

Task. Zabbix. Basics

Testing Infrastructure:

Vagrantfile to spin up 2 VMs (virtualbox):

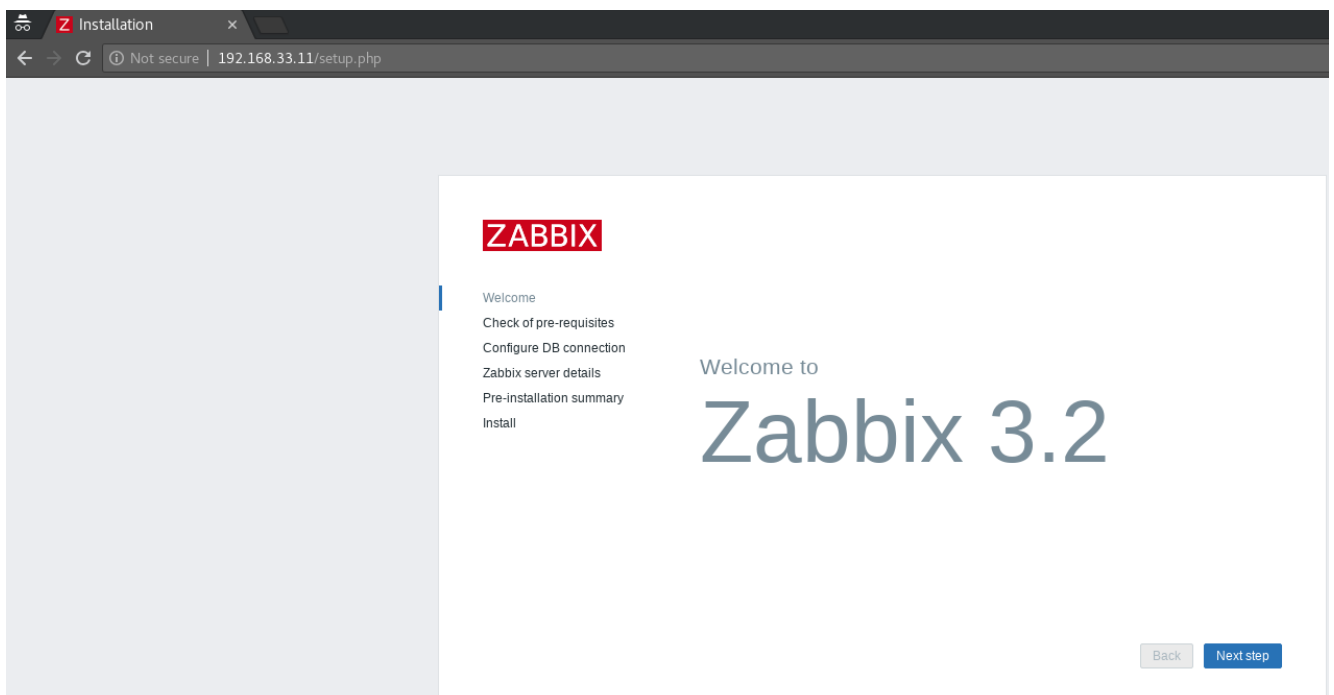
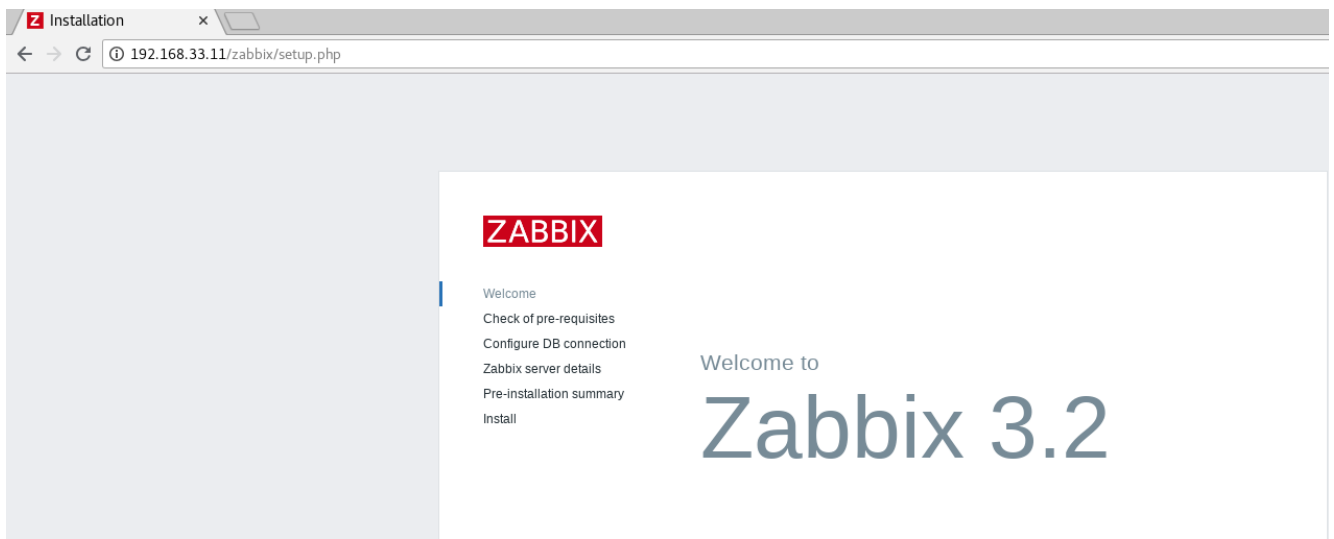
- zabbix server, provisioned by Vagrant provisioner
- Zabbix agents on both VMs, provisioned by Vagrant provisioner

