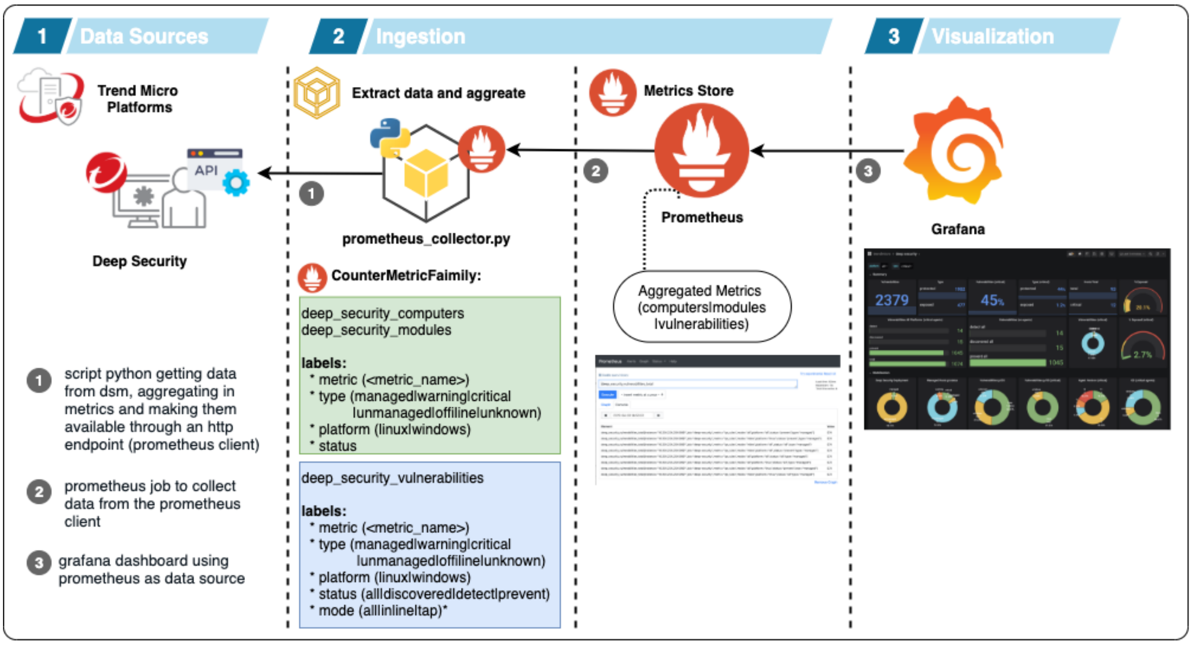
1. tmds11-exporter

This project creates a prometheus collector getting metrics from Deep Security DSM 11.0.

The data is aggregated in count and segmented in 3 groups:

- deep_security_computers
- deep_security_modules
- deep_security_vulnerabilities



CounterMetricFaimily:

deep_security_computers
deep_security_modules

labels:
- metric (<metric_name>)
- type (managed|warning|critical |unmanaged|offline|unknown)
- platform (linux|windows)
- status

deep_security_vulnerabilities

labels:
- metric (<metric_name>)
- type (managed|warning|critical |unmanaged|offline|unknown)
- platform (linux|windows)
- status (all|discovered|detect|prevent)
- mode (all|inline|tap)*

1 script python getting data from dsm, aggregating in metrics and making them available through an http endpoint (prometheus client)

2 prometheus job to collect data from the prometheus client

3 grafana dashboard using prometheus as data source

1.1 prometheus labels

- **deep_security_computers**
  - labels:
    - metric: *platform* | *os_type* | *agent_version* | *agent_version_major*
    - type: *managed* | *warning* | *critical* | *unmanaged* | *offline* | *unknown*
    - platform: *all* | *linux* | *windows*
    - status: *(os version)* | *(agent version)*
- **deep_security_modules**
  - labels:
    - metric: *am_status* | *wr_status* | *fw_status* | *ip_status* | *im_status* | *li_status*
    - type: *managed* | *warning* | *critical* | *unmanaged* | *offline* | *unknown*
    - platform: *all* | *linux* | *windows*
    - status: *on* | *off*
- **deep_security_vulnerabilities**

