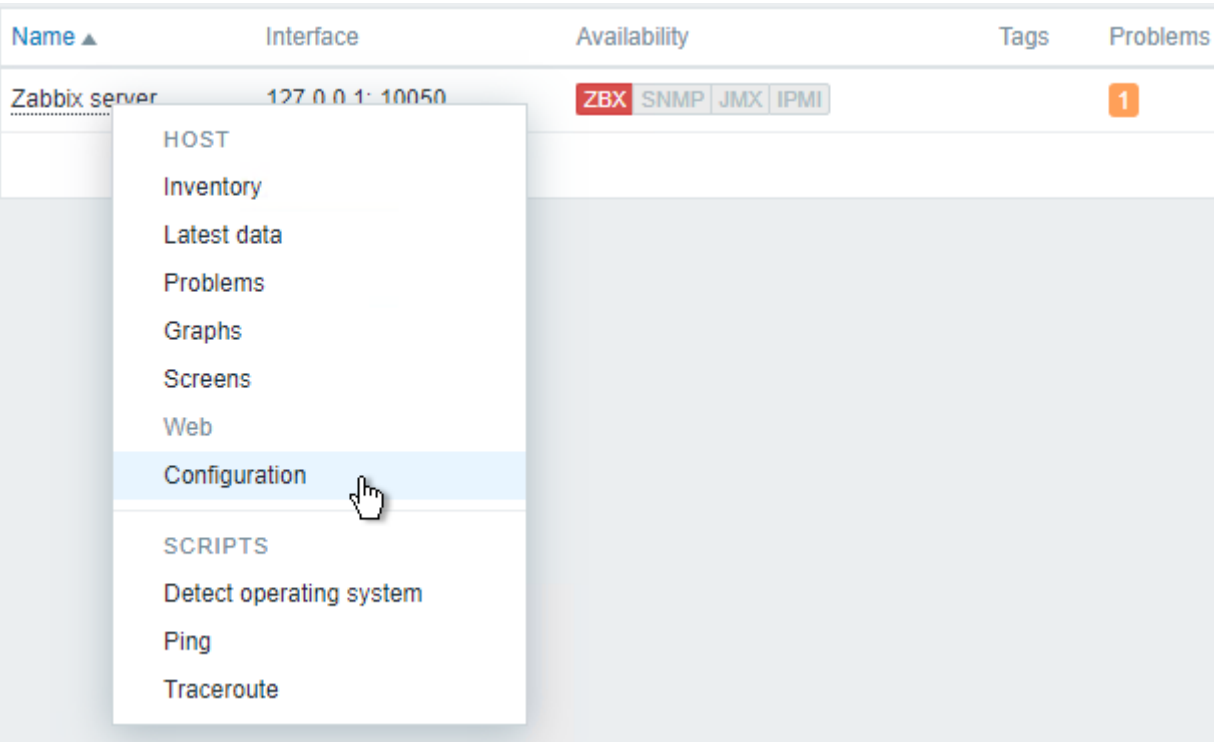


# Configure Zabbix Docker

## Configure Zabbix Server to point to zabbix-agent container

- Navigate to **Monitoring --> Hosts --> Zabbix Server --> Configuration (Figure 1)**

Figure 1



- Clear **127.0.0.1** from IP address field
- Enter **zabbix-agent** in the **DNS name** field
- Set **Connect to** field to **DNS**
- Click the **Update** button (Figure 2)

Figure 2

### Hosts

[All hosts](#) / [Zabbix server](#) Enabled ZBX SNMP JMX IPMI Applications 22 Items 137 Triggers 84 Graphs 26 Discovery rules 3 Web scenarios

[Host](#) [Templates](#) [IPMI](#) [Tags](#) [Macros](#) [Inventory](#) [Encryption](#)

\* Host name

Zabbix server

Visible name

\* Groups

Zabbix servers

type here to search

Select

\* Interfaces

Type	IP address	DNS name	Connect to	Port	Default
Agent		zabbix-agent	<div>IPDNS</div>	10050	<div><input checked="" type="radio"/> Remove</div>

# Configure Zabbix Server Timezone

Edit /opt/zabbix-docker/.env\_web uncomment the following line:

```
#PHP_TZ=Europe/Riga
```

Navigate to <http://php.net/manual/en/timezones.php> locate your local timezone and set PHP\_TZ to it, for example for American Eastern you would set it to the following:

```
PHP_TZ=America/New_York
```

# Configure Zabbix Server Server Name

Edit /opt/zabbix-docker/.env\_web and set the following line:

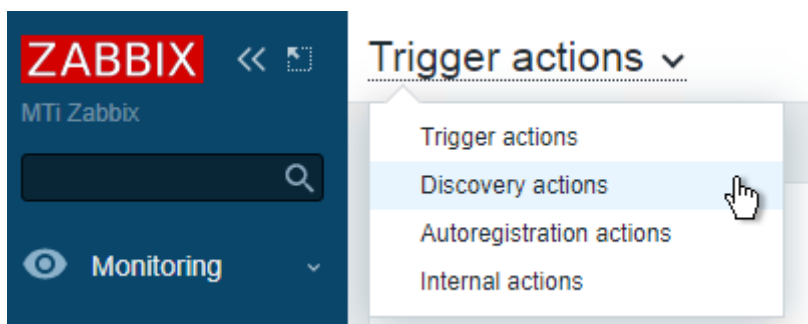
```
ZBX_SERVER_NAME=Composed installation
```

to a server name that you like (Example: ZBX\_\*SERVER\_\*NAME=Widgets, Inc)