Configure zabbix to work on the server directly without /zabbix

<http://zabbix-server/zabbix> -> <http://zabbix-server>

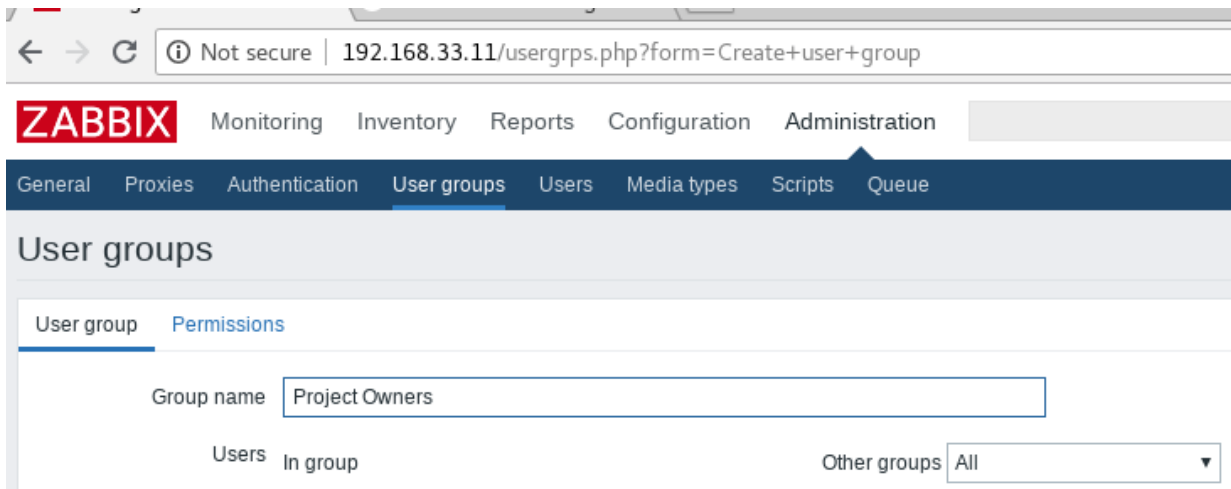
Task:

You should install and configure Zabbix server and agents.



