a "show value mappings" link; and "New application" is "MySQL-Dependent" (highlighted in green).

Item Preprocessing

Preprocessing steps

Name	Parameters	Action
Regular expression	Innodb_deadlocks\s(\d.\1	Remove

[Add](#)

<input type="checkbox"/>	Wizard	Name	Triggers	Key	Interval	History	Trends	Type	Applications	Status	Info
<input type="checkbox"/>	...	Zabbix master item		mysql.dependent	30s	90d		Zabbix agent (active)	MySQL-Master	Enabled	
<input type="checkbox"/>	...	Zabbix master item: Innodb_deadlocks		Innodb.deadlocks		90d		Dependent item	MySQL-Dependent	Enabled	
<input type="checkbox"/>	...	Zabbix master item: Aborted_clients		Aborted.clients		90d		Dependent item	MySQL-Dependent	Enabled	

Name ▲	Last check	Last value
MySQL-Dependent (2 Items)		
Aborted_clients	2018-12-02 16:47:06	0
Innodb_deadlocks	2018-12-02 16:47:06	0

Text

Regular expression

Trim

Right trim

Left trim

Structured data

XML XPath

JSON Path

Arithmetic

Custom multiplier

Change

Simple change

✓ **Change per second**

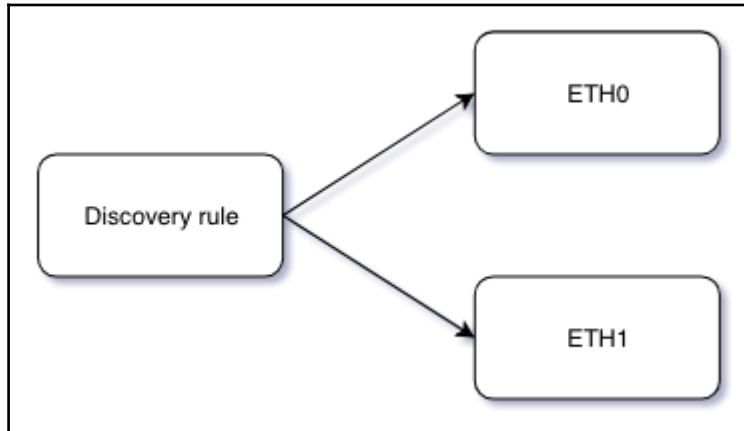
Numeral systems

Boolean to decimal

Octal to decimal

Hexadecimal to decimal

Chapter 11: Automating Configuration



Discovery rule [Filters](#)

* Name

Type ▾

* Key

* Update interval

Item prototype **Preprocessing**

* Name

Type

* Key

Type of information

Units

Key	Interval	Type	Status	Info
net.if.discovery	120s	Zabbix agent	Enabled	

Cannot create item: item with the same key "net.if.in[enp0s3]" already exists.
 Cannot create item: item with the same key "net.if.in[lo]" already exists.

* Name

Type

* Key

DISCOVERY
Discovered 4 Regular 431

INTERVAL
1s 0 2s 0 30s 4 1m 0 2m 0 3m 0

<input type="checkbox"/>	Wizard	Name	Triggers	Key	Interval	History	Trends	Type	Applications	Status	Info
<input type="checkbox"/>	***	Interface discovery: Outgoing traffic on enp0s3		net.if.out[enp0s3]	30s	90d	365d	Zabbix agent		Enabled	
<input type="checkbox"/>	***	Interface discovery: Outgoing traffic on lo		net.if.out[lo]	30s	90d	365d	Zabbix agent		Enabled	
<input type="checkbox"/>	***	Interface discovery: Incoming traffic on lo		net.if.in[lo]	30s	90d	365d	Zabbix agent		Enabled	
<input type="checkbox"/>	***	Interface discovery: Incoming traffic on enp0s3		net.if.in[enp0s3]	30s	90d	365d	Zabbix agent		Enabled	

Displaying 4 of 4 found

Trigger prototype Dependencies

* Name

Severity

* Expression

<input type="checkbox"/>	Warning	OK	Interface discovery: Incoming traffic too high for lo on {HOST.NAME}.	{A test host:net.if.in[lo].last()}>5K	Enabled
<input type="checkbox"/>	Warning	OK	Interface discovery: Outgoing traffic too high for enp0s3 on {HOST.NAME}.	{A test host:net.if.out[enp0s3].last()}>5K	Enabled
<input type="checkbox"/>	Warning	OK	Interface discovery: Outgoing traffic too high for lo on {HOST.NAME}.	{A test host:net.if.out[lo].last()}>5K	Enabled
<input type="checkbox"/>	Warning	OK	Interface discovery: Incoming traffic too high for enp0s3 on {HOST.NAME}.	{A test host:net.if.in[enp0s3].last()}>5K	Enabled

* Items

	Name	Function	Draw style	Y axis side	Colour	Action
1:	C_Template_Linux: Incoming traffic on {#IFNAME}	avg	Gradient line	Left	1A7C11	Remove
2:	C_Template_Linux: Outgoing traffic on {#IFNAME}	avg	Gradient line	Left	F63100	Remove

[Add](#) [Add prototype](#)

<input type="checkbox"/>	Interface discovery: Traffic on enp0s3	900	200	Normal
<input type="checkbox"/>	Interface discovery: Traffic on lo	900	200	Normal

Filters

Label	Macro	Regular expression	Action
A	{#IFNAME}	matches @Network interfaces for discovery	Remove

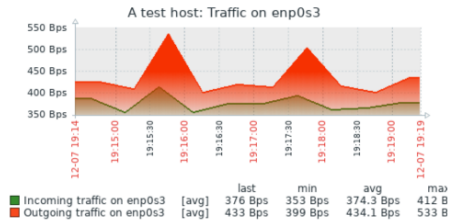
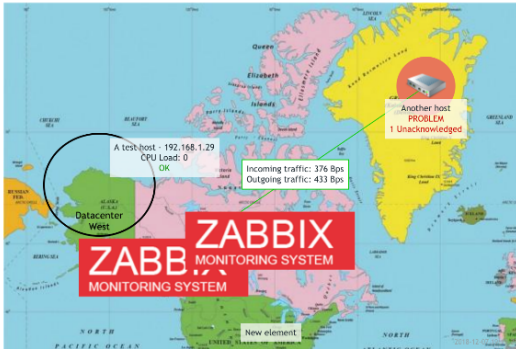
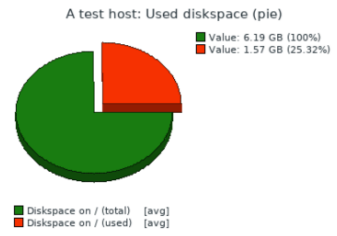
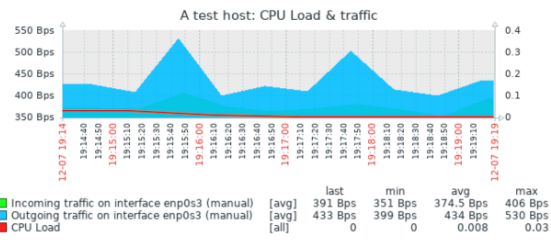
[Add](#)

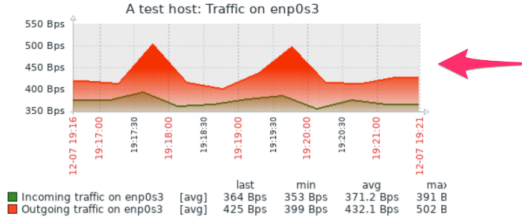
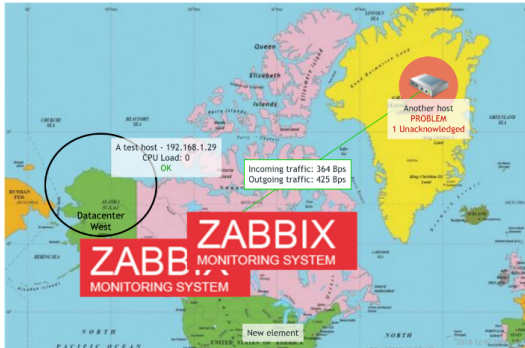
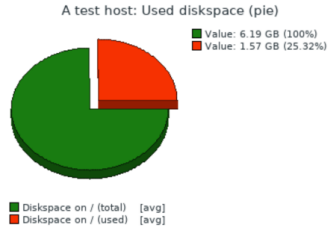
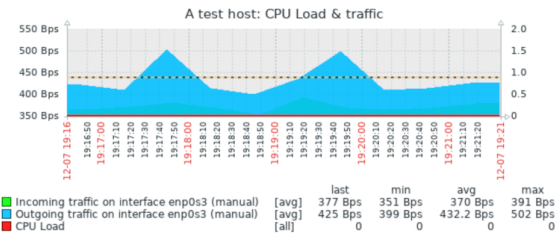
<input type="checkbox"/>	Network interfaces for discovery	1 » ^[Ss]ystem\$	[Result is FALSE]
		2 » ^[Ll]o[0-9.]*\$	[Result is FALSE]
		3 » ^NULL[0-9.]*\$	[Result is FALSE]
		4 » ^(\n)?[Ll]oop[Bb]ack[0-9.]*\$	[Result is FALSE]
		5 » ^Software Loopback Interface	[Result is FALSE]
		6 » ^Nu[0-9.]*\$	[Result is FALSE]