  - labels:
    - metric: *am_status* | *wr_status* | *fw_status* | *ip_status* | *im_status* | *li_status*
    - type: *managed* | *warning* | *critical* | *unmanaged* | *offline* | *unknown*
    - platform: *linux* | *windows*
    - status: *all* | *discovered* | *detect* | *prevent*

About vulnerabilities status:

- **discovered:** vulnerabilities that are detected but the IPS is not enabled on the host
- **detect:** vulnerabilities with IPS enabled but configured on detect mode
- **prevent:** vulnerabilities with IPS enabled and configured on prevent mode

1.2 environment:

- **python**: *python 2.7* (required)
- **prometheus**: *v2.16* (tested with this version)
- **grafana**: *6.6.2* (tested with this version)

1.3 configuration

1.3.1 create a virtual environment

1.3.1.1 virtualenv

```
virtualenv venv
source venv/bin/activate
pip install -r requirements.txt
```

1.3.1.2 pipenv

```
pipenv --two
pipenv shell
pip install -r requiriments.txt
```

1.3.2 running the app:

You should configure a config.py (**renaming config_sample.py to config.py** with your configuration), or using environment variables, to configure:

Variable	Description	Value	Value Type
DS_HOST	DSM Hostname	ip	fqdn
DS_PORT	DSM TCP Port	port Number	string
DS_USER	User Account (read only)	user_name - base64 encoded	string

Variable	Description	Value	Value Type
DS_PASS	User Password	user_pass - base64 encoded	string
DS_VERIFY_SSL	SSL Verify	True	False
DS_API_CHECK	Cache API data	time in minutes	integer
SERVER_PORT	Prometheus Collector TCP Port	port number	integer
LOG_LEVEL	Log level	INFO	WARN

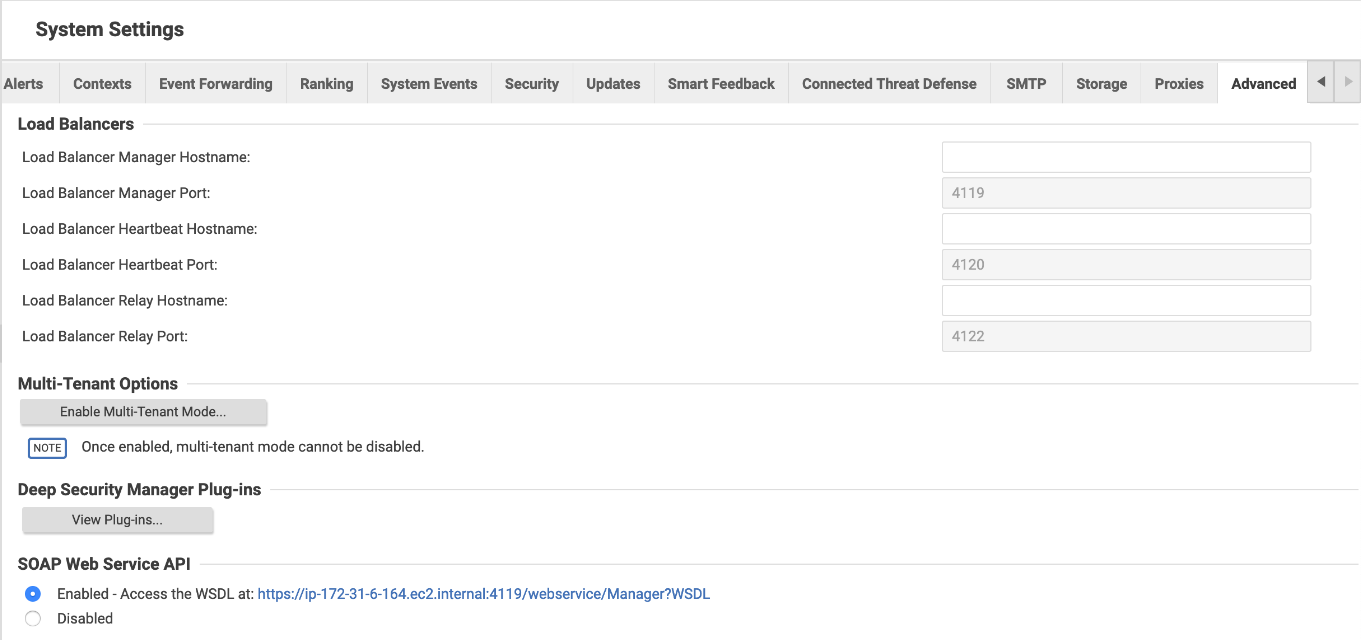
To encode your credentials:

```
echo -ne '<ds_user>'|base64
echo -ne '<ds_pass>'|base64
```