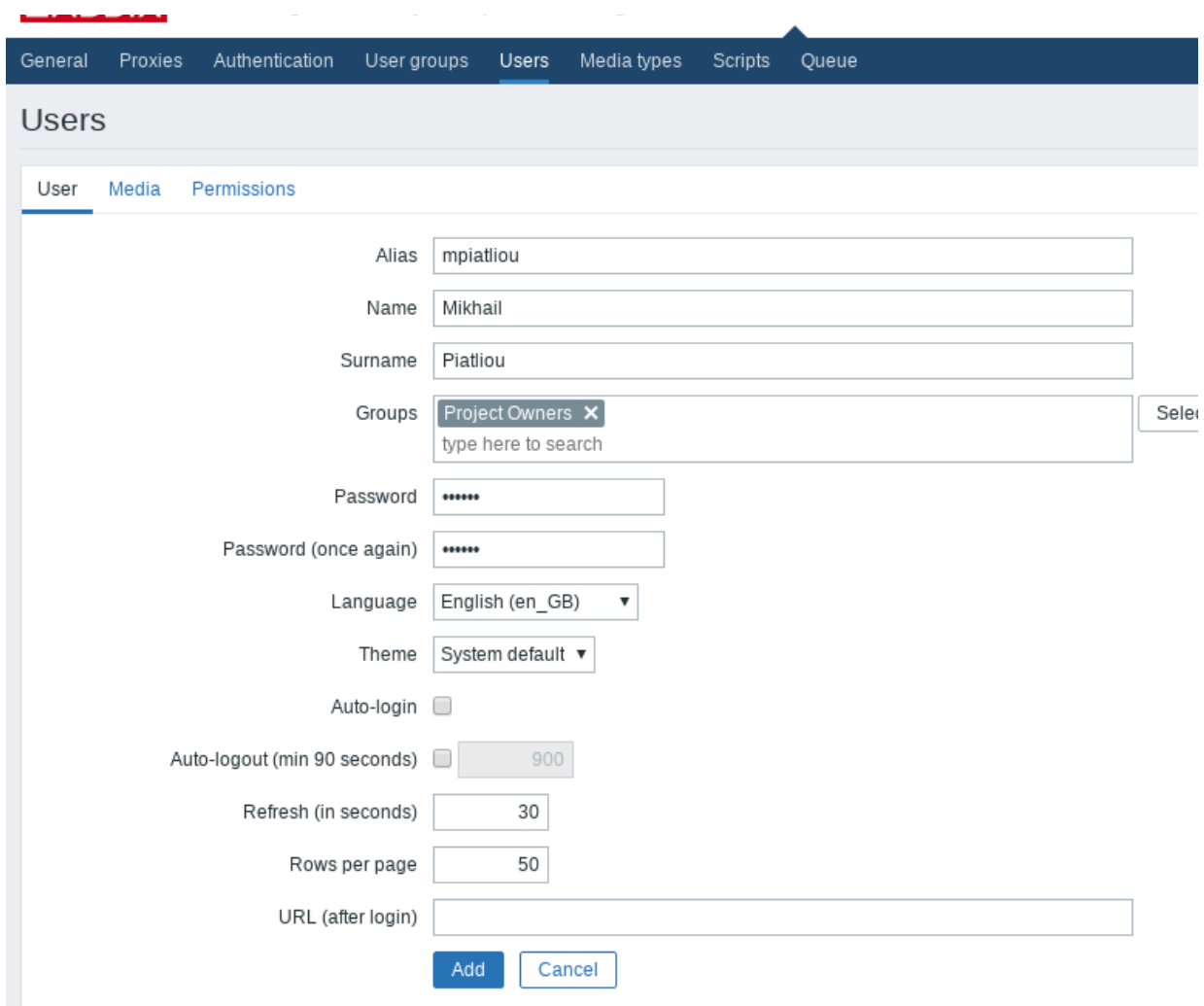
1. Using Zabbix UI:

- Create User group “Project Owners”



The screenshot shows the Zabbix web interface at the URL `192.168.33.11/usergrps.php?form=Create+user+group`. The top navigation bar includes 'Monitoring', 'Inventory', 'Reports', 'Configuration', and 'Administration'. The 'Administration' menu is expanded, showing 'General', 'Proxies', 'Authentication', 'User groups' (selected), 'Users', 'Media types', 'Scripts', and 'Queue'. The 'User groups' page has two tabs: 'User group' and 'Permissions'. The 'User group' tab is active, showing a form with 'Group name' set to 'Project Owners', 'Users' set to 'In group', and 'Other groups' set to 'All'.

- Create User (example “Siarhei Beliakou”), assign user to “Project Owners”, set email



The screenshot shows the Zabbix web interface at the URL `192.168.33.11/users.php?form=Create+user`. The top navigation bar includes 'General', 'Proxies', 'Authentication', 'User groups', 'Users' (selected), 'Media types', 'Scripts', and 'Queue'. The 'Users' page has three tabs: 'User' (selected), 'Media', and 'Permissions'. The 'User' tab is active, showing a form with the following fields: 'Alias' (mpiatiou), 'Name' (Mikhail), 'Surname' (Piatliou), 'Groups' (Project Owners), 'Password' (masked), 'Password (once again)' (masked), 'Language' (English (en_GB)), 'Theme' (System default), 'Auto-login' (unchecked), 'Auto-logout (min 90 seconds)' (900), 'Refresh (in seconds)' (30), 'Rows per page' (50), and 'URL (after login)'. The 'Add' button is highlighted.

←

→

↺

192.168.33.11/users.php?form=update&userid=3

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

GeneralProxiesAuthenticationUser groupsUsersMedia typesScriptsQueue

Users

UserMediaPermissions

Media

Type

Send to

When active

Use if severity

Status

Action

Add

Update

Delete

Cancel

Media - Google Chrome

Not secure | 192.168.33.11/popup_media.php?dstfrm=userForm

Media

Type

Email

Send to

mikhail_piatliou@epam.com

When active

1-7,00:00-24:00

Use if severity

☒ Not classified

☒ Information

☒ Warning

☒ Average

☒ High

☒ Disaster

Enabled

☒

Add

Cancel

←

→

↺

192.168.33.11/users.php?form=update&userid=3

ZABBIX

MonitoringInventoryReportsConfigurationAdministration

GeneralProxiesAuthenticationUser groupsUsersMedia typesScriptsQueue

Users

UserMediaPermissions

User type

Zabbix User

Permissions

Host group

All groups

Permission:

None

Info

Permissions can be assigned for user groups only.

Update

Delete

Cancel

- Add 2nd VM to zabbix: create Host group (“Project Hosts”), create Host in this group, enable ZABBIX Agent monitoring

192.168.33.11/hostgroups.php

ZABBIX Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery IT services

Host groups

Group name

Hosts Hosts in Other hosts | Group

Host Templates IPMI Macros Host inventory Encryption

Host name

Visible name

Groups In groups Other groups

Hypervisors
Linux servers
Templates
Virtual machines
Zabbix servers

New group

Agent interfaces

IP address	DNS name	Connect to	Port
<input type="text" value="192.168.33.12"/>	<input type="text"/>	<input type="text" value="IP"/> <input type="text" value="DNS"/>	<input type="text" value="10050"/>

[Add](#)

- Assign to this host template of Linux

Hosts

All hosts / Enabled ZBX SNMP JMX IPMI Applications 10 Items 46 Triggers 19 Graphs 9 Discovery rules 2