# Configure Zabbix Auto Discover

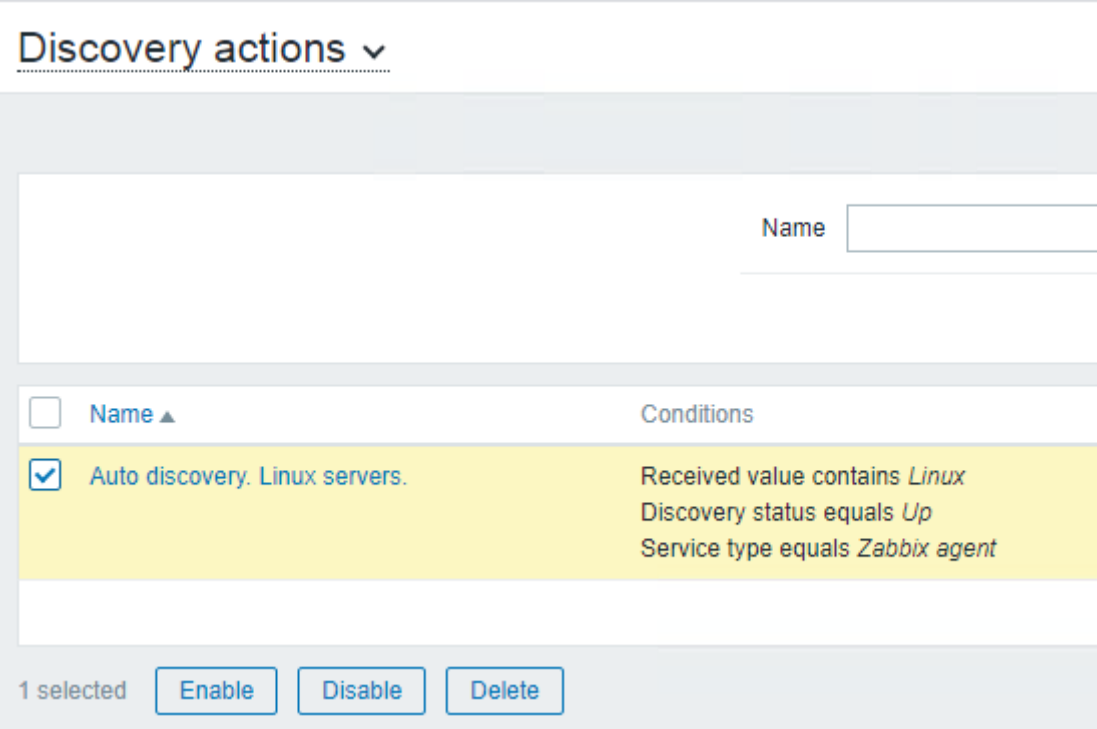
- Navigate to **Configuration --> Actions --> Actions Drop-down --> Discovery actions (Figure 3)**

**Figure 3**



- Select **Auto discovery. Linux servers** and click **Enable (Figure 4)** to enable Linux hosts auto discovery

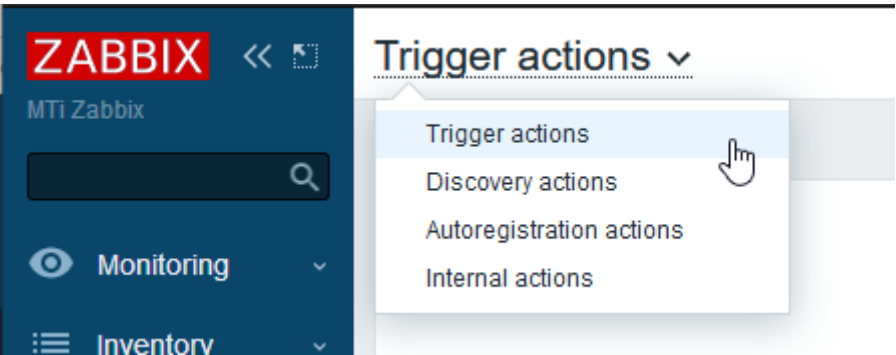
Figure 4



# Enable Zabbix Notifications

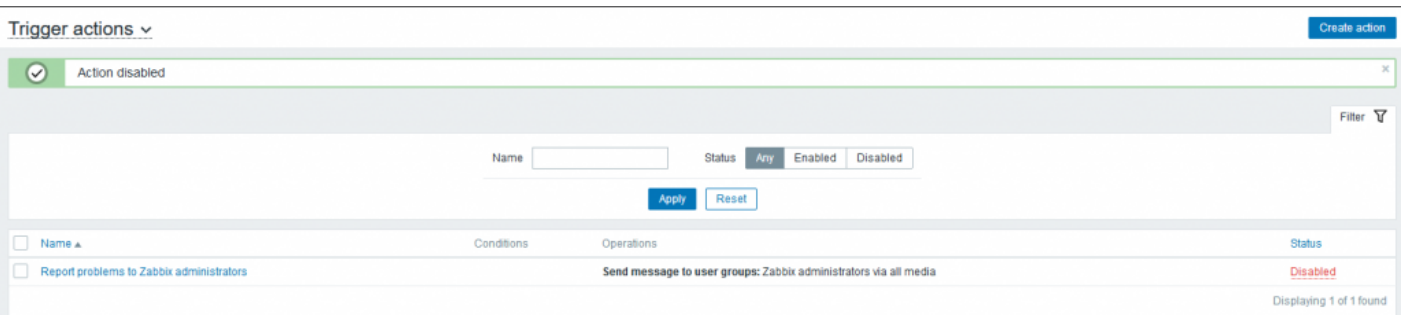
- Navigate to **Configuration --> Actions -->Actions Drop-down --> Trigger actions ( Figure 5)**

