

EPAM Systems, RD Dep., RD Dep.

MTN.NIX.05.Zabbix.Basics

REVISION HISTORY					
Ver.	Description of Change	Author	Date	Approved	
				Name	Effective Date
1.0	Initial Version	Siarhei Beliakou	23/May/2017		

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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 3.4.15 Administration interface. The 'User groups' page is active, displaying a list of user groups. The 'Project Owners' group is selected, showing its details and settings.

Name	#	Members	Frontend access	Debug mode	Status
Disabled	Users		System default	Disabled	Disabled
Enabled debug mode	Users		System default	Enabled	Enabled
Guests	Users 1	guest	System default	Disabled	Enabled
No access to the frontend	Users		Disabled	Disabled	Enabled
Project Owners	Users 1	AleksandrShoraba	System default	Disabled	Enabled
Zabbix administrators	Users 1	Admin (Zabbix Administrator)	System default	Disabled	Enabled

0 selected Enable Disable Enable debug mode Disable debug mode Delete

Zabbix 3.4.15. © 2001–2018, Zabbix SIA

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

ZABBIX Monitoring Inventory Reports Configuration Administration

General Proxies Authentication User groups Users Media types Scripts Queue

User added

Users User group: All [Create user](#)

Filter

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

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

<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 (2019-10-17 20:52:29)	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	AleksandrShkraba			Zabbix User	Project Owners	No	Ok	System default	Disabled	Enabled
<input type="checkbox"/>	guest			Zabbix User	Guests	No (2019-10-17 20:17:35)	Ok	System default	Disabled	Enabled

Displaying 3 of 3 found

0 selected [Unblock](#) [Delete](#)

Zabbix 3.4.15. © 2001–2018, Zabbix SIA

05_Java_Ext....docx TestApp.war [Show all](#)

ZABBIX Monitoring Inventory Reports Configuration Administration

General Proxies Authentication User groups Users Media types Scripts Queue

Users

User Media Permissions

Media

Type	Send to	When active	Use if severity	Status	Action
Email	AleksandrShkraba@epam.com	1-7:00:00-24:00	NIWAHD	Enabled	Edit Remove

[Add](#) [Update](#) [Delete](#) [Cancel](#)

192.168.56.111/zabbix/users.php?form=update&userid=3#mediaTab

Zabbix 3.4.15. © 2001–2018, Zabbix SIA

05_Java_Ext....docx TestApp.war [Show all](#)

[Oracle VM VirtualBox Ma...](#) [Telegram Web - Mozilla ...](#) [zabbix: Configuration of u...](#) [\[zabbix\]](#) [\[vagrant@agent~\]](#) [\[student@localhost~\]/zab...](#) [\[vagrant@server~\]](#) [*Untitled Document 2 - ...](#) 1 / 4

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

The screenshot shows the Zabbix web interface at the 'Host groups' configuration page. The 'ProjectHosts' group is selected, and the 'agentVM' template is assigned to it. The interface shows a list of host groups and their associated templates.