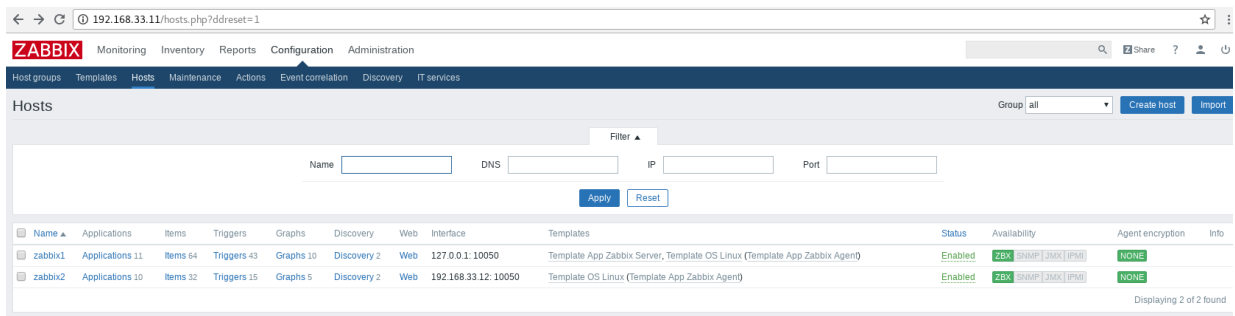
Host Templates IPMI Macros Host inventory Encryption

Linked templates

Name	Action
Template OS Linux	Unlink Unlink and clear

Link new templates

[Add](#)



- Create custom checks (CPU Load, Memory load, Free space on file systems, Network load)

Name

Type

Key

Host interface

Type of information

Units

Use custom multiplier ☐

Update interval (in sec)

Custom intervals

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

[Add](#)

History storage period (in days)

Trend storage period (in days)

Store value

Show value [show value mappings](#)

New application

Applications

- None-
- CPU
- Filesystems
- General
- Memory
- Network interfaces
- OS
- Performance

Name	<input type="text" value="free_custom"/>														
Type	<input type="text" value="Zabbix agent"/>														
Key	<input type="text" value="vfs.fs.size[/tmp,free]"/>	<input type="button" value="Select"/>													
Host interface	<input type="text" value="127.0.0.1 : 10050"/>														
Type of information	<input type="text" value="Numeric (unsigned)"/>														
Data type	<input type="text" value="Decimal"/>														
Units	<input type="text"/>														
Use custom multiplier	<input type="checkbox"/> <input type="text" value="1"/>														
Update interval (in sec)	<input type="text" value="10"/>														
Custom intervals	<table><tr><td>Type</td><td>Interval</td><td>Period</td><td>Action</td></tr><tr><td><input checked="" type="checkbox"/> Flexible <input type="checkbox"/> Scheduling</td><td><input type="text" value="50"/></td><td><input type="text" value="1-7,00:00-24:00"/></td><td>Remove</td></tr><tr><td colspan="4">Add</td></tr></table>			Type	Interval	Period	Action	<input checked="" type="checkbox"/> Flexible <input type="checkbox"/> Scheduling	<input type="text" value="50"/>	<input type="text" value="1-7,00:00-24:00"/>	Remove	Add			
Type	Interval	Period	Action												
<input checked="" type="checkbox"/> Flexible <input type="checkbox"/> Scheduling	<input type="text" value="50"/>	<input type="text" value="1-7,00:00-24:00"/>	Remove												
Add															
History storage period (in days)	<input type="text" value="7"/>														
Trend storage period (in days)	<input type="text" value="365"/>														
Store value	<input type="text" value="As is"/>														
Show value	<input type="text" value="As is"/> show value mappings														
New application	<input type="text"/>														
Applications	<div><div>-None- CPU Filesystems General Memory Network interfaces OS Performance Processes Security</div></div>														
Populates host inventory field	<input type="text" value="-None-"/>														