Figure 5



- Ensure you have already configured notifications under **Administration --> Media types**.
- Click the **Disabled** link under the **Status** column in the **Report problems to Zabbix administrators** item in order to change the status to **Enabled (Figure 6)**.

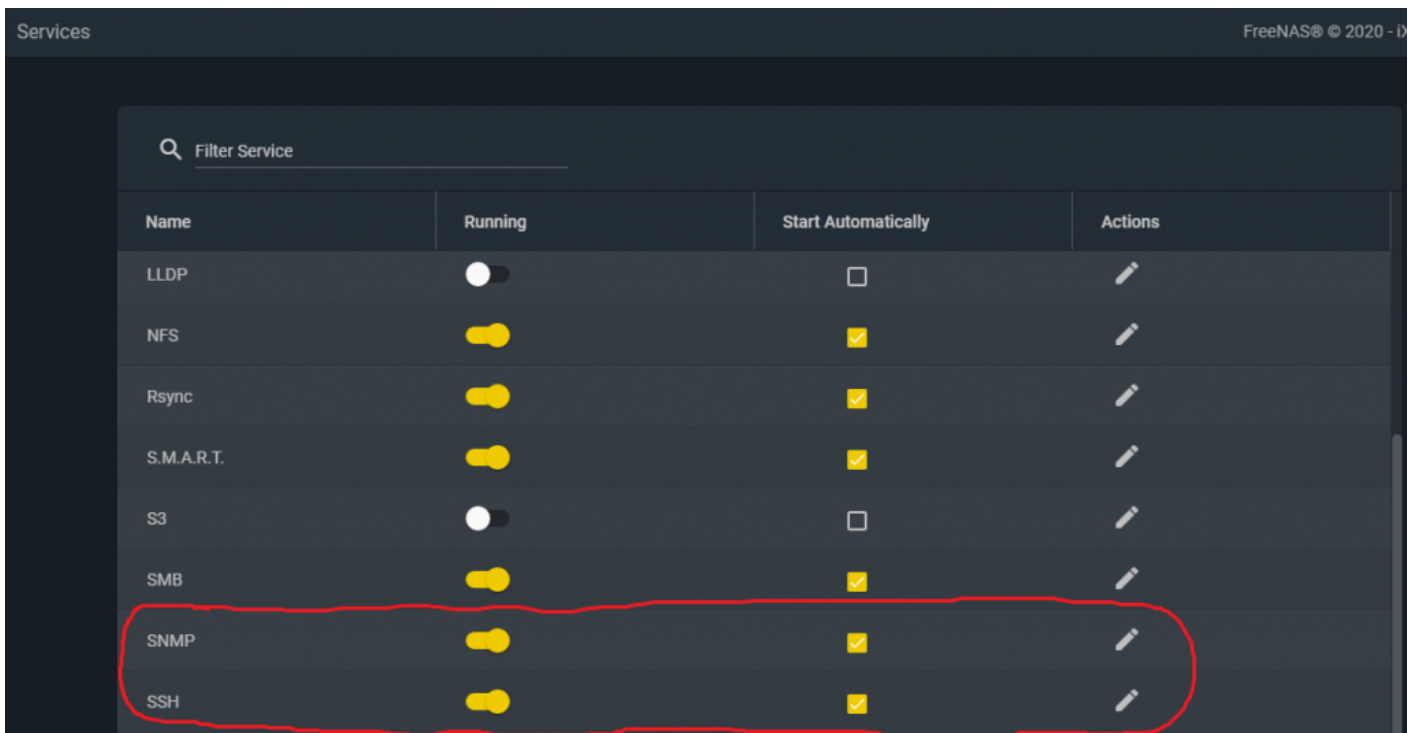
Figure 6



# Enable Zabbix FreeNAS Monitoring

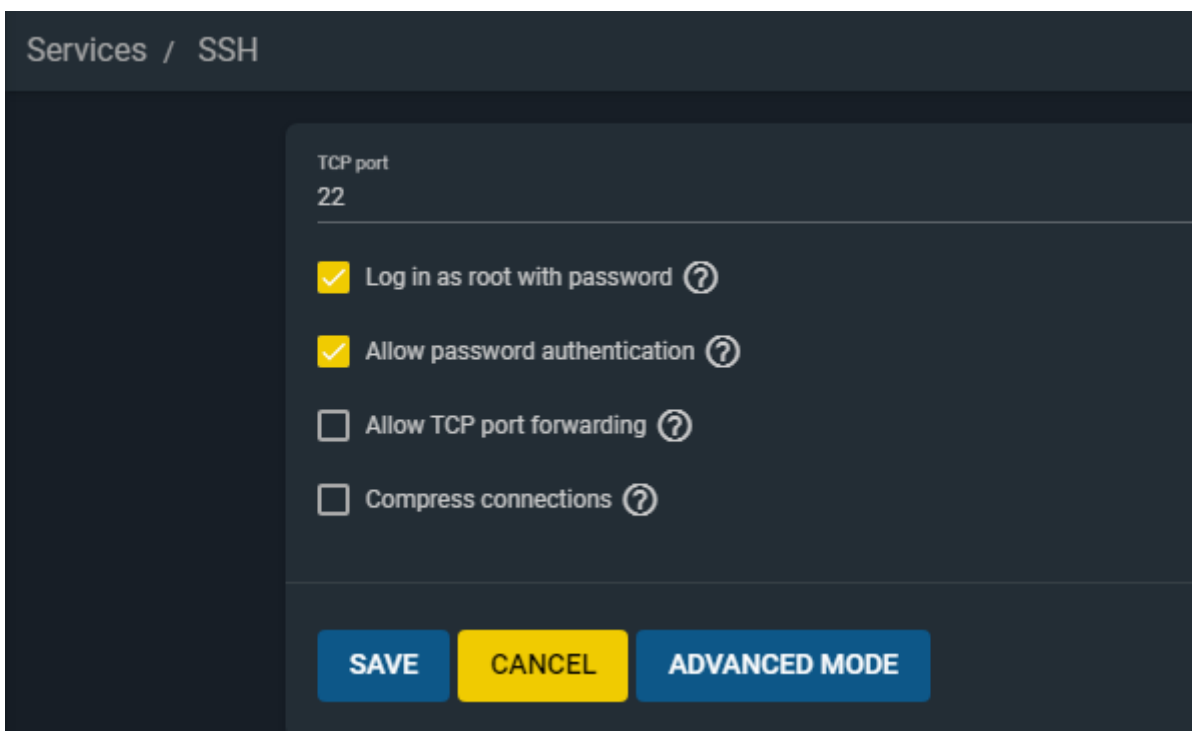