<input type="checkbox"/>	***	Interface discovery: Total traffic on lo over last 10 minutes	calc.net.if.total.10m[lo]	600s	90d	365d	Calculated	Enabled		
<input type="checkbox"/>	***	C_Template_Linux: SSH server status	Triggers 1 net.tcp.service[ssh]	The item is not discovered anymore and will be deleted in 29d 23h 51m (on 2019-01-04 at 21:19)						

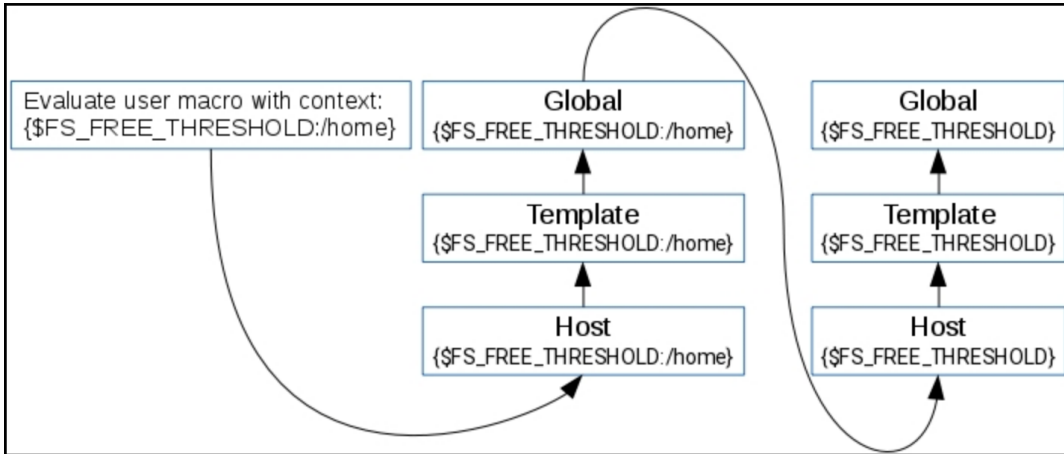
* Keep lost resources period 30d

<input type="checkbox"/>	***	Filesystem discovery: Free space on /boot	vfs.fs.size[/boot,free]	30s	90d	365d	Zabbix agent	Enabled
<input type="checkbox"/>	***	Filesystem discovery: Free space on /	vfs.fs.size[/,free]	30s	90d	365d	Zabbix agent	Enabled





Action log
Clock
Data overview
Graph
Graph prototype
History of events
Host group issues
Host info
Host issues
Map
Plain text
Problems by severity
Screen
Simple graph
✓ Simple graph prototype
System information
Trigger info
Trigger overview
URL



Discovery rule [Filters](#)

* Name

Type

* Key

* Host interface

* SNMP OID

* SNMP community

Port

* Update interval

Item prototype **Preprocessing**

* Name	<input type="text" value="Incoming traffic on interface \$1 (SNMP LLD)"/>
Type	<input type="text" value="SNMPv2 agent"/>
* Key	<input type="text" value="lld.ifInOctets[#{IFDESCR}"/> <input type="button" value="Select"/>
* Host interface	<input type="text" value="192.168.1.29 : 161"/>
* SNMP OID	<input type="text" value="IF-MIB::ifInOctets.#{SNMPINDEX}"/>
* SNMP community	<input type="text" value="public"/>
Port	<input type="text"/>
Type of information	<input type="text" value="Numeric (unsigned)"/>
Units	<input type="text" value="Bps"/>
* Update interval	<input type="text" value="30s"/>

SNMP interface discovery: Incoming traffic on interface enp0s3 (SNMP LLD)	lld.ifInOctets[enp0s3]
SNMP interface discovery: Incoming traffic on interface lo (SNMP LLD)	lld.ifInOctets[lo]
SNMP interface discovery: Incoming traffic on interface enp0s8 (SNMP LLD)	lld.ifInOctets[enp0s8]

MySQL database discovery: Database information_schema size	mysql.db.size[information_schema]
MySQL database discovery: Database zabbix size	mysql.db.size[zabbix]

NAME ▲	LAST CHECK	LAST VALUE
MySQL (6 Items)		
Database information_schema size	2016-05-11 10:45:42	144 KB
Database zabbix size	2016-05-11 10:45:42	77.89 MB

✓ **Character string included**

Any character string included
 Character string not included
 Result is TRUE
 Result is FALSE



Expressions [Test](#)

* Name

* Expressions

Expression type	Expression	Delimiter	Case sensitive	Action
Result is FALSE	<input type="text" value="^!o\$"/>		<input type="checkbox"/>	Remove

[Add](#)

Expressions **Test**

Test string

1A2

Test expressions

Result

Expression type	Expression	Result
Character string included	A	TRUE
Result is TRUE	^[0-9]	TRUE
Result is FALSE	[0-9]\$	FALSE
Combined result		FALSE

Add

Cancel

<input type="checkbox"/> File systems for discovery	1 » ^(btrfs ext2 ext3 ext4 jfs reiser xfs jfs ufs jfs2 vxfs hfs refs ntfs fat32 zfs)\$ [Result is TRUE]
<input type="checkbox"/> Network interfaces for discovery	1 » ^Nu[0-9]*\$ [Result is FALSE]
	2 » ^[Ss]system\$ [Result is FALSE]
	3 » ^[Ll]o[0-9]*\$ [Result is FALSE]
	4 » ^NULL[0-9]*\$ [Result is FALSE]
	5 » ^(?[Ll]oop[Bb]ack[0-9_]*)\$ [Result is FALSE]
	6 » ^Software Loopback Interface [Result is FALSE]
<input type="checkbox"/> Storage devices for SNMP discovery	1 » ^(Physical memory Virtual memory Memory buffers Cached memory Swap space)\$ [Result is FALSE]
<input type="checkbox"/> Windows service names for discovery	1 » ^(\MMCSS gupdate SysmonLog clr_optimization_v2.0.50727_32 clr_optimization_v4.0.30319_32)\$ [Result is FALSE]
<input type="checkbox"/> Windows service startup states for discovery	1 » ^(automatic automatic delayed)\$ [Result is TRUE]

Discovery rules

* Name

Discovery by proxy

* IP range

* Update interval

* Checks [New](#)

Check type

[Add](#) [Cancel](#)

Device uniqueness criteria IP address

Enabled

Add

Cancel

Status of discovery

Discovery rule

all



Discovered device ▲	Monitored host	Uptime/Downtime	ICMP ping
A test discovery (4 devices)			
192.168.1.18		00:02:42	2m 42s
192.168.1.23 (zabbixserver)	snmptraps	00:00:30	30s
192.168.1.25	Another host	00:00:26	26s
192.168.1.29	A test host	00:00:16	16s

* Checks

FTP

[Edit](#) [Remove](#)

ICMP ping

[Edit](#) [Remove](#)

SMTP

[Edit](#) [Remove](#)

[New](#)

Discovered device ▲	Monitored host	Uptime/Downtime	ICMP ping	SMTP
A test discovery (4 devices)				
192.168.1.18		00:15:31	15m 31s	
192.168.1.23 (zabbixserver)	snmptraps	00:13:19	13m 19s	
192.168.1.25	Another host	00:13:15	13m 15s	2m 30s

Discovered device ▲	Monitored host	Uptime/Downtime	ICMP ping	SMTP
A test discovery (4 devices)				
192.168.1.18		00:31:03	31m 3s	
192.168.1.23 (localhost)	snmptraps	00:28:51	28m 51s	10s
192.168.1.25	Another host	00:28:47	28m 47s	18m 2s
192.168.1.29	A test host	00:28:37	28m 37s	

- Discovery check
- Discovery object
- Discovery rule
- Discovery status
- ✓ Host IP
- Proxy
- Received value
- Service port
- Service type
- Uptime/Downtime

Action Operations

Default subject

Default message

Operations

Details	Action
Add to host groups: Linux servers	Edit Remove
New	

* At least one operation must exist.