Name	<input type="text" value="network_custom"/>																	
Type	<div>Zabbix agent</div>																	
Key	<input type="text" value="net.if.in[enp0s8,bytes]"/>	<div>Select</div>																
Host interface	<div>127.0.0.1 : 10050</div>																	
Type of information	<div>Numeric (unsigned)</div>																	
Data type	<div>Decimal</div>																	
Units	<input type="text" value="B"/>																	
Use custom multiplier	<div><input type="checkbox"/> <input type="text" value="1"/></div>																	
Update interval (in sec)	<input type="text" value="10"/>																	
Custom intervals	<table><thead><tr><th>Type</th><th></th><th>Interval</th><th>Period</th><th>Action</th></tr></thead><tbody><tr><td><div>Flexible</div></td><td><div>Scheduling</div></td><td><input type="text" value="50"/></td><td><input type="text" value="1-7,00:00-24:00"/></td><td><div>Remove</div></td></tr><tr><td colspan="5"><div>Add</div></td></tr></tbody></table>			Type		Interval	Period	Action	<div>Flexible</div>	<div>Scheduling</div>	<input type="text" value="50"/>	<input type="text" value="1-7,00:00-24:00"/>	<div>Remove</div>	<div>Add</div>				
Type		Interval	Period	Action														
<div>Flexible</div>	<div>Scheduling</div>	<input type="text" value="50"/>	<input type="text" value="1-7,00:00-24:00"/>	<div>Remove</div>														
<div>Add</div>																		
History storage period (in days)	<input type="text" value="7"/>																	
Trend storage period (in days)	<input type="text" value="365"/>																	
Store value	<div>As is</div>																	
Show value	<div>As is</div> <div>show value mappings</div>																	
New application	<div></div>																	
Applications	<div><div>-None- CPU Filesystems General Memory Network interfaces OS Performance Processes Security</div></div>																	

Name

memory_custom

Type

Zabbix agent

Key

vm.memory.size

Select

Host interface

127.0.0.1 : 10050

Type of information

Numeric (unsigned)

Data type

Decimal

Units

Use custom multiplier

☐

1

Update interval (in sec)

10

Custom intervals

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

Add

History storage period (in days)

7

Trend storage period (in days)

