ZABBIX 5.0

AUTOMATION – NETWORK DISCOVERY AND AGENT AUTOREGISTRATION

NETWORK DISCOVERY

REQUIREMENTS

- Direct network communication between the devices and Zabbix server/proxy
- Knowledge about what you're trying to discover

With network discovery properly set up you can:

- Speed up Zabbix deployment
- ⊘ simplify administration
- use Zabbix in rapidly changing environments without excessive administration

Zabbix network discovery is based on the following information:

⊘ IP ranges

- ⊘ Availability of external services (FTP, SSH, WEB, POP3, IMAP, TCP, etc)
- Information received from Zabbix agent (only unencrypted mode is supported)
- ⊘ Information received from SNMP agent

Configuration -> Discovery -> Create discovery rule

- ⊘ Agent configuration (Server=Zabbix server address)
- ⊘ Rule name
- ⊘ IP range
- ⊘ Update interval
- ⊘ Checks

* Name	Discover Zabbix agents	
Discovery by proxy	No proxy 🔻	
* IP range	10.1.1.0-254	
		h.
* Update interval	1m	
* Checks	Туре	Actions
	ICMP ping	Edit Remove
	Zabbix agent "agent.hostname"	Edit Remove
	Add	
Device uniqueness criteria	O IP address	
	Zabbix agent "agent.hostname"	
Host name	O DNS name	
	IP address	
	Zabbix agent "agent.hostname"	
Visible name	Host name	
	ODNS name	
	O IP address	
	Cabbix agent "agent.hostname"	
Enabled		

Checks

		Discovery check		<u>^</u>		
\oslash	FTP	Check type SNMPv3 agent 🗸				
\oslash	HTTP	* Port range 161				
\oslash	ICMP Ping	* SNMP OID				
\oslash	IMAP	Context name				
		Security name				
\oslash	LDAP	Security level noAuthNoPriv 🗸				
\oslash	NNTP		Add	ancel		
\oslash	POP		Discovery	check		х
\oslash	SMTP		Check type	TCP 🗸		
\oslash	SNMP (v1, v2, v3)		* Port range	0		
\oslash	SSH	Discovery check		×	Add	Cancel
\oslash	ТСР	Check type Zabbix agent 🗸				
Ŭ		* Port range 10050				
\oslash	Telnet	* Key				
\oslash	Zabbix agent		Add Ca	incel		

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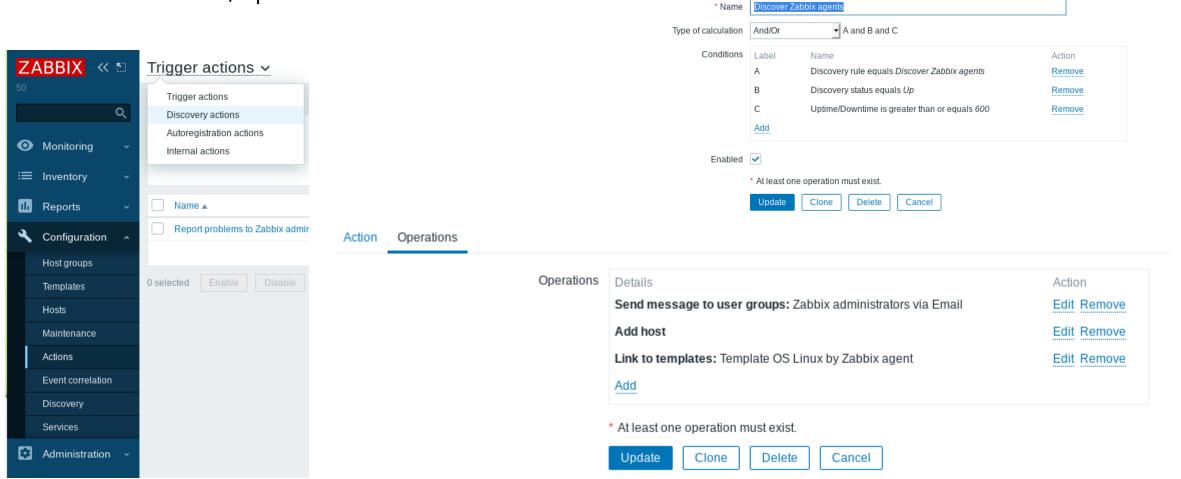
Monitoring -> Discovery