* Groups

- ✓ Send message
- Remote command
- Add host
- Remove host
- Add to host group
- Remove from host group
- Link to template
- Unlink from template
- Enable host
- Disable host
- Set host inventory mode

Device uniqueness criteria IP address Zabbix agent "system.uname"

Host metadata

✓ Host name

Proxy

Chapter 12: Monitoring Web Pages

Step of web scenario ✕

* Name

* URL

Query fields

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="value"/> Remove

[Add](#)

Post type

Raw post

Variables

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="value"/> Remove

[Add](#)

Headers

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="value"/> Remove

[Add](#)

Follow redirects

Retrieve only headers

* Timeout

Required string

Required status codes

Step of web scenario

* Name

* URL

Query fields

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Post type Form data Raw data

Post fields

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Variables

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Headers

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Follow redirects

Retrieve only headers

* Timeout

Required string

Required status codes

Web monitoring

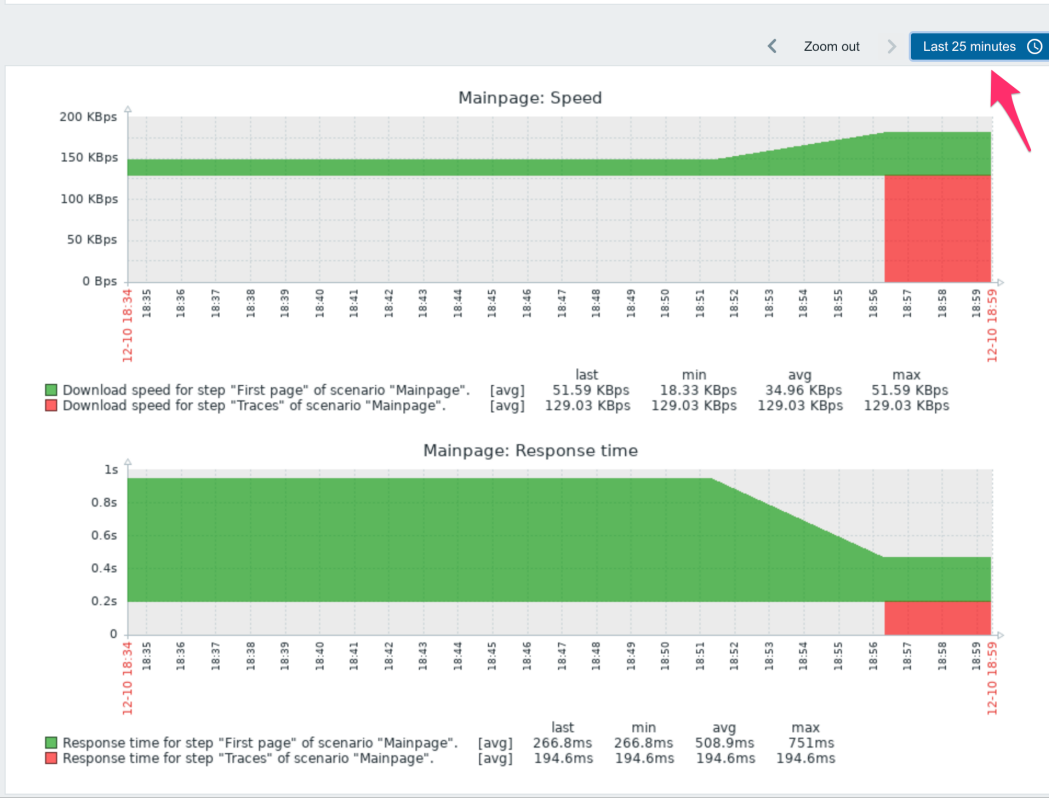
Group **Web pages** Host **OpenStreetMap**

Host	Name ▲	Number of steps	Last check	Status
OpenStreetMap	Mainpage	2	2018-12-10 18:56:22	OK

Displaying 1 of 1 found

Details of web scenario: Mainpage

Step	Speed	Response time	Response code	Status
First page	51.59 KBps	266.8ms	200	OK
Traces	129.03 KBps	194.6ms	200	OK
TOTAL		461.4ms		OK



<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change	
▼ <input type="checkbox"/> OpenStreetMap	Webpage (9 Items)				
<input type="checkbox"/>	Download speed for scenario "Mainpage".	2018-12-10 19:01:22	103.01 KBps	+12.7 KBps	Graph
<input type="checkbox"/>	Download speed for step "First page" of scenario "Mainpage".	2018-12-10 19:01:22	52.11 KBps	+532 Bps	Graph
<input type="checkbox"/>	Download speed for step "Traces" of scenario "Mainpage".	2018-12-10 19:01:22	153.92 KBps	+24.88 KBps	Graph
<input type="checkbox"/>	Failed step of scenario "Mainpage".	2018-12-10 19:01:22	0		Graph
<input checked="" type="checkbox"/>	Last error message of scenario "Mainpage".				Hist...
<input type="checkbox"/>	Response code for step "First page" of scenario "Mainpage".	2018-12-10 19:01:22	200		Graph
<input type="checkbox"/>	Response code for step "Traces" of scenario "Mainpage".	2018-12-10 19:01:22	200		Graph
<input type="checkbox"/>	Response time for step "First page" of scenario "Mainpage".	2018-12-10 19:01:22	264.1ms		Graph
<input type="checkbox"/>	Response time for step "Traces" of scenario "Mainpage".	2018-12-10 19:01:22	163.6ms	- 30ms	Graph

Internet Explorer

Internet Explorer 11.0
Internet Explorer 10.0
Internet Explorer 9.0
Internet Explorer 8.0
Internet Explorer 7.0
Internet Explorer 6.0

Mozilla Firefox

Firefox 33.0 (Windows)
Firefox 33.0 (Linux)
Firefox 33.0 (Mac)

Google Chrome

Chrome 38.0 (Windows)
Chrome 38.0 (Linux)

Chrome 38.0 (Mac)

Chromium 37.0 (Linux)

Opera

Opera 25.0 (Windows)
Opera 25.0 (Mac)
Opera 12.16 (Linux)
Opera Mobile 12.02
Opera Mini 9.80

Safari

Safari 7.0.6 (Mac)
Safari 5.1.7 (Windows)
Safari 6.0 (iPad)
Safari 5.0.2 (iPhone)

Others

✓ Zabbix
Konqueror 4.14.2
Lynx 2.8.8rel.2
Links 2.8
Android Webkit Browser 4.4.4
Googlebot 2.1
other ...

HTTP proxy

http://[user[:password]@]proxy.example.com[:port]

Condition



* Item OpenStreetMap: Failed step of scenario "Mainpage".

Select

Function last() - Last (most recent) T value

Last of (T) Count

Time shift Time

* Result <>

Insert

Cancel

* Name

Application

New application

* Update interval

* Attempts

Agent

HTTP proxy

Variables

Name	Value	
<input type="text" value="{user}"/>	<input type="text" value="Admin"/>	Remove
<input type="text" value="{password}"/>	<input type="text" value="zabbix"/>	Remove
Add		

Headers

Name	Value	
<input type="text" value="name"/>	<input type="text" value="value"/>	Remove
Add		

Enabled

Step of web scenario

* Name

* URL

Query fields

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="value"/> Remove

[Add](#)

Post type Form data Raw data

Post fields

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="{user}"/> Remove
<input type="text" value="password"/>	⇒	<input type="text" value="{password}"/> Remove
<input type="text" value="enter"/>	⇒	<input type="text" value="Sign in"/> Remove

[Add](#)

Variables

Name	Value	
<input type="text" value="{sid}"/>	⇒	<input content='\"([0-9]"/' csrf-token\"="" type="text" value="regex:name=\"/> Remove

[Add](#)

Headers

Name	Value	
<input type="text" value="name"/>	⇒	<input type="text" value="value"/> Remove

[Add](#)

Follow redirects

Retrieve only headers

* Timeout

Required string

Required status codes

Step of web scenario

* Name

* URL

Query fields

Name	Value	
<input type="text" value="reconnect"/>	⇒ <input type="text" value="1"/>	Remove
<input type="text" value="sid"/>	⇒ <input type="text" value="{sid}"/>	Remove

[Add](#)

Post type Form data Raw data

Post fields

Name	Value	
<input type="text" value="name"/>	⇒ <input type="text" value="value"/>	Remove

[Add](#)

Variables

Name	Value	
<input type="text" value="name"/>	⇒ <input type="text" value="value"/>	Remove

[Add](#)

Headers

Name	Value	
<input type="text" value="name"/>	⇒ <input type="text" value="value"/>	Remove

[Add](#)

Follow redirects

Retrieve only headers

* Timeout

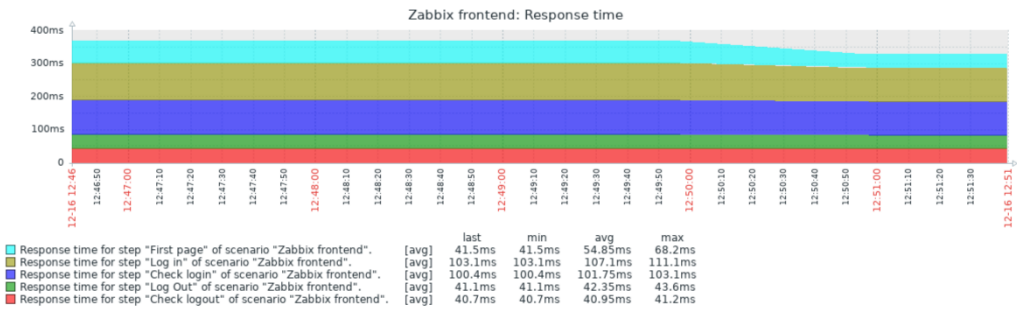
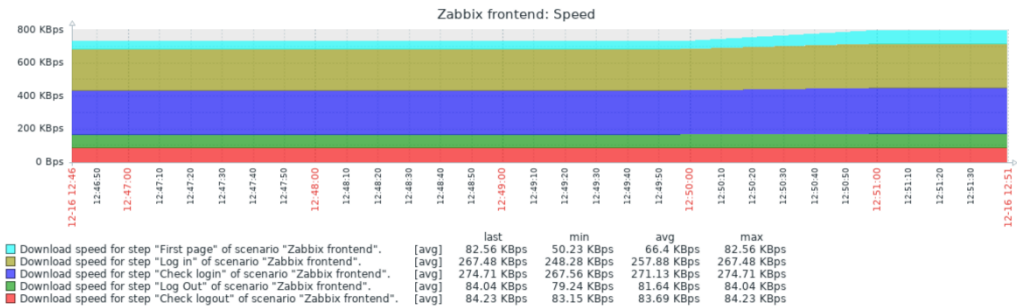
Required string