1.3.3 enabling soap web api

We need to enable SOAP Web API on the DSM. To do it, you should to to:

- *Administration* tab
-
  - System settings* pane
- *SOAP Web Service API* option - check '**enable**' radio button



System Settings

Load Balancers

Load Balancer Manager Hostname:

Load Balancer Manager Port: 4119

Load Balancer Heartbeat Hostname:

Load Balancer Heartbeat Port: 4120

Load Balancer Relay Hostname:

Load Balancer Relay Port: 4122

Multi-Tenant Options

NOTE Once enabled, multi-tenant mode cannot be disabled.

Deep Security Manager Plug-ins

SOAP Web Service API

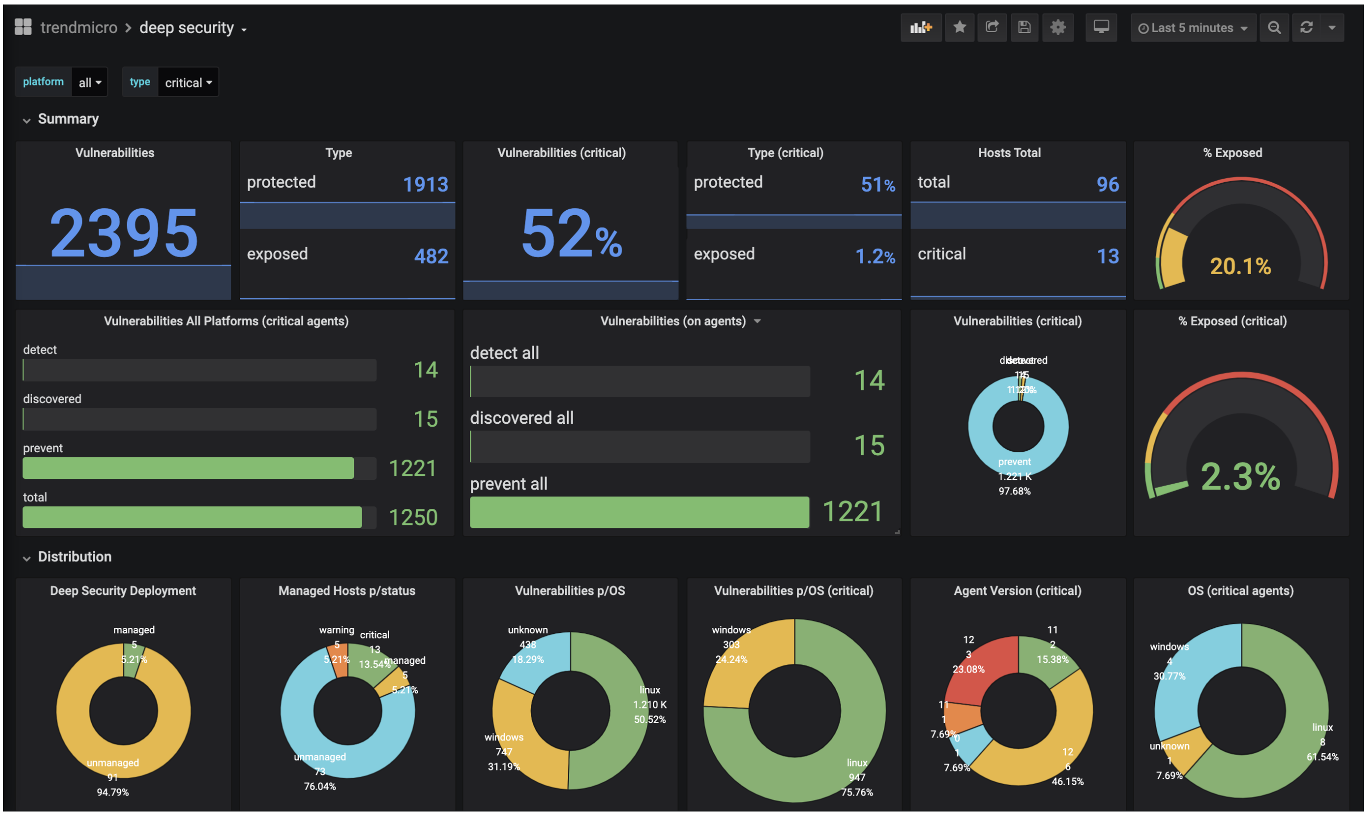
● Enabled - Access the WSDL at: https://ip-172-31-6-164.ec2.internal:4119/webservice/Manager?WSDL