Name	Hosts	Templates	Members	Info
Discovered hosts	Hosts	Templates		
Hypervisors	Hosts	Templates		
Linux servers	Hosts	Templates		
ProjectHosts	Hosts 1	Templates	agentVM	
Templates	Hosts	Templates		
Templates/Applications	Hosts	Templates 4	Template App Apache Tomcat JMX, Template App Generic Java JMX, Template App Zabbix Proxy, Template App Zabbix Server	
Templates/Databases	Hosts	Templates 1	Template DB MySQL	
Templates/Modules	Hosts	Templates 31	Template App FTP Service, Template App HTTP Service, Template App HTTPS Service, Template App IMAP Service, Template App LDAP Service, Template App NNTP Service, Template App NTP Service, Template App POP Service, Template App SMTP Service, Template App SSH Service, Template App Telnet Service, Template App Zabbix Agent, Template Module Brocade Foundry Performance SNMPv2, Template Module Cisco CISCO-ENVIRON-MIB SNMPv2, Template Module Cisco CISCO-MEMORY-POOL-MIB SNMPv2, Template Module Cisco CISCO-PROCESS-MIB IOS versions 12.0_3_T-12.2_3.5 SNMPv2, Template Module Cisco CISCO-PROCESS-MIB SNMPv2, Template Module Cisco Inventory SNMPv2, Template Module Cisco OLD-CISCO-CPU-MIB SNMPv2, Template Module EtherLike-MIB SNMPv1, Template Module EtherLike-MIB SNMPv2, Template Module Generic SNMPv1, Template Module Generic SNMPv2, Template Module HOST-RESOURCES-MIB SNMPv1, Template Module HOST-RESOURCES-MIB SNMPv2, Template Module ICMP Ping, Template Module Interfaces Simple SNMPv1, Template Module Interfaces Simple SNMPv2, Template Module Interfaces SNMPv1, Template Module Interfaces SNMPv2, Template Module Interfaces Windows SNMPv2	
Templates/Network Devices	Hosts	Templates 24	Template Net Alcatel Timetra TIMOS SNMPv2, Template Net Brocade FC SNMPv2, Template Net Brocade Foundry Nonstackable SNMPv2, Template Net Brocade Foundry Stackable SNMPv2, Template Net Cisco IOS prior to 12.0_3_T SNMPv2, Template Net Cisco IOS SNMPv2, Template Net Cisco IOS versions 12.0_3_T-12.2_3.5 SNMPv2, Template Net D-Link DES 7200 SNMPv2, Template Net D-Link DES DGX Switch SNMPv2, Template Net Dell Force S-Series SNMPv2, Template Net Extreme EXOS SNMPv2, Template Net HP Comware HH3C SNMPv2, Template Net HP Enterprise Switch SNMPv2, Template Net Huawei VRP SNMPv2, Template Net Intel Qlogic Infiniband SNMPv2, Template Net Juniper SNMPv2, Template Net Mellanox SNMPv2, Template Net Mikrotik SNMPv2, Template Net Netgear Fastpath SNMPv2, Template Net Network Generic Device SNMPv1, Template Net Network Generic Device SNMPv2, Template Net Qtech QSW SNMPv2, Template Net TP-LINK SNMPv2, Template Net Ubiquiti AiroS SNMPv1	
Templates/Operating Systems	Hosts	Templates 10	Template OS AIX, Template OS FreeBSD, Template OS HP-UX, Template OS Linux, Template OS Linux SNMPv2, Template OS Mac OS X, Template OS OpenBSD, Template OS Solaris, Template OS Windows, Template OS Windows SNMPv2	
Templates/Servers Hardware	Hosts	Templates 2	Template Server Intel SR1530 IPMI, Template Server Intel SR1630 IPMI	
Templates/Virtualization	Hosts	Templates 3	Template VM VMware, Template VM VMware Guest, Template VM VMware Hypervisor	
Virtual machines	Hosts	Templates		
Zabbix servers	Hosts 1	Templates	Zabbix server	

- Assign to this host template of Linux

The screenshot shows the Zabbix web interface at the 'Hosts' configuration page. The 'agentVM' host is selected, and the 'Linux' template is assigned to it. The interface shows a list of hosts and their associated templates.

Name	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Templates	Status	Availability	Agent encryption	Info
agentVM	Applications 10	Items 46	Triggers 19	Graphs 9	Discovery 2	Web	192.168.56.222: 10050	Template OS Linux (Template App Zabbix Agent)	Enabled	ZBX [SNMP] [JMX] [IPMI]	NONE	
Zabbix server	Applications 11	Items 68	Triggers 46	Graphs 11	Discovery 2	Web	127.0.0.1: 10050	Template App Zabbix Server, Template OS Linux (Template App Zabbix Agent)	Disabled	ZBX [SNMP] [JMX] [IPMI]	NONE	

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

The screenshot shows the Zabbix web interface in Google Chrome. The browser's address bar displays the URL: `192.168.56.111/zabbix/items.php?form=update&hostid=10254&itemid=28305`. The page title is "Item Preprocessing".