Required status codes

Details of web scenario: Zabbix frontend

Step	Speed	Response time	Response code	Status
First page	82.56 KBps	41.5ms	200	OK
Log in	267.48 KBps	103.1ms	200	OK
Check login	274.71 KBps	100.4ms	200	OK
Log Out	84.04 KBps	41.1ms	200	OK
Check logout	84.23 KBps	40.7ms	200	OK
TOTAL		326.8ms		OK

Zoom out Last 5 minutes



Scenario Steps **Authentication**

HTTP authentication

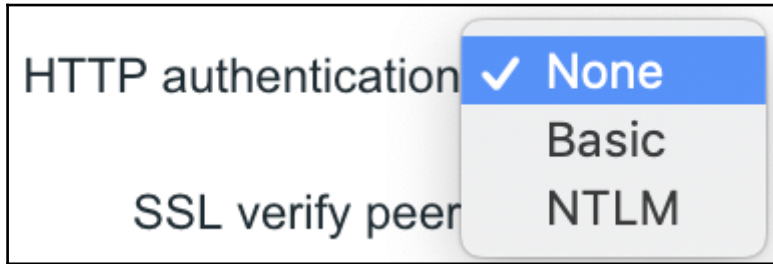
SSL verify peer

SSL verify host

SSL certificate file

SSL key file

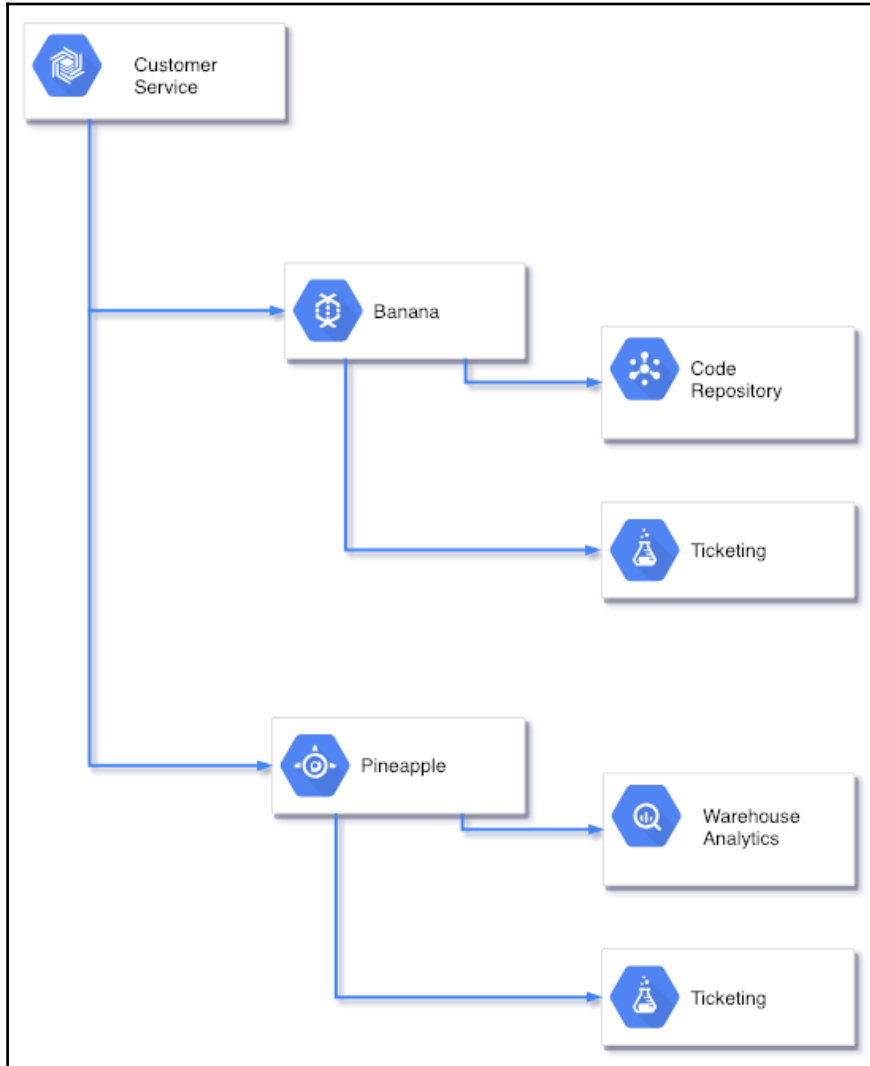
SSL key password



<input type="checkbox"/>	Zabbix main page	2018-12-16 14:01:08	HTTP/1.1 200 OK ...	Hist...
<input type="checkbox"/>	Zabbix remembers me for	2018-12-16 14:01:10	30	Hist...
<input type="checkbox"/>	Zabbix main page load time	2018-12-16 14:01:09	61.4ms	+10ms Graph

▼ <input type="checkbox"/> Host	Name ▲	Last check	Last value	Change
▼	A test host	OSM (1 Item)		
<input type="checkbox"/>	OpenStreetMap main page	2018-12-16 14:20:11	HTTP/1.1 200 OK ...	Hist...

Chapter 13: High-Level Business Service Monitoring



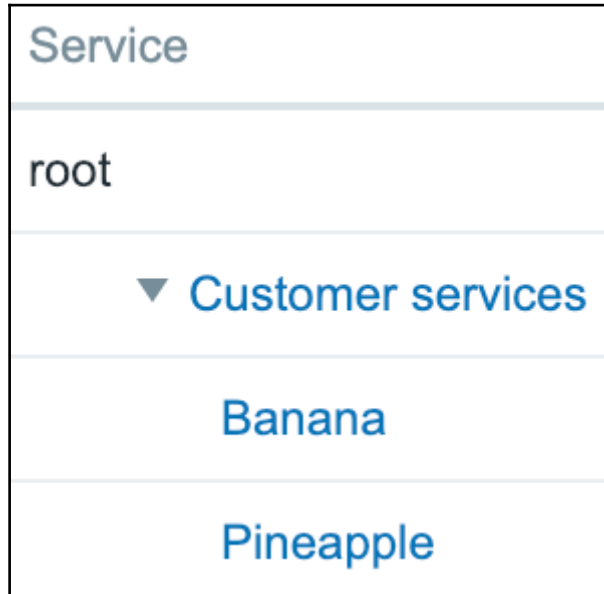
All hosts / IT services Enabled [ZBX | SNMP | JMX | IPMI] Applications 1 Items 3 Triggers 3 Graphs Discovery rules Web scenarios Filter

<input type="checkbox"/>	Wizard	Name ▲	Triggers	Key	Interval	History	Trends	Type	Applications	Status	Info
<input type="checkbox"/>	...	Code repository service	Triggers 1	code_repo	90d	365d		Zabbix trapper	IT services	Enabled	
<input type="checkbox"/>	...	Ticketing service	Triggers 1	ticketing	90d	365d		Zabbix trapper	IT services	Enabled	
<input type="checkbox"/>	...	Warehouse analytics service	Triggers 1	warehouse_analytics	90d	365d		Zabbix trapper	IT services	Enabled	

Displaying 3 of 3 found

<input type="checkbox"/>	Severity	Value	Name ▲	Expression	Status	Info	Tags
<input type="checkbox"/>	High	OK	Code repository down	{IT services:code_repo.last()}=0	Enabled		
<input type="checkbox"/>	High	OK	Ticketing down	{IT services:ticketing.last()}=0	Enabled		
<input type="checkbox"/>	High	OK	Warehouse analytics down	{IT services:warehouse_analytics.last()}=0	Enabled		

Displaying 3 of 3 found



Service **Dependencies** Time

* Name


* Parent service

Status calculation algorithm

Calculate SLA, acceptable SLA (in %)







Trigger

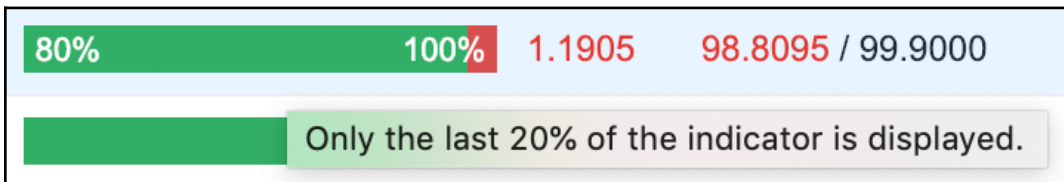
* Sort order (0->999)

 **Details ▲ Cannot update service** ✕

Service "Ticketing" is already hardlinked to a different service.