Discovered device	Monitored host	Uptime/Downtime	ICMP ping	Zabbix agent: agent.hostname
Discover Zabbix agents (4 devices)				
10.1.1.1 (_gateway)		00:15:54	10m 27s	46s
10.1.1.77 (centos6)			10m 13s	15m 54s
10.1.1.214 (zabb50)			9m 28s	9m 28s
10.1.1.227 (zabb40)			8m 12s	14m 42s

Configuration -> Actions -> Discovery actions

Design actions based on discovery results

If conditions are met, operations are executed



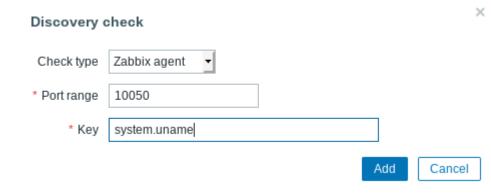
Action Operations

Hostname from agent.hostname

	Name 🔺	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent enc
	40	Applications 11	Items 42	Triggers 14	Graphs 8	Discovery 3	Web	10.1.1.227: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	NONE
	50	Applications 12	ltems 50	Triggers 15	Graphs 11	Discovery 3	Web	10.1.1.214: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	NONE
	cento6	Applications 12	ltems 50	Triggers 15	Graphs 11	Discovery 3	Web	10.1.1.77: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	NONE
	tofiks	Applications 17	ltems 90	Triggers 20	Graphs 26	Discovery 3	Web	10.1.1.1: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	NONE

Discovered device	Monitored host	Uptime/Downtime	ICMP ping	Zabbix agent: agent.hostname
Discover Zabbix agents (4 devices)				
10.1.1.1 (_gateway)	tofiks	00:04:33	22m 1s	12m 20s
10.1.1.77 (centos6)	cento6	00:04:19	21m 47s	27m 28s
10.1.1.214 (zabb50)	50	00:02:40	21m 2s	21m 2s
10.1.1.227 (zabb40)	40	00:27:28	19m 46s	26m 16s

What if all hosts are not based on Linux?



Name 🔺	Conditions	Operations
Discover Zabbix agents Linux	Discovery rule equals <i>Discover Zabbix agents</i> Received value contains <u>Linux</u> Uptime/Downtime is greater than or equals 600 Discovery status equals <i>Up</i>	Send message to user groups: Zabbix administrators via Email Add to host groups: Servers/Linux Link to templates: Template OS Linux by Zabbix agent
Discover Zabbix agents Windows	Discovery rule equals <i>Discover Zabbix agents</i> Received value contains <u>Windows</u> Uptime/Downtime is greater than or equals 600 Discovery status equals <i>Up</i>	Send message to user groups: Zabbix administrators via Email Add to host groups: Servers/Windows Link to templates: Template OS Windows by Zabbix agent

Monitoring -> Discovery

Discovered device	Monitored host	Uptime/Downtime	ICMP ping	Zabbix agent: system.hostname	Zabbix agent: system.uname
Discover Zabbix agents (5 devices)					
10.1.1.1 (_gateway)	tofiks.zabbix.lan	00:41:53	59m 21s	1m 18s	12m 34s
10.1.1.77 (centos6)	cento6	00:41:39	59m 7s	1m 16s	12m 31s
10.1.1.214 (zabb50)	50	00:40:00	58m 22s	1m 14s	12m 29s
10.1.1.227 (zabb40)	40	01:04:48	57m 6s	1m 5s	12m 27s
10.12.12.251	ZABBIX-PC	00:12:25	12m 25s	1m 30s	12m 25s