The configuration form for the item "MY_CPU Load" is visible. Key fields include:

- Name:** MY_CPU Load
- Type:** Zabbix agent
- Key:** system.cpu.load
- Host interface:** 192.168.56.222 : 10050
- Type of information:** Numeric (float)
- Units:** (empty)
- Update interval:** 30s
- Custom intervals:** A table with columns Type, Interval, Period, and Action. It contains one row: Flexible, Scheduling, 50s, 1-7.00.00-24.00, and a Remove button.
- History storage period:** 90d
- Trend storage period:** 365d
- Show value:** As is
- New application:** (empty)
- Applications:** A dropdown menu with options: -None-, CPU, Filesystems, General, Memory, Network interfaces, OS, Performance, Processes, and Security. "CPU" is selected.
- Populates host inventory field:** -None-
- Description:** (empty)
- Enabled:** ☒

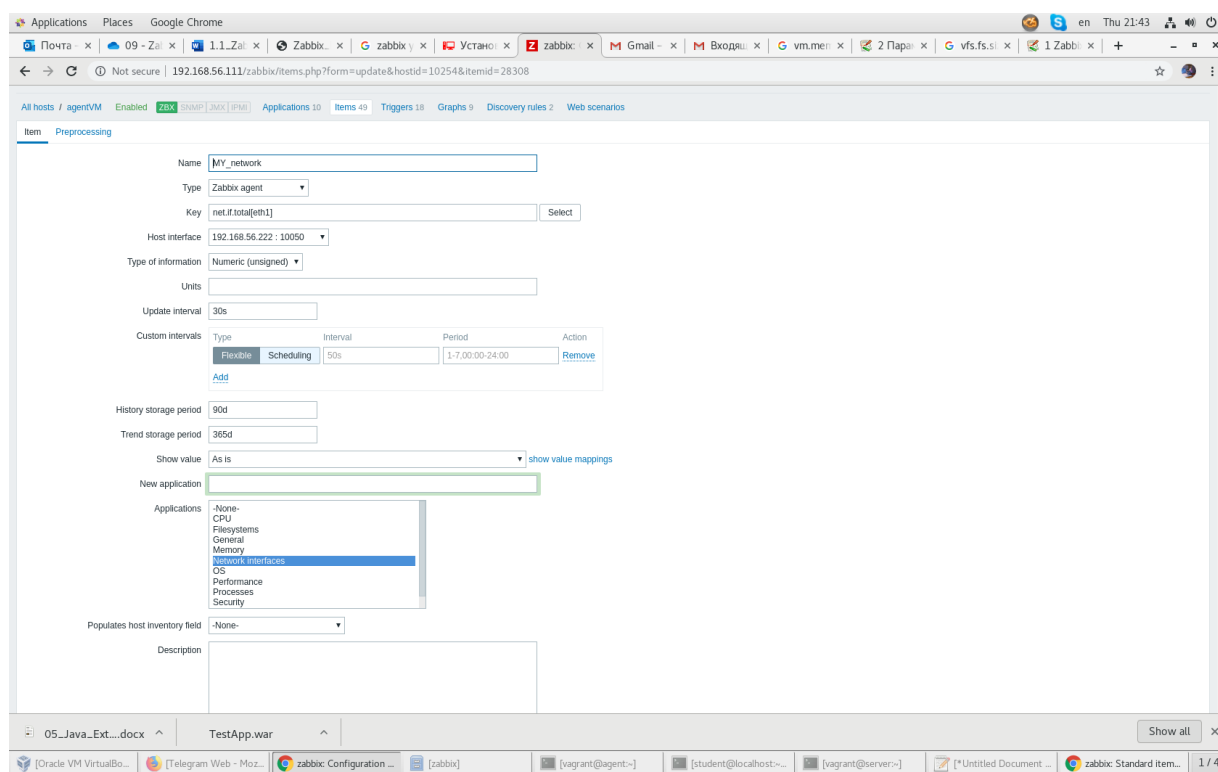
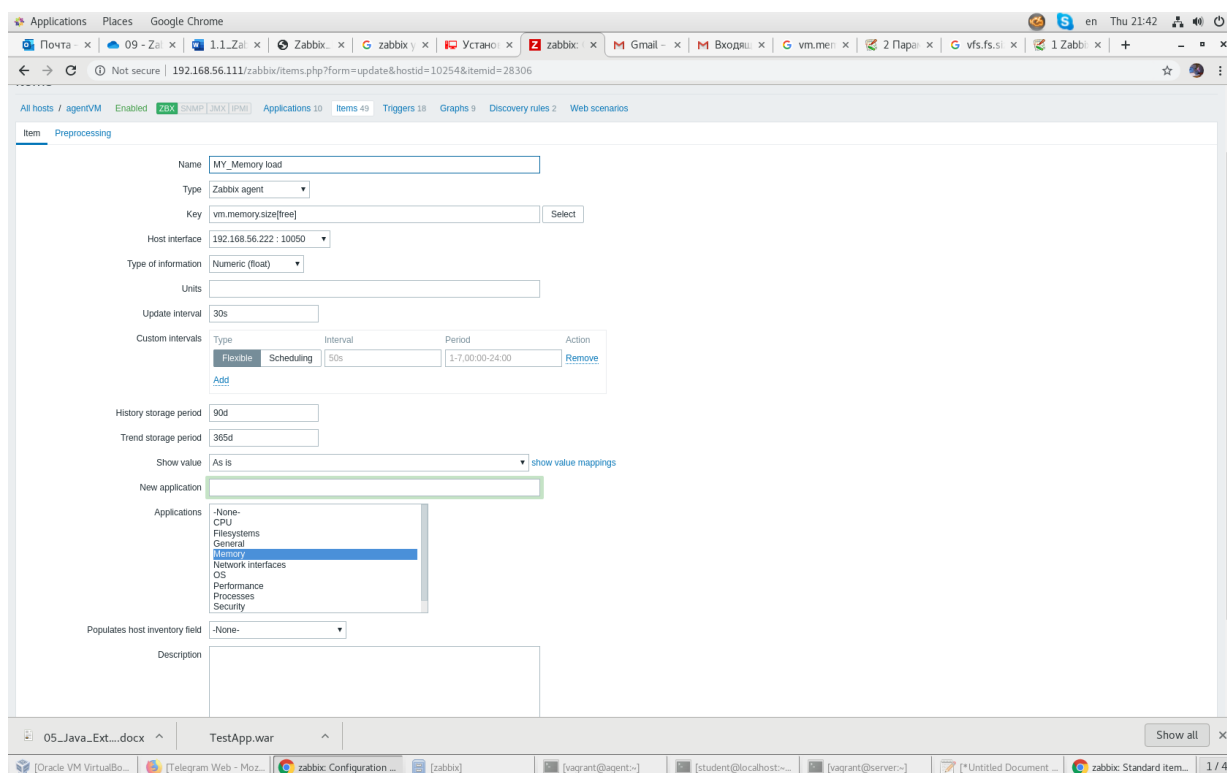
The bottom of the browser window shows the taskbar with various open applications, including "05_Java_Ext...docx", "TestApp.war", and "zabbix: Configuration ...".