Service	Action	Status calculation	Trigger
root	Add child		
▼ Customer services	Add child	Problem, if at least one child has a problem	
▼ Banana	Add child	Problem, if at least one child has a problem	
Code repository	Add child Delete	Problem, if at least one child has a problem	Code repository down
Ticketing	Add child Delete	Problem, if at least one child has a problem	Ticketing down
▼ Pineapple	Add child	Problem, if at least one child has a problem	
Ticketing	Add child Delete	Problem, if at least one child has a problem	Ticketing down
Warehouse analytics	Add child Delete	Problem, if at least one child has a problem	Warehouse analytics down

Service	Status	Reason	Problem time	SLA / Acceptable SLA
root				
▼ Customer services	OK			
▼ Banana	OK			1.1905 98.8095 / 99.9000
Code repository - Code repository down	OK			1.1905 98.8095 / 99.9000
Ticketing - Ticketing down	OK			0.0000 100.0000 / 99.9000
▼ Pineapple	OK			0.0000 100.0000 / 99.9000
Ticketing - Ticketing down	OK			0.0000 100.0000 / 99.9000
Warehouse analytics - Warehouse analytics down	OK			0.0000 100.0000 / 99.9000



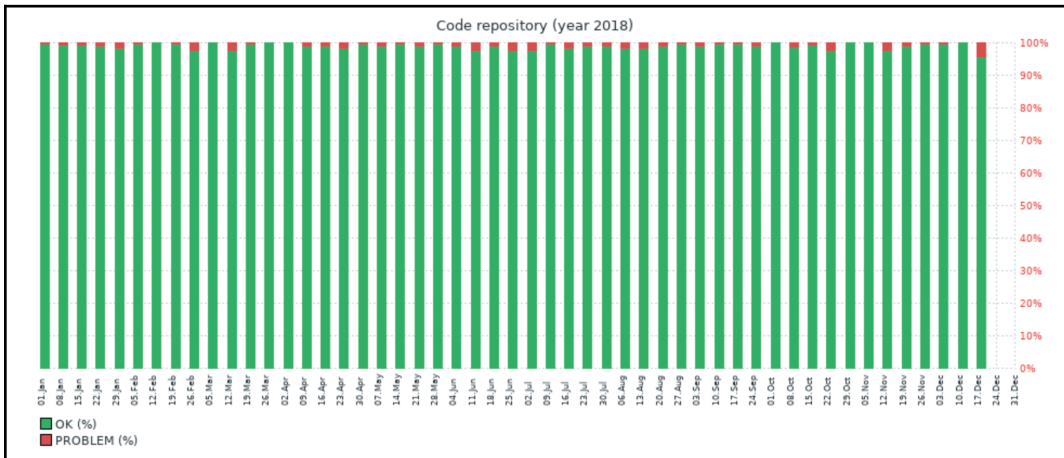
- Today
- This week
- This month
- This year
- Last 24 hours
- ✓ Last 7 days
- Last 30 days
- Last 365 days

Service availability report: Banana

Period Yearly

Year	Ok	Problems	Downtime	SLA	Acceptable SLA
2018	344d 5h 34m	7d 16h 0m		97.8213	99.9000
2017	364d 18h 0m	0d 6h 0m		99.9315	99.9000
2016	366d 0h 0m			100.0000	99.9000
2015	365d 0h 0m			100.0000	99.9000
2014	365d 0h 0m			100.0000	99.9000
2013	365d 0h 0m			100.0000	99.9000


- 2013
- 2014
- 2015
- 2016
- 2017
- ✓ 2018



New service time

Period type

Note

* From 

* Till 

[Add](#)

Update

Delete

Cancel

New service time

Period type

* From hh : mm

* Till hh : mm


[Add](#)

Update

Delete

Cancel

Chapter 14: Monitoring IPMI Devices

 **Details ▲** Cannot add host ✕

Value "0123456789012345678912" is too long for field "ipmi_password" - 22 characters. Allowed length is 20 characters.

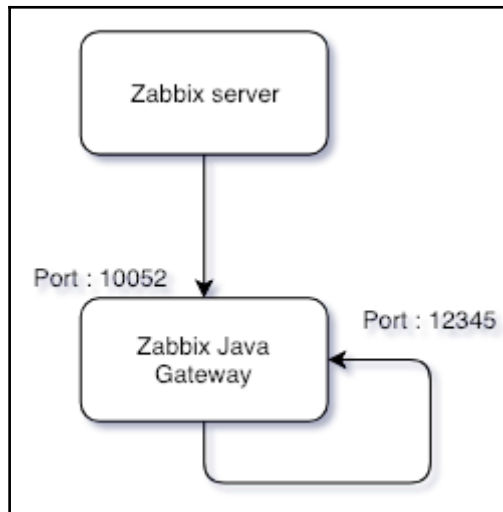
NAME ▲	LAST CHECK	LAST VALUE
- other - (1 Item)		
System Fan 2	2016-05-18 12:26:49	3348 RPM

Chapter 15: Monitoring Java Applications

JMX interfaces

⋮	127.0.0.1		IP	DNS	12345	<input checked="" type="radio"/> Remove
---	-----------	--	----	-----	-------	---

[Add](#)




JMX interfaces

⋮	127.0.0.1		IP	DNS	12345	<input checked="" type="radio"/> Remove
---	-----------	--	----	-----	-------	---

[Add](#)

JConsole: New Connection



New Connection

Local Process:

Name	PID
jdk.jconsole/sun.tools.jconsole.JConsole	1266

Remote Process:

Usage: <hostname>:<port> OR service:jmx:<protocol>:<sap>

Username: **Password:**

Note: Red arrows in the original image point to the Remote Process input field, the Username label, the Password label, and the Connect button.

Java Monitoring & Management Console

Connection Window Help

192.168.1.23:12345

Overview Memory Threads Classes VM Summary **MBeans**

java.lang

- ClassLoading
- Compilation
- GarbageCollector
- Memory
 - Attributes
 - ObjectPendingFinalizationCou
 - HeapMemoryUsage**
 - NonHeapMemoryUsage
 - Verbose
 - ObjectName
 - Operations
 - Notifications
- MemoryManager
- MemoryPool
- OperatingSystem
- Runtime
- Threading

java.nio

java.util.logging

Attribute value

Name	Value
HeapMemoryUsage	javax.management.openmbean.CompositeDat...

Refresh

MBeanAttributeInfo

Name	Value
Attribute:	
Name	HeapMemoryUsage
Description	HeapMemoryUsage
Readable	true
Writable	false
Is	false
Type	javax.management.openmbean.CompositeData

Descriptor

Name	Value
Attribute:	
openType	javax.management.openmbean.CompositeType(name=java.lang.manag...
originalType	java.lang.management.MemoryUsage

192.168.1.23:12345

Overview Memory Threads Classes VM Summary **MBeans**

- JMImplementation
- com.sun.management
 - java.lang
 - ClassLoading
 - Compilation
 - GarbageCollector
 - Memory
 - Attributes
 - ObjectPendingFinalizationCou
 - HeapMemoryUsage**
 - NonHeapMemoryUsage
 - Verbose
 - ObjectName
 - Operations
 - Notifications
 - MemoryManager
 - MemoryPool
 - OperatingSystem
 - Runtime
 - Threading
 - java.nio
 - java.util.logging

Attribute value

Name	Value										
HeapMemoryUsage	<table border="1"> <thead> <tr> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>committed</td> <td>32571392</td> </tr> <tr> <td>init</td> <td>33554432</td> </tr> <tr> <td>max</td> <td>506855424</td> </tr> <tr> <td>used</td> <td>10119224</td> </tr> </tbody> </table>	Name	Value	committed	32571392	init	33554432	max	506855424	used	10119224
Name	Value										
committed	32571392										
init	33554432										
max	506855424										
used	10119224										

Refresh

MBeanAttributeInfo

Name	Value
Attribute:	
Name	HeapMemoryUsage
Description	HeapMemoryUsage
Readable	true
Writable	false
Is	false
Type	javax.management.openmbean.CompositeData

Descriptor

Name	Value
Attribute:	
openType	javax.management.openmbean.CompositeType(name=java.lang.management.MemoryUsage,items=((i...
originalType	java.lang.management.MemoryUsage

Discovery rule **Filters**

* Name

Type

* Key

* Host interface

* JMX endpoint

User name

Password

* Update interval

Custom intervals	Type	Interval	Period	Action
	<input checked="" type="checkbox"/> Flexible <input type="checkbox"/> Scheduling	<input type="text" value="50s"/>	<input type="text" value="1-7,00:00-24:00"/>	Remove
	Add			