○ Disabled

1.3.4 grafana dashboard:

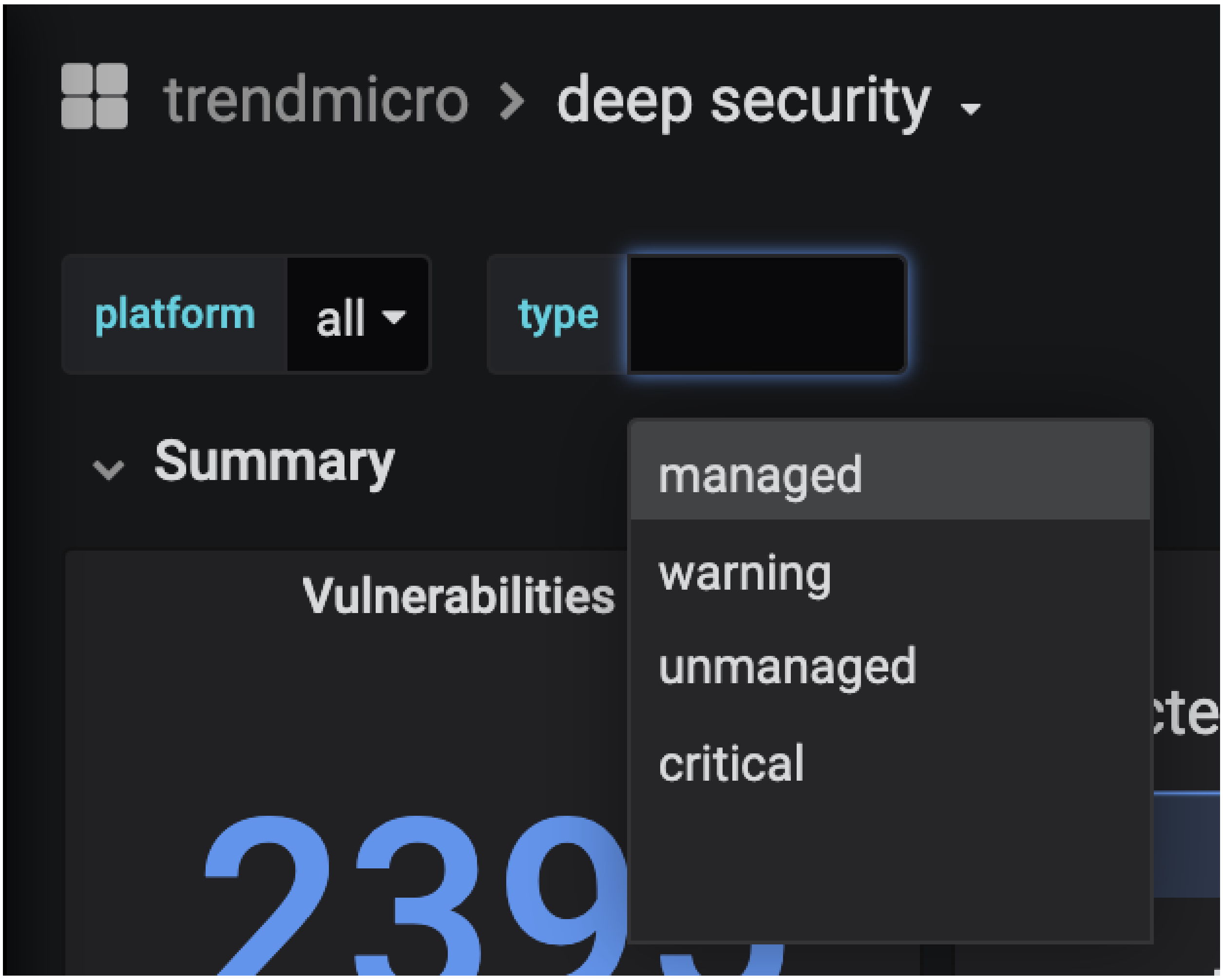
Import the dashboard located on: grafana/dash.json