The screenshot shows the Zabbix web interface in Google Chrome. The browser's address bar displays the URL: `192.168.56.111/zabbix/items.php?form=update&hostid=10254&itemid=28307`. The page title is "Items".

The configuration form for the item "MY_Free space on file systems" is visible. Key fields include:

- Name:** MY_Free space on file systems
- Type:** Zabbix agent
- Key:** vfs.fs.size[/pfree]
- Host interface:** 192.168.56.222 : 10050
- Type of information:** Numeric (float)
- Units:** (empty)
- Update interval:** 30s
- Custom intervals:** A table with columns Type, Interval, Period, and Action. It contains one row: Flexible, Scheduling, 50s, 1-7.00.00-24.00, and a Remove button.
- History storage period:** 90d
- Trend storage period:** 365d
- Show value:** As is
- New application:** (empty)
- Applications:** A dropdown menu with options: -None-, CPU, Filesystems, General, Memory, Network interfaces, OS, Performance, Processes, and Security. "Filesystems" is selected.
- Populates host inventory field:** -None-
- Description:** (empty)

The bottom of the browser window shows the taskbar with various open applications, including "05_Java_Ext...docx", "TestApp.war", and "zabbix: Configuration ...".



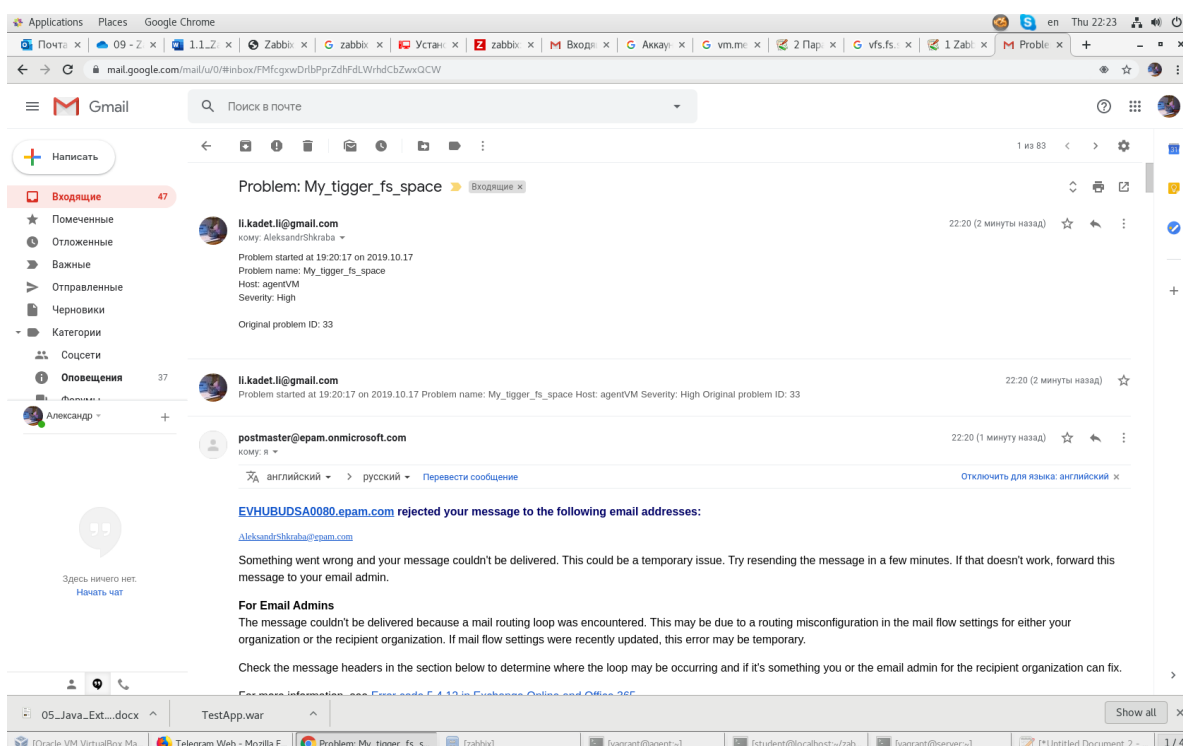
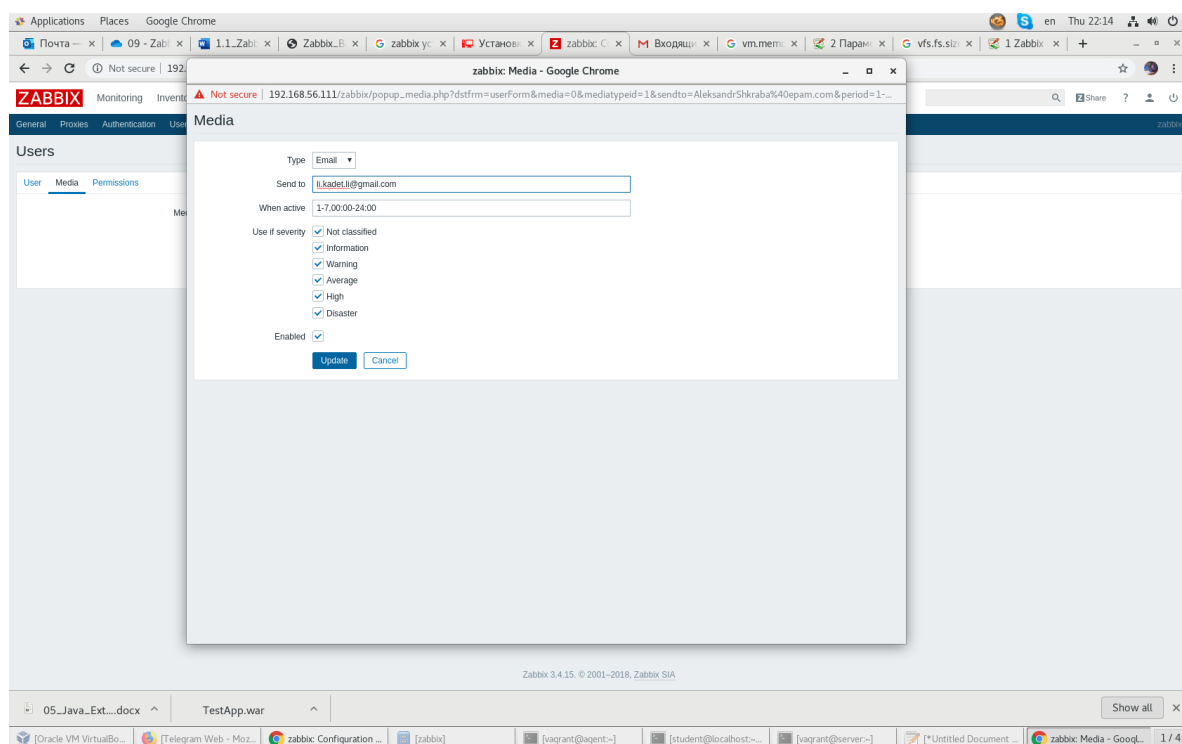
- Create trigger with Severity HIGH, check if it works (Problem/Recovery)