* Keep lost resources period

Description

Enabled

Item prototype **Preprocessing**

* Name

Type

* Key

* Host interface

* JMX endpoint

User name

Password

Type of information

<input type="checkbox"/> Host	Name ▲	Last check	Last value	Change
▼ <input type="checkbox"/> Zabbix Java gateway	java.lang:type=GarbageCollector,name=Copy,ObjectName (1 Item)			
<input type="checkbox"/>	java.gc java.lang:type=GarbageCollector,name=Copy-CollectionCount	2018-12-22 15:00:16	21	Graph
▼ <input type="checkbox"/> Zabbix Java gateway	java.lang:type=GarbageCollector,name=MarkSweepCompact,ObjectName (1 Item)			
<input type="checkbox"/>	java.gc java.lang:type=GarbageCollector,name=MarkSweepCompact-Col...	2018-12-22 15:00:16	3	Graph

Chapter 16: Monitoring VMware

NAME ▲	LAST CHECK	LAST VALUE
CPU (5 Items)		
CPU cores	2015-11-02 10:49:58	4
CPU frequency	2015-11-02 10:49:56	2.53 GHz
CPU model	2015-11-02 10:49:57	Intel(R) Xeon(R) CPU
CPU threads	2015-11-02 10:49:59	8
CPU usage	2015-11-02 10:59:51	61 MHz
Datastore (2 Items)		
Average read latency of the datastore datastore1	2015-11-02 10:59:44	0
Average write latency of the datastore datastore1	2015-11-02 10:59:45	0

NAME ▲	LAST CHECK	LAST VALUE
CPU (2 Items)		
CPU usage	2015-11-02 11:17:14	10 MHz
Number of virtual CPUs	2015-11-02 11:17:13	1
Disks (4 Items)		
Average number of kilobytes read from the disk Hard disk 1	2015-11-02 11:16:50	0 Bps
Average number of kilobytes written to the disk Hard disk 1	2015-11-02 11:16:52	1 KBps
Average number of reads from the disk Hard disk 1	2015-11-02 11:16:51	0
Average number of writes to the disk Hard disk 1	2015-11-02 11:16:53	0
Filesystems (4 Items)		
Free disk space on /	2015-11-02 11:16:54	2.64 GB
Free disk space on / (percentage)	2015-11-02 11:16:55	68.03 %
Total disk space on /		
Used disk space on /	2015-11-02 11:16:57	1.24 GB

<input type="checkbox"/>	Wizard	Name ▲	Triggers	Key	Interval
<input type="checkbox"/>	...	Event log		vmware.eventlog[{\$URL}]	1m
<input type="checkbox"/>	...	Full name		vmware.fullname[{\$URL}]	1h
<input type="checkbox"/>	...	Version		vmware.version[{\$URL}]	1h

Host **Groups** Templates Host inventory Encryption

* Host name

Visible name

Create enabled

Host **Groups** Templates Host inventory Encryption

* Groups X

type here to search

Group prototypes

[Remove](#)

[Remove](#)

[Add](#)

Host **Groups** Templates Host inventory Encryption

* Host name

Visible name

Create enabled

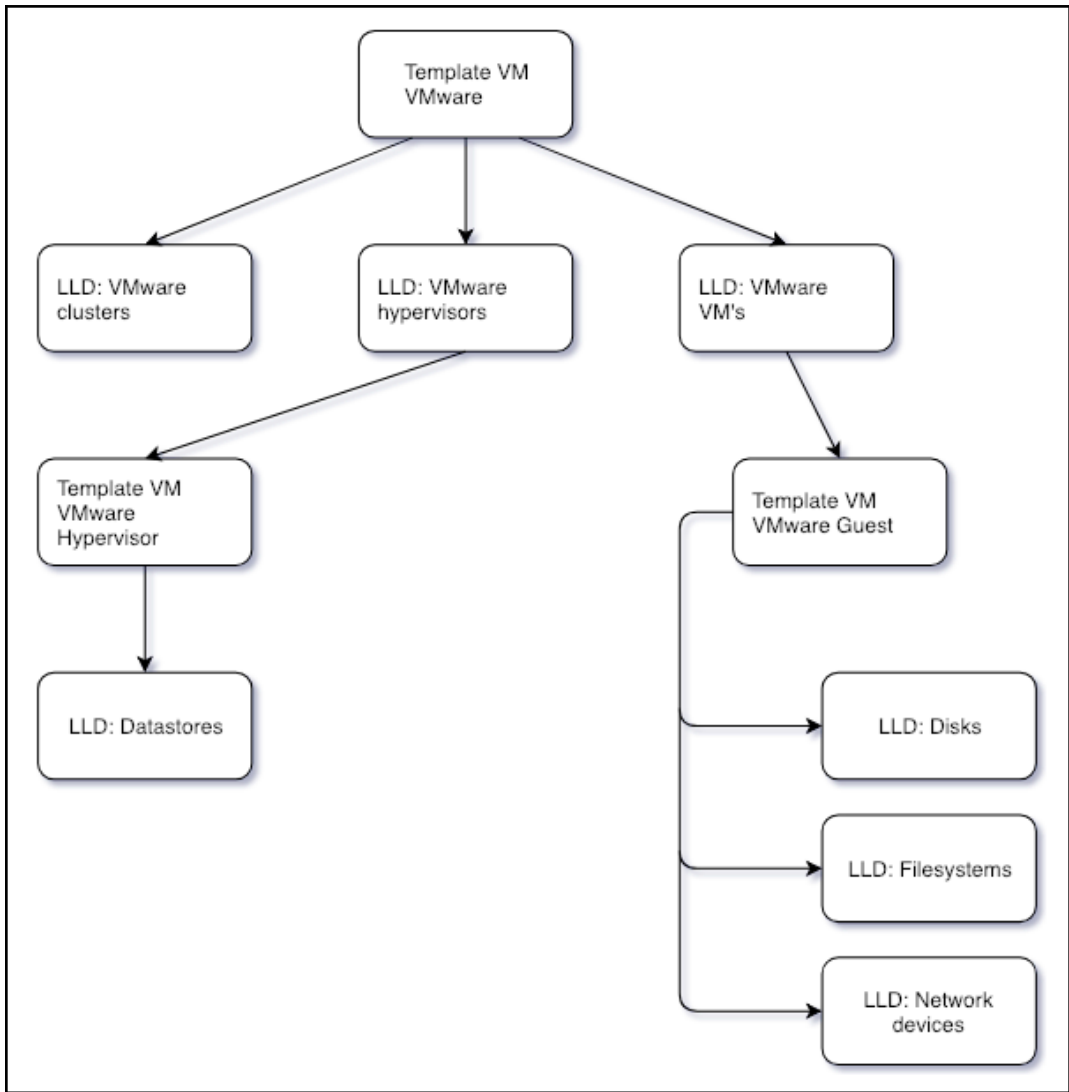
HOST

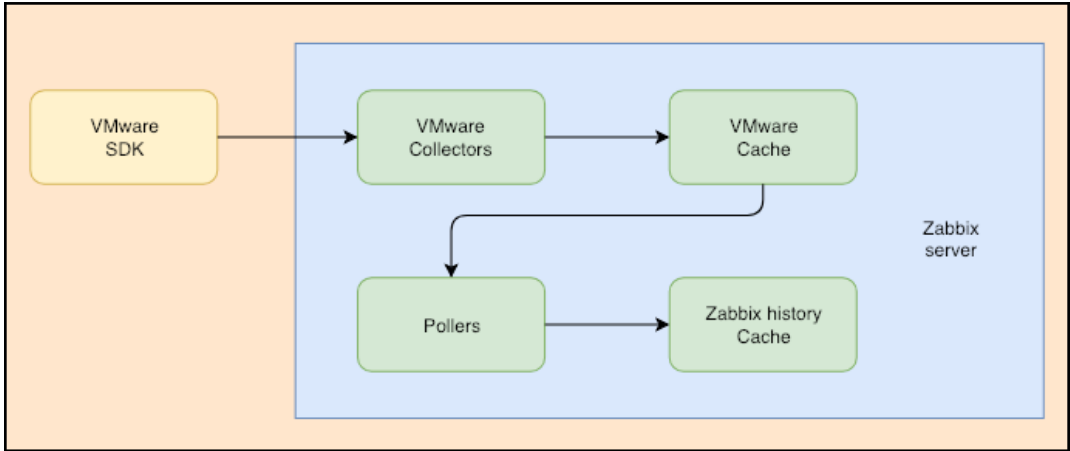
A test virtual machine

(ca2642f7-345c-40ee-b8f6-75341cc8c84c)

{#HV.NAME}

{#CLUSTER.NAME} (vm)