- On FreeNAS server enable **SNMP** by going to **Services --> SNMP** and set it to **Running** and **Start Automatically** and enable **SSH** by going to **Services --> SSH** and set it to **Running** and **Start Automatically** (Figure 7).

Figure 7



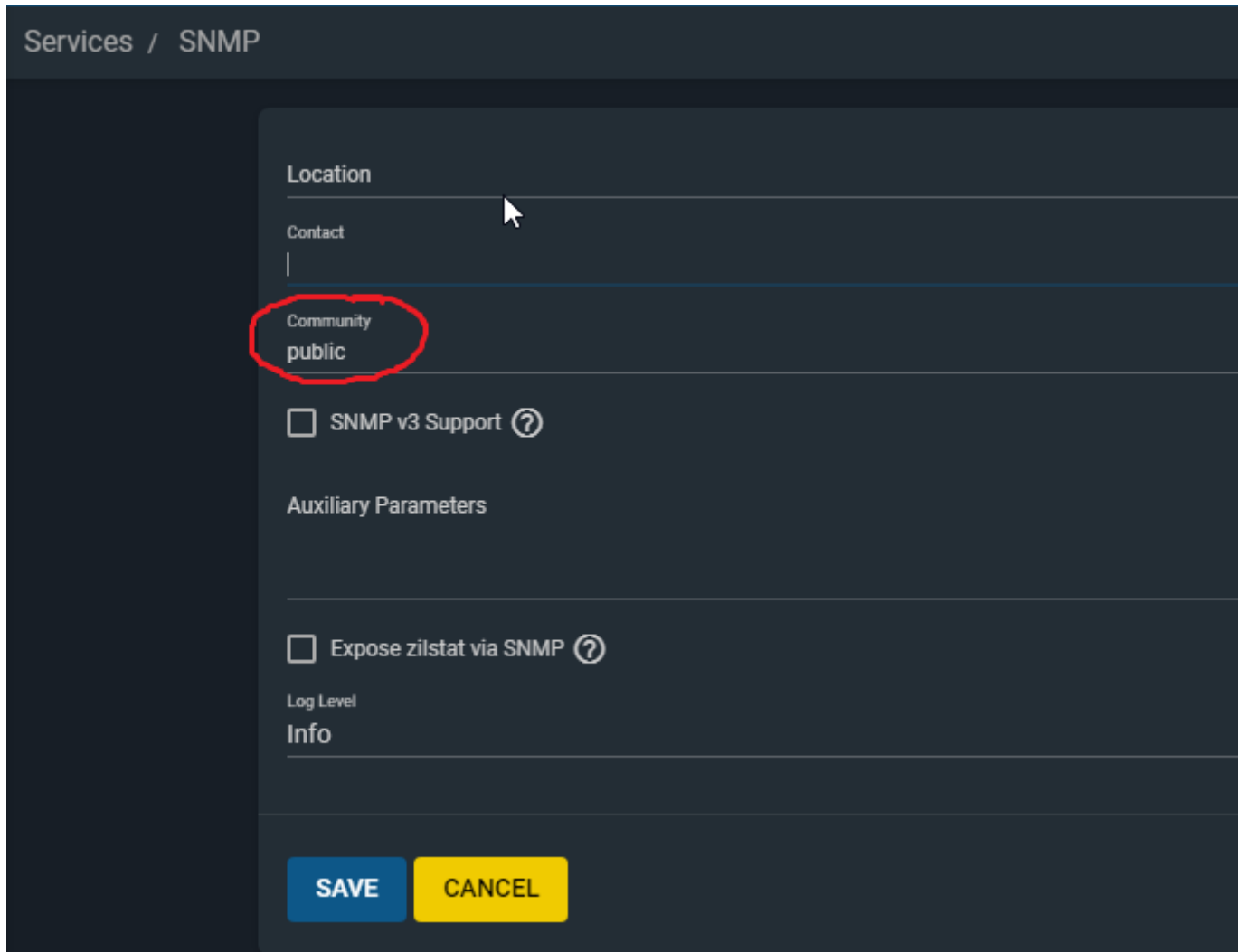
- On FreeNAS server, under **Services**, click on **SSH --> Actions** and ensure **Log in as root with password** and **Allow password authentication** checkboxes are checked and click the **Save** button (Figure 8).