365

Store value

As is

Show value

As is

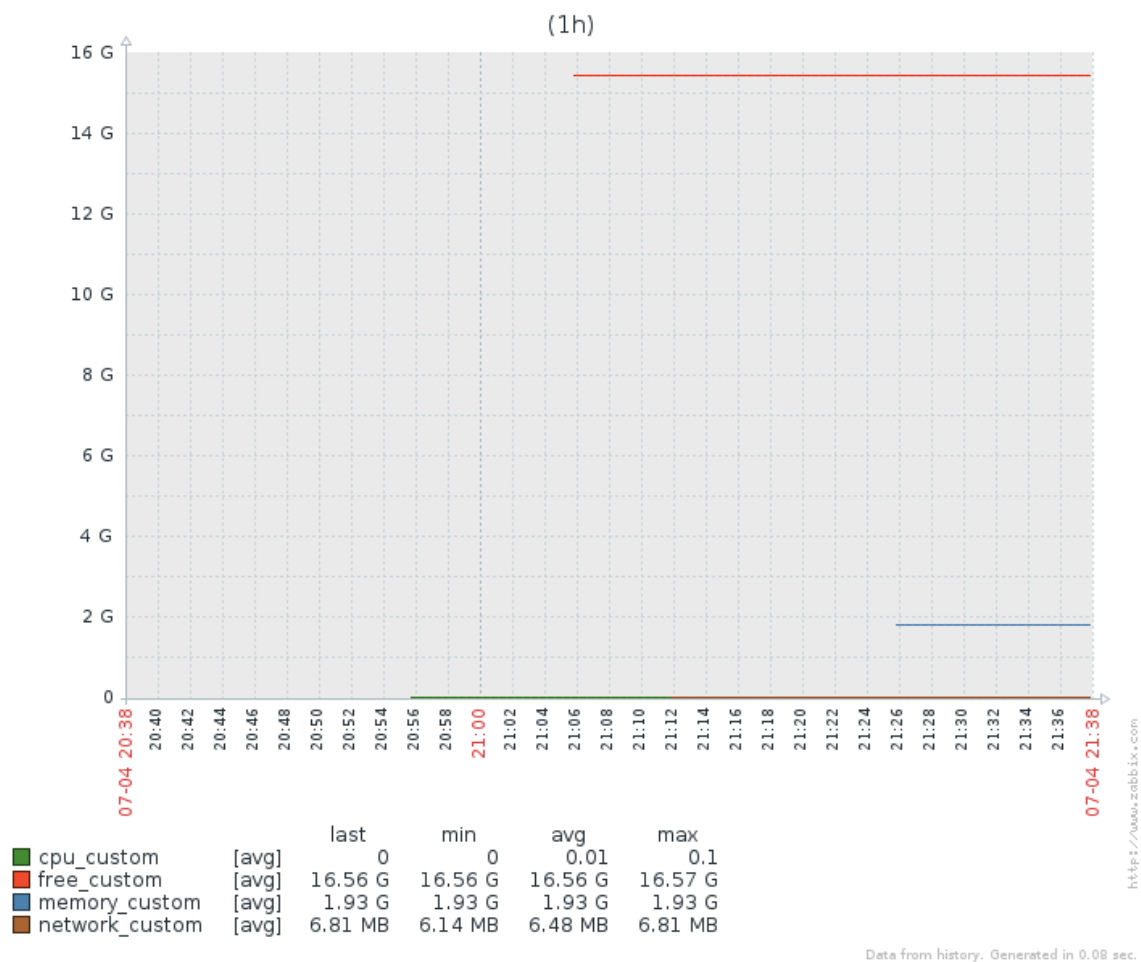
show value mappings

New application

Applications

-None-
CPU
Filesystems
General
Memory
Network interfaces
OS
Performance
Processes
Security

	name	key	update interval	history	trends	type	applications	status
<input type="checkbox"/>	cpu_custom	system.cpu.load	10s	7d	365d	Zabbix agent	CPU, Performance	Enabled
<input type="checkbox"/>	free_custom	vfs.fs.size[tmp,free]	10s	7d	365d	Zabbix agent	Filesystems	Enabled
<input type="checkbox"/>	network_custom	net.if.in[enp0s8,bytes]	10s	7d	365d	Zabbix agent	Network interfaces	Enabled
<input type="checkbox"/>	memory_custom	vm.memory.size	10s	7d	365d	Zabbix agent	Memory	Enabled



- Create trigger with Severity HIGH, check if it works (Problem/Recovery)

trigger Dependencies

Name

Severity ☐ Not classified ☐ Information ☐ Warning ☐ Average ☒ High ☐ Disaster

Expression

[Expression constructor](#)

OK event generation ☒ Expression ☐ Recovery expression ☐ None

PROBLEM event generation mode ☒ Single ☐ Multiple

OK event closes ☒ All problems ☐ All problems if tag values match

Tags [Add](#)

Allow manual close ☐

URL

Description

After rebooting VM2 with Zabbix Agent zabbix2:

System status

Host group	Disaster	High	Average	Warning	Information	Not classified
Project Hosts	0	1	0	0	0	0
Zabbix servers	0	0	0	0	0	0

Updated: 22:55:18

Host status

Host group	Without problems	With problems	Total
Project Hosts	0	1	1
Zabbix servers	1	0	1

Updated: 22:55:18

Last 20 issues

Host	Issue	Last change	Age	Info	Ack	Actions
zabbix2	Restart Zabbix Agent	2018-07-04 22:55:16	2s		No	

1 of 1 issue is shown Updated: 22:55:18

Web monitoring

Host group	Ok	Failed	Unknown
No data found.			