Configuration -> Hosts

40 Applications 12 Items 50 Triggers 15 Graphs 11 Discov	very 3 Web 10.1.1.227: 10050	Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled ZBX SNMP JMX IPMI NONE
50 Applications 12 Items 50 Triggers 15 Graphs 11 Discov	very 3 Web 10.1.1.214: 10050	Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled ZBX SNMP JMX IPMI NONE
cento6 Applications 12 Items 50 Triggers 15 Graphs 11 Discov	very 3 Web 10.1.1.77: 10050	Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled ZBX SNMP JMX IPMI NONE
tofiks.zabbix.lan Applications 17 Items 90 Triggers 20 Graphs 26 Discov	very 3 Web 10.1.1.1: 10050	Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled ZBX SNMP JMX IPMI NONE
ZABBIX-PC Applications 11 Items 31 Triggers 12 Graphs 5 Discov	very 4 Web 10.12.12.251: 10050	Template OS Windows by Zabbix agent (Template Module Windows CPU by Zabbix agent, Template Module Windows filesystems by Zabbix agent, Template Module Windows generic by Zabbix agent, Template Module Windows memory by Zabbix agent, Template Module Windows network by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows ag	Enabled ZEX SNMP JMX IPMI NONE

What if host is removed and not in use anymore?

Discovered device	Monitored host	Uptime/Downtime	ICMP ping	Zabbix agent system.hostname	Zabbix agent: system.uname
Discover Zabbix agents (5 devices)	tofiks.zabbix.lan	00:53:33	1h 11m 1s	12m 58s	24m 14s
10.1.1.77 (centos6)	cento6	00:53:19	1h 10m 47s	12m 56s	24m 11s
10.1.1.214 (zabb50)	50	00:51:40	1h 10m 2s	12m 54s	24m 9s
10.1.1.227 (zabb40)	40	01:16:28	1h 8m 46s	12m 45s	24m 7s
10.12.12.251	ZABBIX-PC	00:07:52	7m 52s	8m 21s	8m 21s

Configuration -> Actions -> Create action

Use downtime length to decide when a host should be removed

* Name	Remove offl	ine hosts				
Type of calculation	And/Or	A and B		Operations	Details Send message to user groups: Zabbix administrators via Email	Action Edit Remove
Conditions	Label A B	Name Uptime/Downtime is greater than or equals 600 Discovery status equals <i>Down</i>	Action Remove Remove		Remove host	Edit Remove
Enabled	Add				* At least one operation must exist. Update Clone Delete Cancel	
	* At least one	operation must exist.				
	Update	Clone Delete Cancel				

Discovered device ▲	Monitored host	Uptime/Downtime	ICMP ping	Zabbix agent: system.hostname	Zabbix agent: system.uname
Discover Zabbix agents (5 devices)					
10.1.1.1 (_gateway)	tofiks.zabbix.lan	00:55:52	1h 13m 20s	15m 17s	26m 33s
10.1.1.77 (centos6)	cento6	00:55:38	1h 13m 6s	15m 15s	26m 30s
10.1.1.214 (zabb50)	50	00:53:59	1h 12m 21s	15m 13s	26m 28s
10.1.1.227 (zabb40)	40	01:18:47	1h 11m 5s	15m 4s	26m 26s
10.12.12.251		00:10:11	10m 11s	10m 40s	10m 40s

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ACTIVE AGENT AUTOREGISTRATION