Figure 8



- On FreeNAS server, under **Services**, click on **SNMP --> Actions** and note the **Community** string (default is **public**) or change as required and optionally set the **Log Level** to **Info** if you wish to get more information out of FreeNAS and click the **Save** button (**Figure 9**).

**Figure 9**



The screenshot shows the 'Services / SNMP' configuration interface. The 'Location' field is empty. The 'Contact' field is empty. The 'Community' field is highlighted with a red circle and contains the value 'public'. Below this, there is a checkbox for 'SNMP v3 Support' which is unchecked. Under the 'Auxiliary Parameters' section, there is a checkbox for 'Expose zabbix via SNMP' which is unchecked. The 'Log Level' is set to 'Info'. At the bottom, there are two buttons: 'SAVE' (blue) and 'CANCEL' (yellow).

- Using WinSCP or scp download the following file from the FreeNAS server:

```
/usr/local/share/snmp/mibs/FREENAS-MIB.txt
```

- Upload the **FREENAS-MIB.txt** file to the Zabbix Docker server in the following directory:

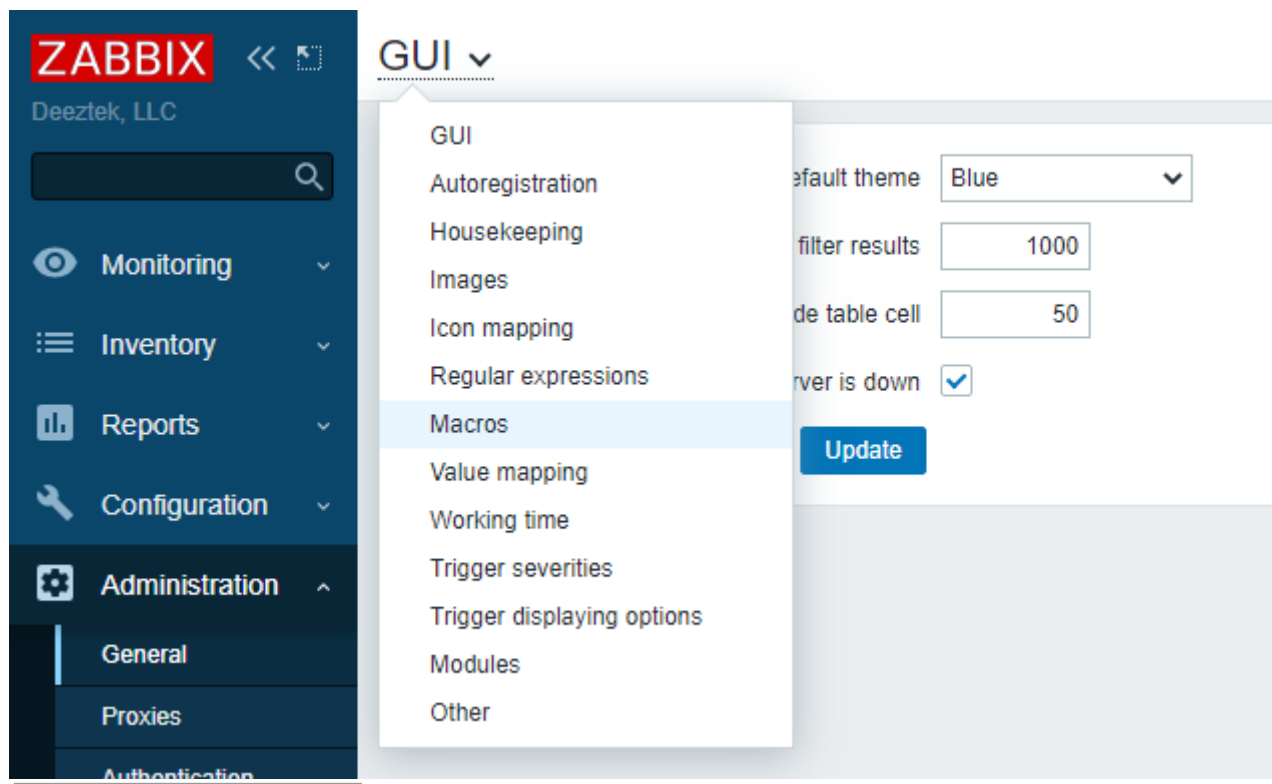
```
/opt/zabbix-docker/zbx_env/var/lib/zabbix/mibs
```

- Restart the Zabbix docker stack:

```
cd /opt/zabbix-docker && docker-compose down
cd /opt/zabbix-docker && docker-compose up -d
```