The screenshot shows the Zabbix Dashboard at 21:55. The 'Problems' section displays one problem: 'My_trigger_fs_space' with severity 'HIGH', status 'RESOLVED', and duration '1m'. The 'Host status' section shows 'ProjectHosts' with 1 host without problems and 1 host with problems. The 'System status' section shows 'Zabbix server is running' and 'Number of items (enabled/disabled/templates)' as 77. The 'Status of Zabbix' section shows 'Zabbix server is running' and 'Number of items (enabled/disabled/templates)' as 117.

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

The screenshot shows the Zabbix Problems page at 22:20. The table lists several problems with severity 'HIGH' and status 'No'. The problems are related to 'My_trigger_fs_space' on host 'agentVM'. The table includes columns for Time, Severity, Recovery time, Status, Info, Host, Problem, Duration, Ack, Actions, and Tags.

Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
22:20:17	HIGH		No		agentVM	My_trigger_fs_space	8s	No	Done 2	
22:16:17	HIGH	22:19:17	No		agentVM	My_trigger_fs_space	3m	No	Failures 3	
22:10:17	HIGH	22:14:17	No		agentVM	My_trigger_fs_space	4m	No	Failures 3	
22:03:17	HIGH	22:08:17	No		agentVM	My_trigger_fs_space	5m	No	Failures 2	
21:50:17	HIGH	21:51:17	No		agentVM	My_trigger_fs_space	1m	No	Failures 1	