Agent configuration

/etc/zabbix/zabbix_agent.conf

C:\Program Files\Zabbix Agent\zabbix_agentd.conf

ServerActive=Zabbix server

Hostname=DESKTOP-B0DQMUF

or

Hostnameltem=system.hostname

HostMetadata=

or

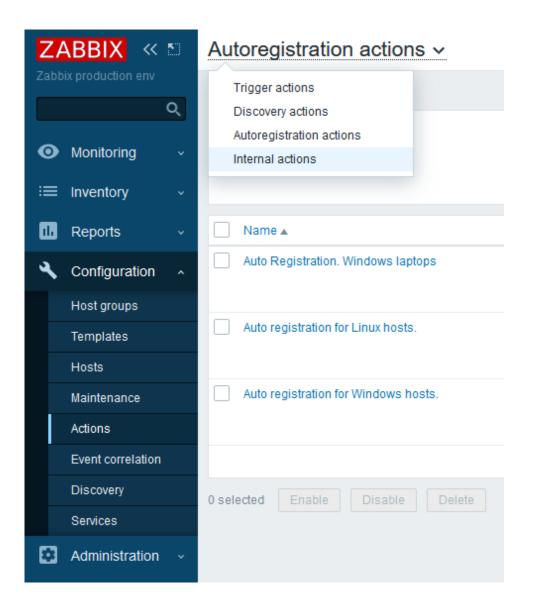
HostMetadataltem=system.uname

HostInterface=

or

HostInterfaceItem=

Configuration -> Actions -> Autoregistration actions



Configuration -> Actions -> Autoregistration actions

Auto registration for Linux	Host metadata contains Linux	Send message to user groups: Zabbix administrators via Email Add to host groups: Linux servers Link to templates: Template OS Linux
Auto registration for Windows hosts.	Host metadata contains Windows	Send message to user groups: Zabbix administrators via Email Add to host groups: Windows servers Link to templates: Template OS Windows

Configuration -> Hosts

Name 🔺	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status
40	Applications 15	ltems 66	Triggers 26	Graphs 14	Discovery 3	Web	10.1.1.227: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled
50	Applications 15	Items 66	Triggers 26	Graphs 14	Discovery 3	Web	10.1.1.214: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zab	Enabled
tofiks	Applications 30	Items 178	Triggers 63	Graphs 39	Discovery 3	Web	10.1.1.1: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled
ZABBIX-PC	Applications 11	ltems 31	Triggers 12	Graphs 5	Discovery 4	Web	10.1.1.77: 10050		Template OS Windows by Zabbix agent (Template Module Windows CPU by Zabbix agent, Template Module Windows filesystems by Zabbix agent, Template Module Windows generic by Zabbix agent, Template Module Windows memory by Zabbix agent, Template Module Windows network by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows services by Zabbix agent, Template Module Zabbix agent)	Enabled

Agent interface

IP by default



HostInterface=centos50.zabbix.lan



Agent interface

Name 🔺	Applications	Items	Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability
40	Applications 12	ltems 50	Triggers 15	Graphs 11	Discovery 3	Web	10.1.1.227: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI
50	Applications 11	ltems 42	Triggers 14	Graphs 8	Discovery 3		centos50.zabbix.lan: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI
tofiks	Applications 17	ltems 90	Triggers 20	Graphs 26	Discovery 3	Web	10.1.1.1: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI
ZABBIX-PC	Applications 11	ltems 31	Triggers 12	Graphs 5	Discovery 4	Web	10.1.1.77: 10050		Template OS Windows by Zabbix agent (Template Module Windows CPU by Zabbix agent, Template Module Windows filesystems by Zabbix agent, Template Module Windows network by Zabbix agent, Template Module Windows network by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows services by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI

03

ACTIVE AGENT AUTOREGISTRATION WITH ENCRYPTION

Administration -> General -> Autoregistration

No encryption

PSK

Both

Autoregistration \checkmark

	No encryption PSK
* PSK identity	zabbix
* PSK	9d5f2c768a70bec5fc7fd983f22dd56c701e3141723d5d150da478cbdbedec40
	Update