Updated: 22:55:18

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
22:55:16	High				zabbix2	Restart Zabbix Agent	1m 11s	No		

Displaying 1 of 1 found

- Create Action to inform “Project Owners” if HIGH triggers happen

Host groups
Templates
Hosts
Maintenance
Actions
Event correlation
Discovery
IT services

Actions

Action
Operations
Recovery operations

Name

Type of calculation
A and B

Conditions

Label	Name	Action
A	Maintenance status not in <i>maintenance</i>	Remove
B	Trigger severity = <i>High</i>	Remove

New condition
[Add](#)

Enabled ☒

Add
Cancel

Action
Operations
Recovery operations

Default operation step duration
 (minimum 60 seconds)

Default subject

Default message

Trigger: {TRIGGER.NAME}
Trigger status: {TRIGGER.STATUS}
Trigger severity: {TRIGGER.SEVERITY}
Trigger URL: {TRIGGER.URL}
Item values:

Pause operations while in maintenance ☒

Operations

Steps	Details	Start in	Duration (sec)	Action
1	Send message to user groups: Project Owners via all media	Immediately	Default	Edit Remove

Operation details

Steps
 - (0 - infinitely)

Step duration
 (minimum 60 seconds, 0 - use action default)

Operation type

Send to User groups

User group	Action
Project Owners	Remove

[Add](#)

Send to Users

User	Action
Add	

Send only to

Default message ☒

Actions			
		Event source	Triggers
Create action			
Filter			
Name		Status	
		Any Enabled Disabled	
Apply		Reset	
Name	Conditions	Operations	Status
Report problems to Zabbix administrators		Send message to user groups: Zabbix administrators via all media	Disabled
Report to Zabbix Administrator	Maintenance status not in maintenance Trigger severity = High	Send message to user groups: Project Owners via all media	Enabled
Displaying 2 of 2 found			

For both VMs use vagrant box “sbeliakou/centos-7.3-x86_64-minimal”

2. Using Zabbix UI:

- Configure “Network discovery” so that, 2nd VM will be joined to Zabbix (group “Project Hosts”, Template “Template OS Linux”)

Discovery rules

Name

Discovery by proxy

IP range

Delay (in sec)

Checks

Zabbix agent "system.uname" [Edit](#) [Remove](#)

[New](#)

Device uniqueness criteria

☒ IP address

☐ Zabbix agent "system.uname"

Enabled ☒

Action

Operations

Name

Auto discovery. Linux servers.

Type of calculation

And/Or

A and B and C

Conditions

Label	Name	Action
A	Uptime/Downtime >= 10	Remove
B	Discovery status = Up	Remove
C	Service type = Zabbix agent	Remove

New condition

Host IP

=

192.168.0.1-127,192.168.2.1

[Add](#)

Enabled

☐

Update

Clone

Delete

Cancel

Action

Operations

Default subject

Default message

Operations

Details	Action
Add to host groups: Project Hosts	Edit Remove
Link to templates: Template OS Linux	Edit Remove
New	

Update

Clone

Delete

Cancel

Name	Conditions	Operations	Status
Auto discovery. Linux servers.	Uptime/Downtime >= 10 Discovery status = Up Service type = Zabbix agent	Add to host groups: Project Hosts Link to templates: Template OS Linux	Enabled

Host status			
Host group	Without problems	With problems	Total
Discovered hosts	1	0	1
Project Hosts	1	0	1
Zabbix servers	1	0	1
Updated: 11:52:26			

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encr
192.168.33.12	Applications 10	Items 32	Triggers 15	Graphs 5	Discovery 2	Web	192.168.33.12:10050	Template OS Linux (Template App Zabbix Agent)	Enabled	ZBX SNMP ZBX I PMM	NONE
zabbix1	Applications 11	Items 82	Triggers 47	Graphs 14	Discovery 2	Web	127.0.0.1:10050	Template App Zabbix Server, Template OS Linux (Template App Zabbix Agent)	Enabled	ZBX SNMP ZBX I PMM	NONE

For both VMs use vagrant box “sbeliakou/centos-7.3-x86_64-minimal”