- **dashboard:**



platform all type critical

- **filtering by type:**



platform all type

1.4 executing the collector with supervisor

1.4.1 creating a zip file with all the dependencies (on redhat)

```
easy_install pip
pip install virtualenv
virtualenv venv
source venv/bin/activate
pip install -r requirements.txt
```

checking supervisord:

```
./venv/bin/supervisord -version
```

create tar file

```
tar -zcvf tmds11-exporter.tar.gz tmds11-exporter
```

1.4.2.1 - copy and configure on /opt

```
scp tmds11-exporter.tar.gz <user_name>@<server_name>:/home/<user_name>
tar xzvf tmds11-exporter.tar.gz
sudo mv tmds11-exporter /opt/
```

checking if the supervisord version is 4.2.0:

```
/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/supervisord -version
```

checking with your collector config.py is configured:

```
cd /opt/tmds11-exporter/
/opt/tmds11-exporter/venv/bin/python2.7 src/collector.py
```

creating supervisor conf file:

```
sudo mkdir /etc/supervisor
sudo -s
/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/echo_supervisord_conf  >
```

```
/etc/supervisor/supervisord.conf
sudo cp supervisord.conf /etc/supervisor
```

creating the systemd daemon configuration:

```
sudo vi /usr/lib/systemd/system/supervisord.service
```

you will need to add this lines on that file:

```
[Unit]
 Description=supervisord - Supervisor process control system for UNIX
 Documentation=http://supervisord.org
 After=network.target
 [Service]
 User=ec2-user
 Type=forking
 ExecStart=/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/supervisord -c /etc/supervisor/supervisord.conf
 ExecReload=/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/supervisorctl reload
 ExecStop=/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/supervisorctl shutdown
 [Install]
 WantedBy=multi-user.target
```

Obs: change the user (ec2-user) to the user that you defined to run the script

start daemon:

```
sudo systemctl start supervisord
sudo systemctl enable supervisord
sudo systemctl status supervisord
```

1.4.2.2 - configure supervisord

```
sudo vi /etc/supervisor/supervisord.conf
```

add this lines on /etc/supervisor/supervisord.conf:

```
[program:tmds11-exporter]
command=/opt/tmds11-exporter/venv/bin/python2.7 -u src/collector.py
user=ec2-user
```

```
autostart=true
autorestart=true
directory=/opt/tmds11-exporter
stdout_logfile=/opt/tmds11-exporter/tmds11-exporter_output.txt
stderr_logfile=/opt/tmds11-exporter/tmds11-exporter_output_err.txt
redirect_stderr=true
```

Obs: change the user (ec2-user) to the user that you defined to run the script

reload the configiration:

```
systemctl reload supervisord
```

check status:

```
/opt/tmds11-exporter/venv/bin/python2.7 /opt/tmds11-exporter/venv/bin/supervisorctl
```

the output should be something like that:

```
tmds11-exporter                  RUNNING   pid 1770, uptime 0:00:39
```

test the collector:

```
curl localhost:9090
```

References:

DS 9-11 SDK Python project:

I've included inside this project the last version of the SDK for DS 9 to 11 versions. The code was developed by @marknca and is available here: https://github.com/deep-security/deep-security-py/.

Prometheus Collector:

I've based the collector structure on this example https://github.com/jakirpatel/prometheus-custom-collector/blob/master/code/collector.py developed by @jakirpatel.

Supervisor Configuration:

I've based the collector structure on this examples:

- Install and configuration: https://www.linuxhelp.com/how-to-install-and-configure-daemon-for-supervisor-on-centos7
- App configuration: https://medium.com/@jayden.chua/use-supervisor-to-run-your-python-tests-13e91171d6d3

Support:

This project is not part of any Trend Micro Deep Security project and it is not supported by Trend Micro.

Use and adapt to your needs and PRs are welcomed.