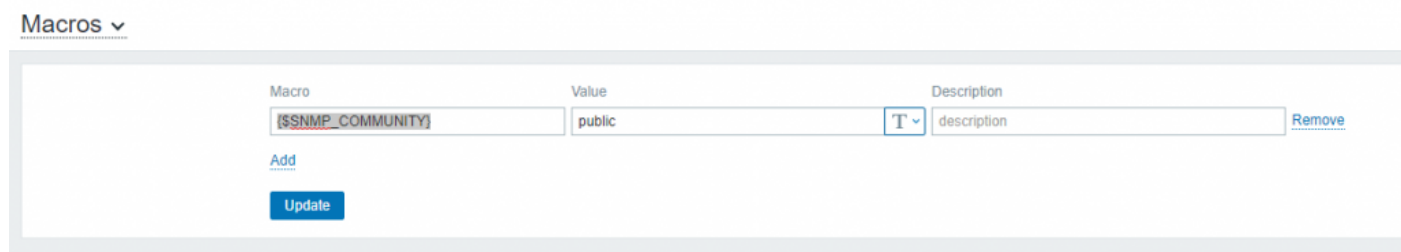
- On the Zabbix server navigate to **Administration --> General --> GUI drop-down --> Macros (Figure 10)**

**Figure 10**



- Ensure the **Value** field of the **{ \$SNMP\_COMMUNITY }** Macro is set to **public** or whatever value you set the FreeNAS Community string from above and click the **Update** button ( **Figure 11**).

**Figure 11**



- Using a web browser download the following templates from Zabbix Share:

SNMP Interfaces discovery

<https://share.zabbix.com/official-templates/snmp-devices/snmp-interfaces-discovery>

SNMP Interfaces discovery

<https://share.zabbix.com/official-templates/snmp-devices/snmp-processors-discovery>

SNMP Generic

<https://share.zabbix.com/official-templates/snmp-devices/snmp-generic>

FreeNAS 11 SNMP

<https://share.zabbix.com/storage-devices/freenas/freenas-11>

- On the Zabbix server navigate to **Configuration --> Templates --> Import** and import each of the templates you downloaded above ensuring the **Rules** are set like below before each import (**Figure 12**):

Figure 12

Import

\* Import file

Choose File

template-snmp-processors-discovery-1.0.0.xml

Rules	Update existing	Create new	Delete missing
Groups		<input checked="" type="checkbox"/>	
Hosts	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Templates	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Template screens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Template linkage		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Applications		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Items	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Discovery rules	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Triggers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Graphs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Web scenarios	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Screens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Maps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Images	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Media types	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Value mappings	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Import

Cancel

- On the Zabbix server navigate to **Configuration --> Hosts --> Create Host**
- In the **Host** tab, fill out the **Host name**, **groups** and **interfaces** where **192.168.xxx.xxx** is the IP of your FreeNAS host (**Figure 13**)

Figure 13

Hosts

All hosts / hdgfreenas.deeztek.com

EnabledZBXSNMPJMXIPMI

Applications 8Items 306Triggers 64Graphs 138Discovery rules 5Web scenarios

Host

Templates

IPMI

Tags

Macros

Inventory

Encryption

\* Host name

freenas

Visible name

\* Groups

FreeNAS x HDG x

type here to search

Select

\* Interfaces

Type	IP address	DNS name	Connect to	Port	Default
Agent	192.168.xxx.xxx		IP DNS	10050	<input checked="" type="radio"/> Remove
SNMP	192.168.xxx.xxx		IP DNS	161	<input checked="" type="radio"/> Remove

\* SNMP version

SNMPv1

\* SNMP community

{\${SNMP\_COMMUNITY}}

☒ Use bulk requests

Add

Description

Monitored by proxy

(no proxy)

Enabled

☒

Update

Clone

Full clone

Delete

Cancel

- In the **Templates** tab, ensure you link the **Template Module ICMP Ping** and the **Template SNMP FREENAS 11** templates and click the **Update** button (**Figure 14**)

Figure 14

Hosts

All hosts / hdgfreenas.deeztek.com

EnabledZBXSNMPJMXIPMI

Applications 8Items 306Triggers 64Graphs 138Disc

Host

Templates

IPMI

Tags

Macros

Inventory

Encryption

Linked templates

Name	Action
Template Module ICMP Ping	<a href="#">Unlink</a> <a href="#">Unlink and clear</a>
Template SNMP FreeNAS 11	<a href="#">Unlink</a> <a href="#">Unlink and clear</a>

Link new templates

type here to search

Select

Update

Clone

Full clone

Delete

Cancel

- Wait 10-15 minutes before Zabbix starts pulling data from the FreeNAS server. If successful, **Monitoring --> Hosts** should show the FreeNAS server listed with **SNMP** turned green (**Figure 15**)

Figure 15



# Enable Zabbix VMware Monitoring

Original Guide URL:

<https://bestmonitoringtools.com/vmware-monitoring-with-zabbix-esxi-vmware-vm-vsphere/>

- Enable (Remove the # from front of each line) on the following entries in **/opt/zabbix-docker/.env\_srv** and save the file:

```
ZBX_STARTVMWARECOLLECTORS=3
ZBX_VMWAREFREQUENCY=60
ZBX_VMWAREPERFFREQUENCY=60
ZBX_VMWARECACHESIZE=128M
ZBX_VMWARETIMEOUT=120
```