Agent configuration

TLSConnect=psk

TLSAccept=psk

TLSPSKIdentity=zabbix

TLSPSKFile=/home/zabbix/agent.key

#TLSPSKFile=C:\Program Files\Zabbix Agent\agent.key

Configuration -> Hosts

Name 🔺	Applications	ltems Triggers	Graphs	Discovery	Web	Interface	Proxy	Templates	Status	Availability	Agent encryption	Info Tags
40	Applications 12	Items 50 Triggers	15 Graphs 1	1 Discovery 3	3 Web	10.1.1.227: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	PSK NONE PSK CERT	
50	Applications 11	Items 42 Triggers	14 Graphs 8	Discovery 3	3 Web	centos50.zabbix.lan: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	PSK NONE PSK CERT	
tofiks	Applications 17	Items 90 Triggers	20 Graphs 2	6 Discovery 3	3 Web	10.1.1.1: 10050		Template OS Linux by Zabbix agent (Template Module Linux block devices by Zabbix agent, Template Module Linux CPU by Zabbix agent, Template Module Linux filesystems by Zabbix agent, Template Module Linux generic by Zabbix agent, Template Module Linux memory by Zabbix agent, Template Module Linux network interfaces by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	NONE	
ZABBIX-PC	C Applications 11	Items 31 Triggers	12 Graphs 5	Discovery 4	↓ Web	10.1.1.77: 10050		Template OS Windows by Zabbix agent (Template Module Windows CPU by Zabbix agent, Template Module Windows filesystems by Zabbix agent, Template Module Windows generic by Zabbix agent, Template Module Windows memory by Zabbix agent, Template Module Windows network by Zabbix agent, Template Module Windows physical disks by Zabbix agent, Template Module Windows services by Zabbix agent, Template Module Zabbix agent)	Enabled	ZBX SNMP JMX IPMI	PSK NONE PSK CERT	
											Displaying	l of 4 found

Displaying 4 of 4 found

Agent configuration

HostMetadata=Linux mysql

Configuration -> Actions

Autoregister MySQL servers

Host metadata contains mysql

Send message to user groups: Zabbix administrators via all media Add to host groups: MySQL servers Link to templates: Template DB MySQL by Zabbix agent

Configuration -> Hosts

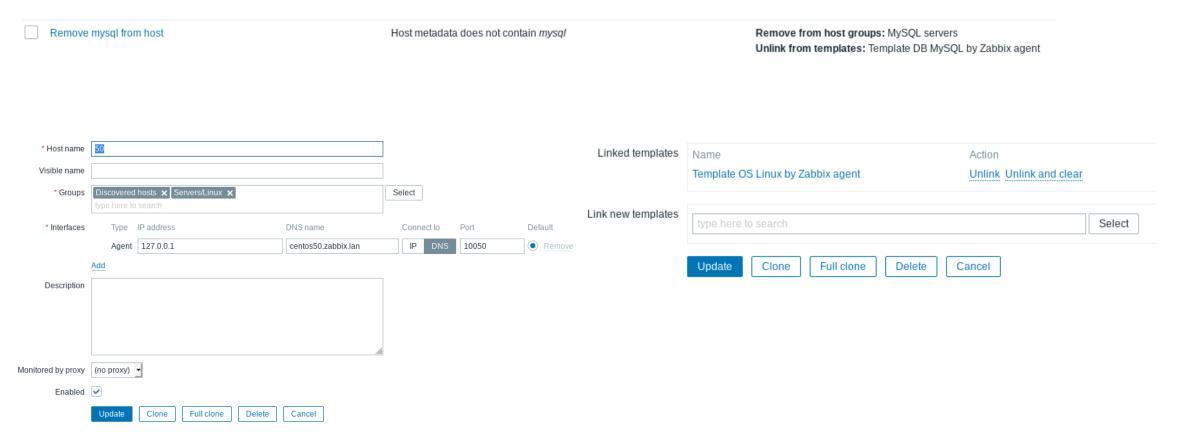
50	Applications 13 Items	91 Triggers 23	Graphs 17 Di	iscovery 5 Web	centos50.zabbix.lan: 10050		Template DB MySQL by Zabbix agent, Template OS L Template Module Linux CPU by Zabbix agent, Templa generic by Zabbix agent, Template Module Linux mer agent, Template Module Zabbix agent)	ate Module Linux filesystems	by Zabbix ager	nt, Template Module Linux	Enabled ZBX SNMP JMX IPMI
* Host name Visible name * Groups * Interfaces	Discovered hosts X MySQL servers X Servers/Li type here to search	Inux X DNS name centos50 zabbix lan	Select Connectio Port IP DNS 10050	Default	Linked templates		te DB MySQL by Zabbix agent te OS Linux by Zabbix agent	Action Unlink Unlink and clea Unlink Unlink and clea	•		
Description Monitored by proxy Enabled		Cancel			Link new templates	type h	ere to search e Clone Full clone Delete C	ancel	Select		

Monitoring -> Hosts -> Graphs



Host no longer serving MySQL?

Another action:



THANK YOU!