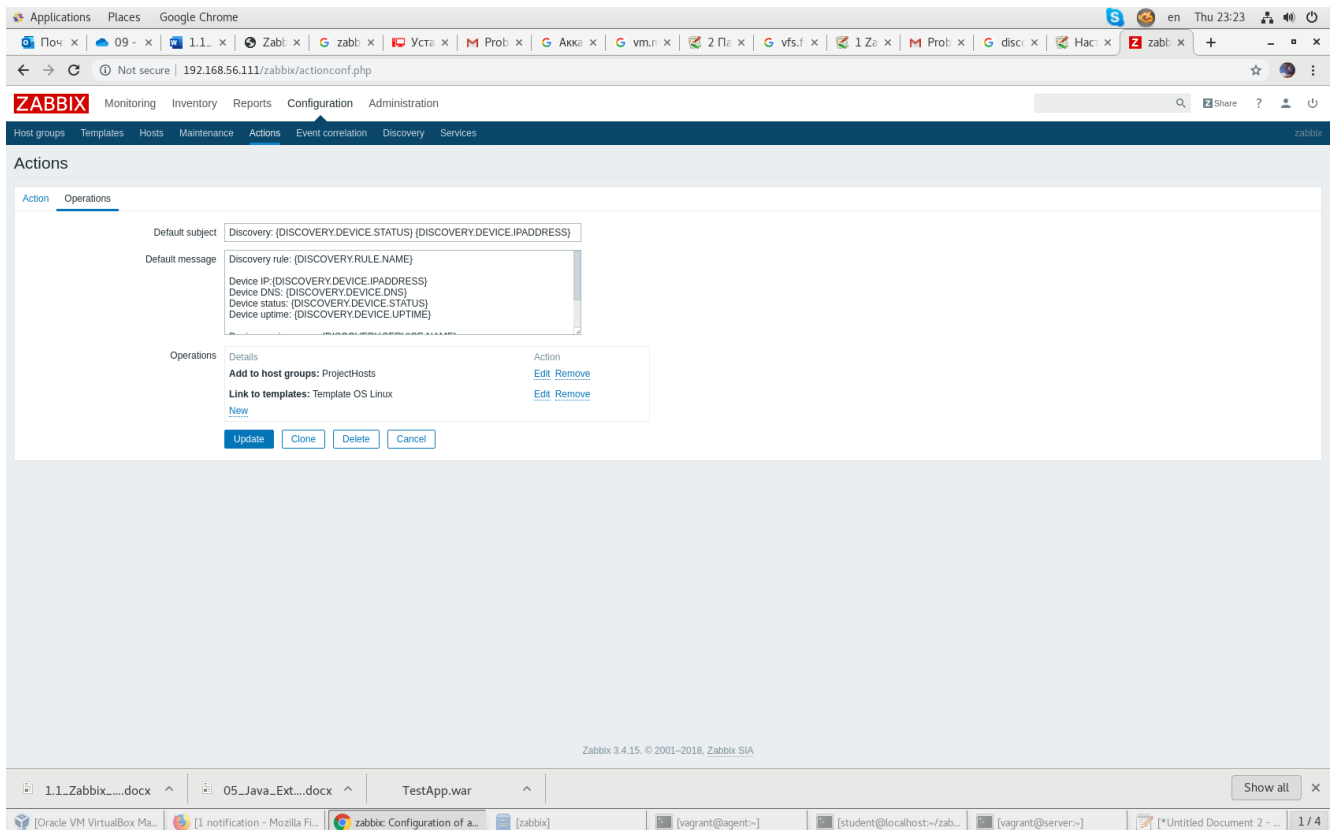


For both VMs use vagrant box “sbeliakou/centos-7.3-x86_64-minimal”

2. Using Zabbix UI:

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

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



Applications Places Google Chrome

1.1. x Zabl: x G zabl: x YCT: x M Prob: x Akka: x vm.л: x 2 П: x vfs.f: x 1 Z: x M Prob: x disc: x Hac: x zabl: x

Not secure 192.168.56.111/zabbix/actionconf.php?form=update&actionid=8

ZABBIX

Monitoring Inventory Reports Configuration Administration

Host groups Templates Hosts Maintenance Actions Event correlation Discovery Services

Actions

Action Operations

Name: my rule

Type of calculation: And/Or A and B and C and D

Conditions	Label	Name	Action
A	Received value =	Linux	Remove
B	Uptime/Downtime >=	3600	Remove
C	Discovery status =	Up	Remove
D	Service type =	Zabbix agent	Remove

New condition: Host IP = 192.168.0.1-127.192.168.2.1 [Add](#)

Enabled ☒

[Update](#) [Clone](#) [Delete](#) [Cancel](#)

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1.1_Zabbix.....docx 05_Java_Ext.....docx TestApp.war Show all x

Oracle VM VirtualBox Ma... Telegram Web - Mozilla ... zabbix: Configuration of a... [zabbix] [vagrant@agent:~] [student@localhost:~/zab... [vagrant@server:~] [*Untitled Document 2 - ... 1 / 4

Applications Places Google Chrome

1.1. x Zabl: x G zabl: x YCT: x M Prob: x Akka: x vm.л: x 2 П: x vfs.f: x 1 Z: x M Prob: x disc: x Hac: x zabl: x

Not secure 192.168.56.111/zabbix/zabbix.php?action=discovery.view&ddreset=1

ZABBIX

Monitoring Inventory Reports Configuration Administration

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

Status of discovery

Discovery rule: all

Discovered device	Monitored host	Uptime/Downtime	Zabbix agent: system.uptime
Local network (1 device)			
192.168.56.222		00:42:54	
my rule (1 device)			
192.168.56.222		00:33:11	

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1.1_Zabbix.....docx 05_Java_Ext.....docx TestApp.war Show all x

Oracle VM VirtualBox Ma... [I notification - Mozilla Fi... zabbix: Status of discover... [zabbix] [vagrant@agent:~] [student@localhost:~/zab... [vagrant@server:~] [*Untitled Document 2 - ... 1 / 4