Restart the Zabbix docker stack:

```
cd /opt/zabbix-docker && docker-compose down
cd /opt/zabbix-docker && docker-compose up -d
```

- Navigate to **Configuration --> Hosts --> Create Host**
- In the **Host** tab, fill out the **Host name** of your Vcenter/VMware server, and select **groups**. Do not fill out the IP address field, leave it to default **127.0.0.1** (**Figure 16**)

Figure 16

## Hosts

* Host name	Visible name	* Groups	* Interfaces	Type	IP address	DNS name	Connect to	Port	Default
vcenter		Hypervisors	Agent		127.0.0.1		IP	DNS	10050

- Click the **Templates** tab and select **Template VM VMware** and **Template Module ICMP Ping** templates (**Figure 17**)

**Figure 17**

## Hosts

Host
Templates
IPMI
Tags
Macros
Inventory
Encryption

Linked templates
Name
Action

Link new templates

Template VM VMware
Template Module ICMP Ping
type here to search

Select

Add
Cancel

- Click the **Macros** tab and then click **Inherited and host macros** button.
- Click the **Change** link next to each of the following fields and fill out the value of each field with the Password, URL (https://vcenter/sdk) and Username of your Vcenter/VMware server and click the **Add** button (**Figure 18**):

```

{$VMWARE.PASSWORD}
{$VMWARE.URL}
{$VMWARE.USERNAME}

```

**Figure 18**

## Hosts

Host
Templates
IPMI
Tags
Macros
Inventory
Encryption

Host macros
Inherited and host macros

Macro	Effective value	Template value
{\$ICMP_LOSS_WARN} <div>description</div>	20	T Change Template Module ICMP Ping: "20"
{\$ICMP_RESPONSE_TIME_WARN} <div>description</div>	0.15	T Change Template Module ICMP Ping: "0.15"
{\$SNMP_COMMUNITY} <div>description</div>	public	T Change
{\$VMWARE.PASSWORD} <div>VMware service {\$USERNAME} user password</div>	<div>VMware service user password</div>	T Remove Template VM VMware macros: ""
{\$VMWARE.URL} <div>VMware service (vCenter or ESX hypervisor) SDK URL (https://servername/sdk)</div>	<div>VMware service (vCenter or ESX hypervisor) SDK URL (https://servername/sdk)</div>	T Remove Template VM VMware macros: ""
{\$VMWARE.USERNAME} <div>VMware service user name</div>	<div>VMware service user name</div>	T Remove Template VM VMware macros: ""

Add

- VMware/Vcenter discovery can take hours to complete.
- Navigate to **Configuration --> Templates**. In the **Name** field enter **Template Vm VMware** and click the **Apply** button to locate the **Template Vm VMware** template ( **Figure 19**):

**Figure 19**

The screenshot shows the 'Templates' configuration page. At the top, there are search fields for 'Host groups' and 'Linked templates', both with the placeholder text 'type here to search'. Below these, the 'Name' field is set to 'Template Vm VMware' and is highlighted with a red circle. To the right of the 'Name' field, there are 'Apply' and 'Reset' buttons, with the 'Apply' button also highlighted with a red circle. Below the search fields, there is a table listing templates. The first row is 'Template VM VMware' with various links for Hosts, Applications, Items, Triggers, Graphs, Screens, Discovery, and Web. The other rows are 'Template VM VMware Guest', 'Template VM VMware Hypervisor', and 'Template VM VMware macros'.

- On the **Template Vm VMware** entry click on the **Discovery** link ( **Figure 20**):

**Figure 20**

The screenshot shows the 'Template VM VMware' entry in the 'Templates' list. The 'Discovery' link is highlighted with a red circle. The entry shows various links for Hosts, Applications, Items, Triggers, Graphs, Screens, Discovery, and Web. The 'Discovery' link is the one that is highlighted.