Chapter 17: Using Proxies to Monitor Remote Locations

Proxies

Proxy Encryption

* Proxy name

Proxy mode Active Passive

Proxy address

Description

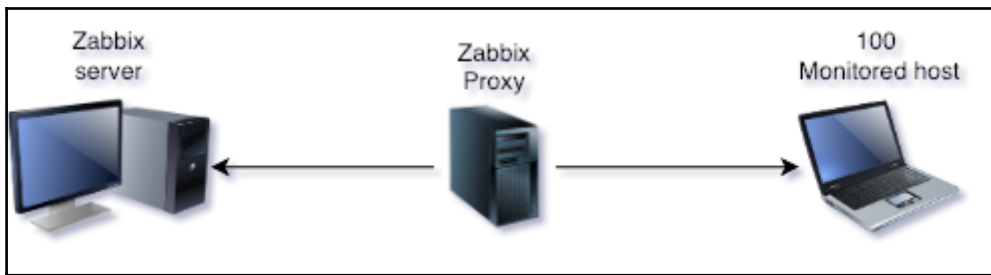
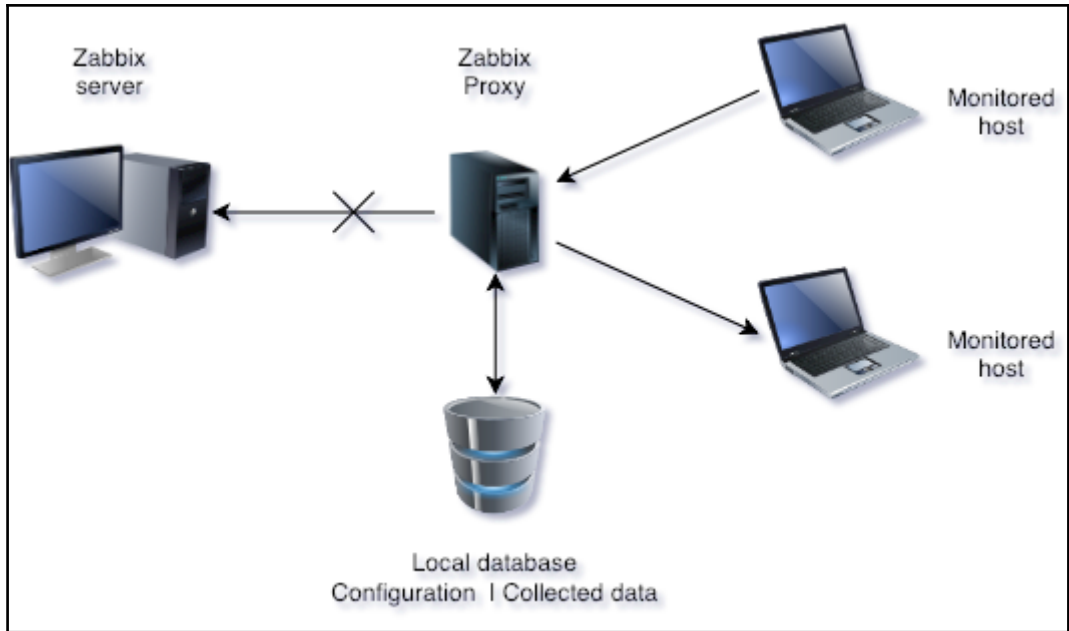
Monitored by proxy ▾

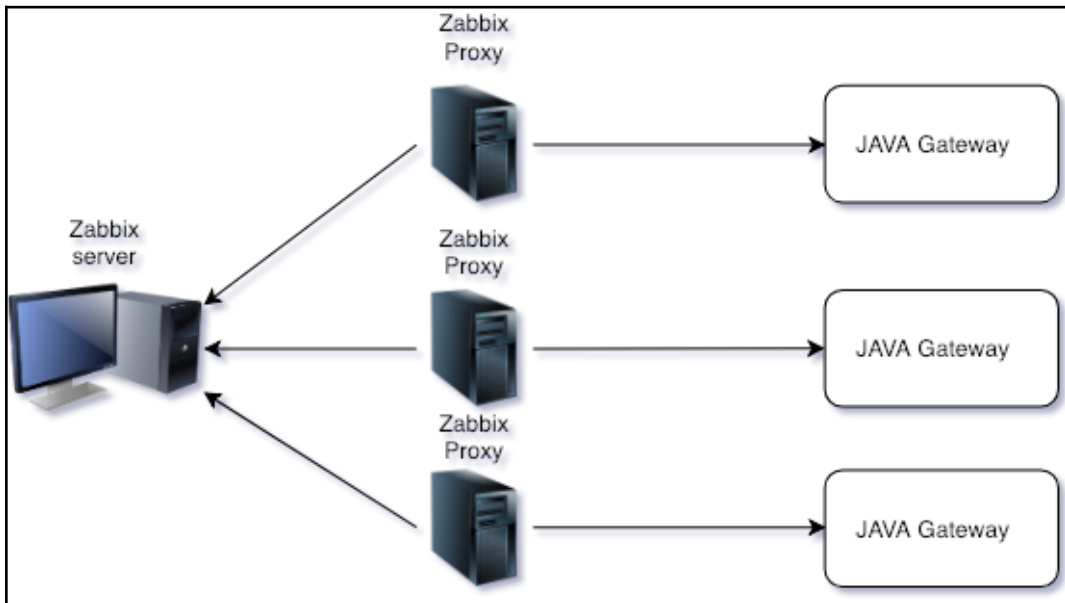
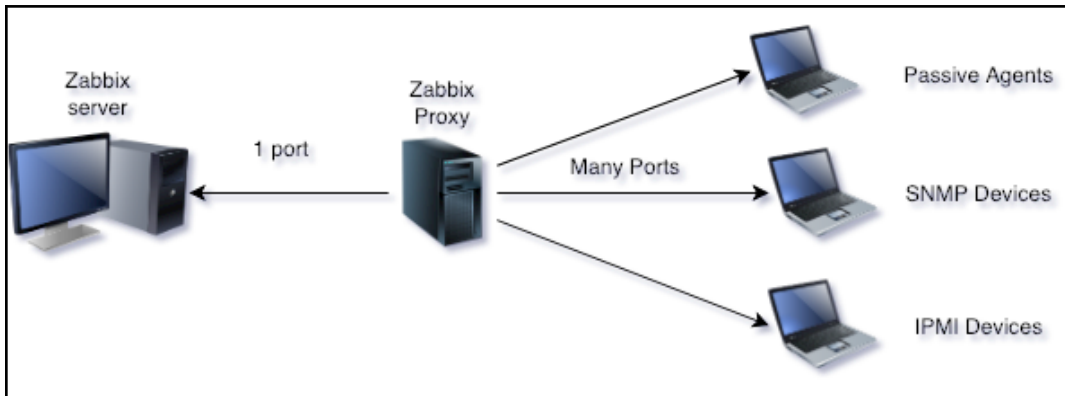
<input type="checkbox"/>	Name ▲	Mode	Encryption	Compression	Last seen (age)	Host count	Item count	Required performance (vps)	Hosts
<input type="checkbox"/>	First proxy	Active	NONE	ON	2s	0	0	0	

Displaying 1 of 1 found

Name ▲

First proxy: Another host

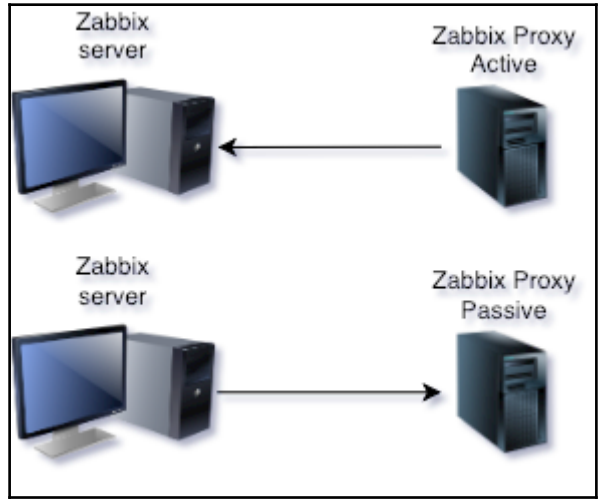




Execute on Zabbix agent Zabbix server (proxy) Zabbix server

<input type="checkbox"/> Host	Name ▲	Last check	Last value
▼ <u>Another host</u>	- other - (1 Item)		
<input type="checkbox"/>	First proxy: last access	2018-12-28 15:03:17	2018-12-28 15:03:16

<input type="checkbox"/> Host	Name ▲	Last check	Last value
▼ <u>Another host</u>	proxy (1 Item)		
<input type="checkbox"/>	First proxy: buffer size	2018-12-28 15:12:18	1



Proxy **Encryption**

* Proxy name

Proxy mode Active Passive

* Interface

IP address	DNS name	Connect to	Port
<input type="text" value="192.168.1.23"/>	<input type="text" value="localhost"/>	<input checked="" type="radio"/> IP <input type="radio"/> DNS	<input type="text" value="10051"/>