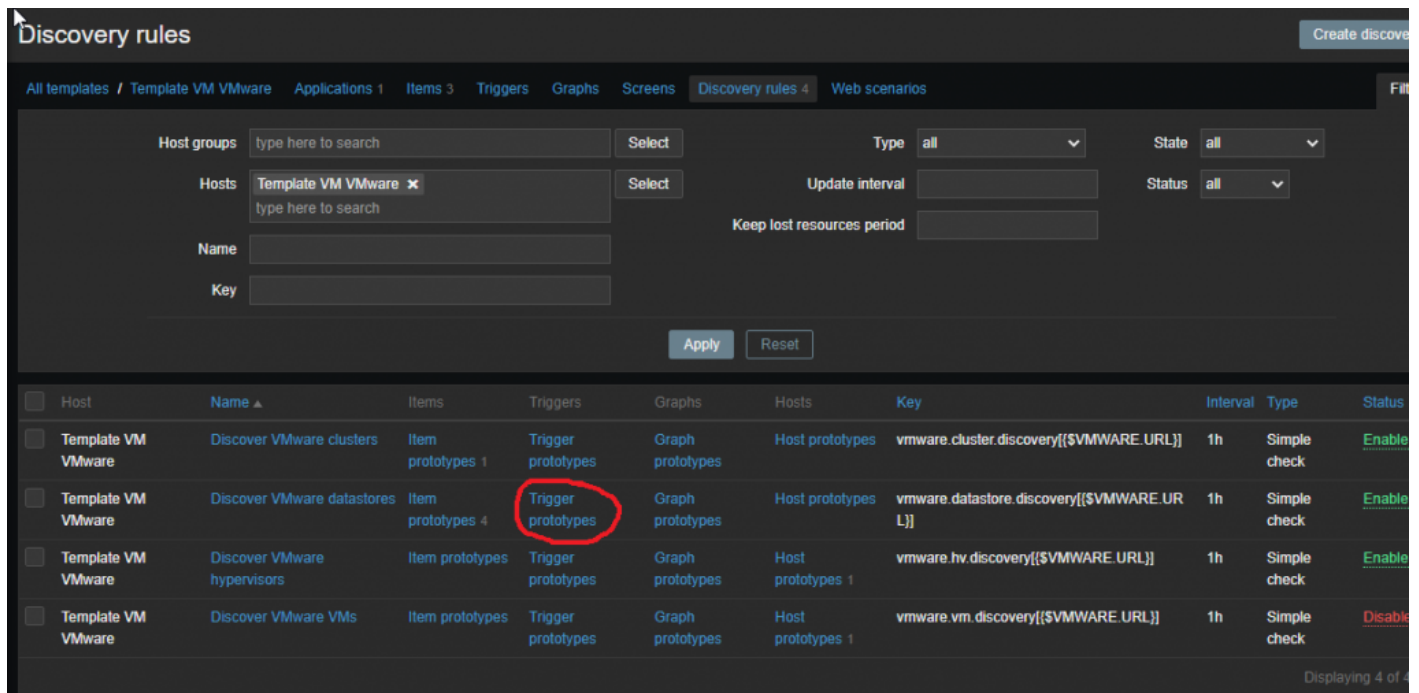
- On the **Discovery rules** screen, click on the **Enabled** link on the **Discover VMware VMs** entry to change the status to **Disabled** ( **Figure 21**):

**Figure 21**

The screenshot shows the 'Discovery rules' configuration page. At the top, there is a 'Discovery rule disabled' status bar. Below this, there are tabs for 'All templates', 'Template VM VMware', 'Applications', 'Items', 'Triggers', 'Graphs', 'Screens', 'Discovery rules', and 'Web scenarios'. The 'Discovery rules' tab is selected. Below the tabs, there are search fields for 'Host groups' and 'Hosts', both with the placeholder text 'type here to search'. To the right of these, there are 'Type', 'State', 'Update interval', 'Status', and 'Keep lost resources period' fields. Below these, there are 'Apply' and 'Reset' buttons. Below the search fields, there is a table listing discovery rules. The first row is 'Template VM VMware' with various links for Hosts, Applications, Items, Triggers, Graphs, Screens, Discovery, and Web. The other rows are 'Template VM VMware Guest', 'Template VM VMware Hypervisor', and 'Template VM VMware macros'. The 'Discover VMware VMs' entry is highlighted with a red circle, and its status is 'Disabled'.

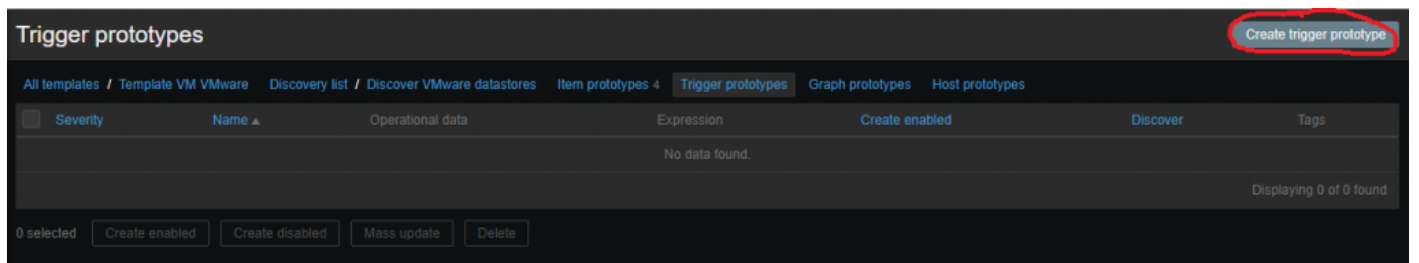
- Next, click on the **Trigger prototypes** on the **Discover VMware datastores** entry ( **Figure 22**):

**Figure 22**



- On the **Trigger prototypes** screen, click the **Create trigger prototype** button ( **Figure 23**):

**Figure 23**



- On the **Trigger prototype** screen, in the **Name** field enter the following:

Free space is less than 5% on datastore "{ #DATASTORE}"

- In the **Severity** field set it to **High**
- In the **Expression** field enter the following:

```
{Template VM VMware:vmware.datastore.size[{$VMWARE.URL},{ #DATASTORE},pfree].max(15m)}<5
```

- Click the **Add** button ( **Figure 24**):

Figure 24

Trigger prototype Tags Dependencies

\* Name Free space is less than 5% on datastore "#{DATASTORE}"

Operational data

Severity Not classified Information Warning Average High Disaster

\* Expression {Template VM VMware:vmware.datastore.size [{ \$VMWARE.URL },  
#{DATASTORE}, pfree] .max (15m) } < 5 Add

[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

Allow manual close ☐

URL

Description

Create enabled ☒

Discover ☒

Add Cancel

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