Description

Chapter 18: Encrypting Zabbix Traffic

Host Templates IPMI Macros Host inventory **Encryption**

Connections to host **No encryption** PSK Certificate

Connections from host No encryption
 PSK
 Certificate

* PSK identity

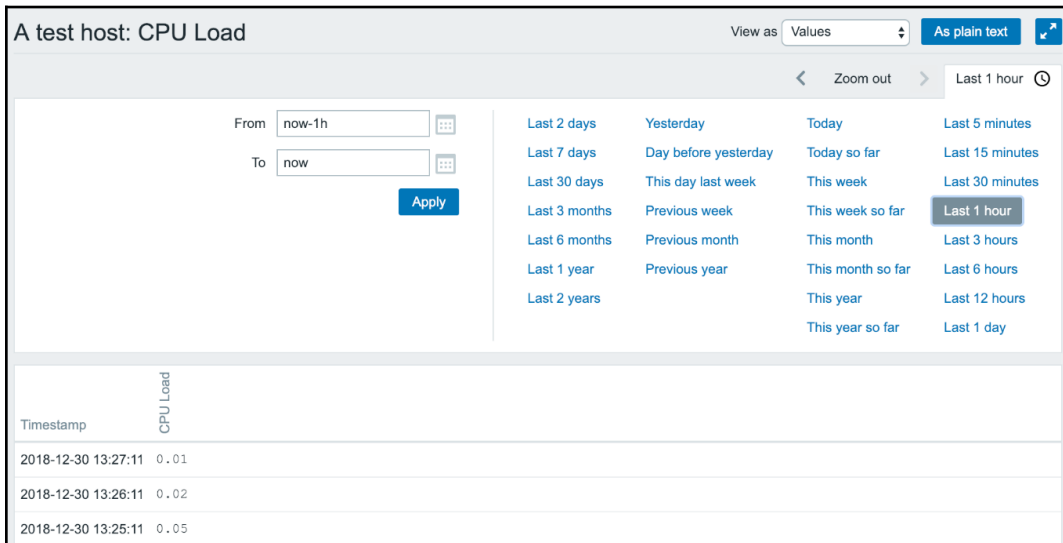
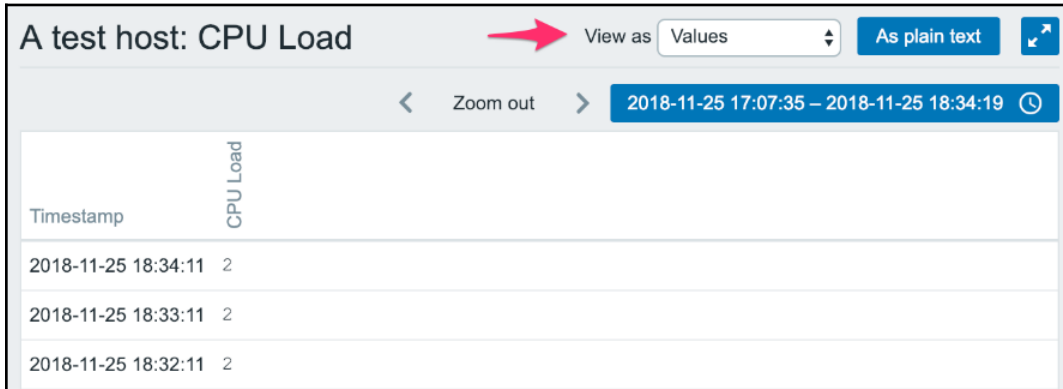
* PSK

Add Cancel

Enabled ZBX SNMP JMX IPMI **NONE** NONE **PSK** CERT

Enabled ZBX SNMP JMX IPMI **NONE**

Chapter 19: Working Closely with Data



```
+-----+-----+-----+-----+-----+-----+-----+
| userid | alias | name | surname | passwd | url |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Admin | Zabbix | Administrator | 5fce1b3e34b520afeffb37ce08c7cd66 | |
| 2 | guest | | | d41d8cd98f00b204e9800998ecf8427e | |
+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

A test host: Incoming traffic on enp0s3

2018-12-30	14:18:39	1546172319	453
2018-12-30	14:18:09	1546172289	395
2018-12-30	14:17:39	1546172259	393
2018-12-30	14:17:09	1546172229	399



Imported successfully



C_Template_Email: [POP3 server status](#)

net.tcp.service[pop3]

* Name

Type

* Key

* URL

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Request type

Timeout

Request body type

Request body

```
{
  "jsonrpc": "2.0",
  "method": "apiinfo.version",
  "params": [],
  "id": 1
}
```

Name	Value
<input type="text" value="name"/>	<input type="text" value="value"/>

[Remove](#)

[Add](#)

Required status codes

Follow redirects

Retrieve mode

Convert to JSON

HTTP proxy

HTTP authentication

SSL verify peer

SSL verify host

SSL certificate file

SSL key file

SSL key password

* Host interface

Type of information

Item Preprocessing

Preprocessing steps

Name

Parameters

Action



JSON Path



\$.result

[Remove](#)

▼ Host

Name ▲

Last check

Last value

Change

▼ [A test host](#)

- other - (1 Item)



Check Zabbix API Version

2018-12-30 15:37:58

4.0.2

[Hist...](#)

Mapping things

foo ⇒ bar

this ⇒ that

Chapter 20: Zabbix Maintenance

System information		
Parameter	Value	Details
Zabbix server is running	Yes	localhost:10051
Number of hosts (enabled/disabled/templates)	95	11 / 0 / 84
Number of items (enabled/disabled/not supported)	115	114 / 0 / 1
Number of triggers (enabled/disabled [problem/ok])	31	31 / 0 [9 / 22]
Number of users (online)	4	2
Required server performance, new values per second	5.86	

Item **Preprocessing**

* Name

Type

* Key

Type of information

Units

* Update interval

Custom intervals

Type	Interval	Period	Action
Flexible Scheduling	50s	1-7,00:00-24:00	Remove

[Add](#)

* History storage period

* Trend storage period

Show value [show value mappings](#)

New application

▼	<u>A test host</u>	Zabbix performance (1 Item)		
<input type="checkbox"/>		Expected NVPS	2018-12-31 14:29:32	5.89 NVPS

▼	<u>A test host</u>	Zabbix performance (2 Items)		
<input type="checkbox"/>		Expected NVPS	2018-12-31 14:42:32	5.92 NVPS
<input type="checkbox"/>		Real NVPS	2018-12-31 14:42:33	2.8 NVPS

▼	<input type="checkbox"/> Host	Name ▲	Last check	Last value
▼	<u>A test host</u>	- other - (1 Item)		
<input type="checkbox"/>		Zabbix server uptime	2018-12-31 14:45:34	00:27:38

<u>A test host</u>	- other - (1 Item)		
<input type="checkbox"/>	Zabbix configuration cache, % free	2018-12-31 14:48:05	96.17 %

<u>A test host</u>	Zabbix process busy rates (1 Item)		
<input type="checkbox"/>	Zabbix busy process poller rate	2018-12-31 14:53:36	0.58 %

Template	Applications	Items	Triggers	Graphs	Screens	Discovery	Web
Template App Zabbix Agent	Applications 1	Items 3	Triggers 3	Graphs	Screens	Discovery	Web
Template App Zabbix Proxy	Applications 1	Items 31	Triggers 23	Graphs 4	Screens 1	Discovery	Web
Template App Zabbix Server	Applications 1	Items 42	Triggers 31	Graphs 6	Screens 1	Discovery	Web

Displaying 3 of 3 found

<u>A test host</u>	- other - (1 Item)		
<input type="checkbox"/>	Amount of unsupported items	2018-12-31 15:03:07	14

<u>A test host</u>	- other - (1 Item)		
<input type="checkbox"/>	Unsupported item count	2018-12-31 15:07:30	0

New condition

Event type ↕ equals Item in "not supported" state ↕

[Add](#)

<input type="checkbox"/>	Report not supported items	Event type equals <i>Item in "not supported" state</i>	Send message to user groups: Zabbix administrators via all media	Disabled
<input type="checkbox"/>	Report not supported low level discovery rules	Event type equals <i>Low-level discovery rule in "not supported" state</i>	Send message to user groups: Zabbix administrators via all media	Disabled
<input type="checkbox"/>	Report unknown triggers	Event type equals <i>Trigger in "unknown" state</i>	Send message to user groups: Zabbix administrators via all media	Disabled

Events and alerts

Enable internal housekeeping



* Trigger data storage period

* Internal data storage period


* Network discovery data storage period


* Auto-registration data storage period


Time	User	IP	Resource	Action	ID	Description	Details
2018-10-13 11:36:03	Admin	192.168.1.18	User	Login	0		
2018-10-13 11:36:02	guest	192.168.1.18	User	Login	0		
2018-10-13 11:35:57	guest	192.168.1.18	User	Logout	0		
2018-10-13 11:34:25	guest	192.168.1.18	User	Login	0		

< Zoom out > 2018-10-12 16:03:21 – 2018-10-15 16:03:21  Filter 

User

Action 

Resource 



Older \ Newer	Agent	Proxy	Server
Agent	N	Y	Y
Proxy	N	N	N
Server	N	N	N