SECURITY+ V4 LAB SERIES

Lab 6: Vulnerability Checks with OpenVAS

Document Version: 2022-04-29

Material in this Lab Aligns to the Following	
CompTIA Security+ (SY0-601) Exam Objectives	1.6: Explain the security concerns associated with various types of vulnerabilities 1.7: Summarize the techniques used in security assessments
All-In-One CompTIA Security+ Sixth Edition ISBN-13: 978-1260464009 Chapters	6: Vulnerabilities 7: Security Assessments

Contents

Introduction

In this lab, you will use open-source tools that are available on the internet to check vulnerabilities.

Objective

In this lab, you will perform the following tasks:

- Conduct vulnerability check using OpenVAS

Lab Topology

Lab Settings

The information in the table below will be needed in order to complete the lab. The task sections below provide details on the use of this information.

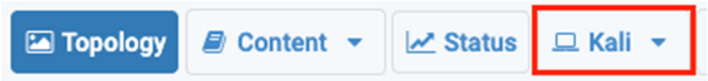
Virtual Machine	IP Address	Account (if needed)	Password (if needed)
Kali	`203.0.113.2`	`kali`	`kali`

1 Conduct a Vulnerability Check Using OpenVAS

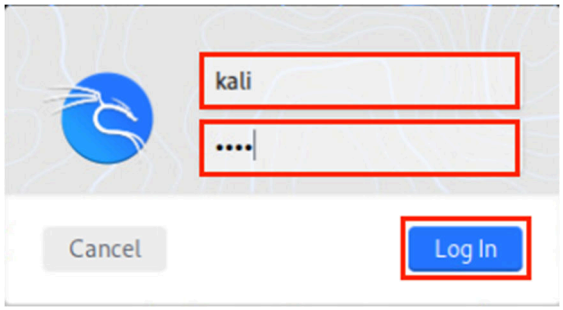
1.1 Start and Set the Services

In this section, you will start the services required to perform the lab activities.

1. Launch the **Kali** virtual machine to access the graphical login screen.



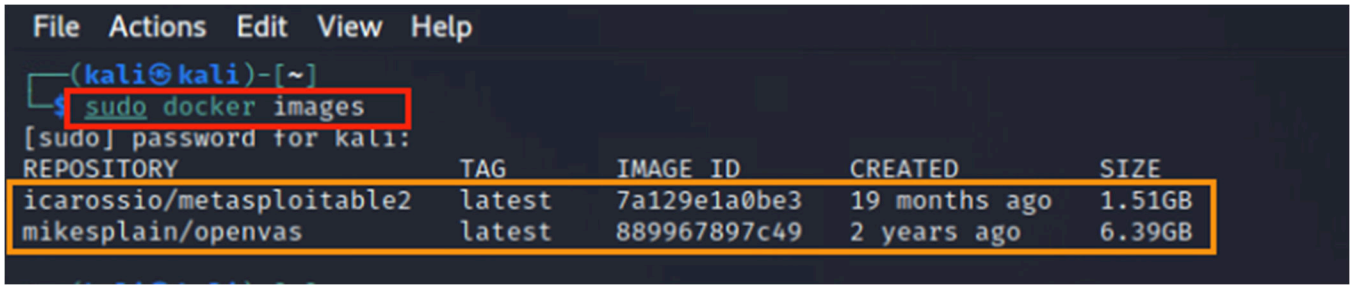
2. Log in as `kali` with the password `kali`.



3. Open a *Terminal* window by clicking on the **Terminal** icon, located in the left menu pane.

4. Enter the command below to check the available docker images. When prompted for the password, type `kali`. Verify that **icarossio/metasploitable2** and **mikesplain/openvas** exist.

```
kali@kali$ sudo docker images
```



5. Next, let's start and set the *metasploitable* service. In the *Terminal* window, type the following command to start the *metasploit2*. This command will forward every port to the host kali machine. Once executed, you will see a long string of numbers and letters. This will be the container-id of the next step.

```
kali@kali$ sudo docker run --rm -ditP icarossio/metasploitable2
```

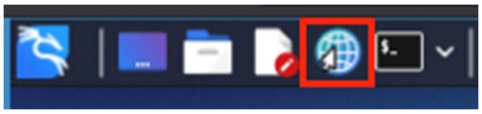
```
┌──(kali㉿kali)-[~]
└─$ sudo docker run --rm -ditP icarossio/metasploitable2
4c64bd80aac19cfefb325f4cfb0dbd8ec5888e6ac428da1a3dab2dbe0978f47e
```

6. We will now use the container-id to check the mapped ports between the kali machine and the container. Type the command below to check all mapped ports. Notice that we only used the first 4 characters/numbers from the container-id. All the mapped ports are within the 49153-49172 range.

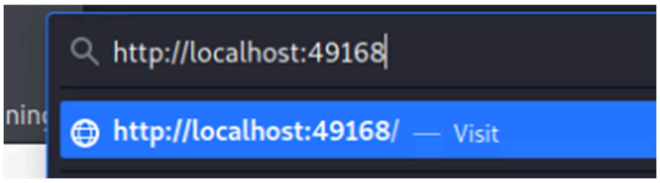
```
kali@kali$ sudo docker port 4c64
```

```
┌──(kali㉿kali)-[~]
└─$ sudo docker port 4c64
25/tcp → 0.0.0.0:49169
3632/tcp → 0.0.0.0:49158
80/tcp → 0.0.0.0:49168
111/tcp → 0.0.0.0:49167
2121/tcp → 0.0.0.0:49160
445/tcp → 0.0.0.0:49165
6667/tcp → 0.0.0.0:49154
1524/tcp → 0.0.0.0:49161
21/tcp → 0.0.0.0:49172
513/tcp → 0.0.0.0:49163
5432/tcp → 0.0.0.0:49157
5900/tcp → 0.0.0.0:49156
22/tcp → 0.0.0.0:49171
512/tcp → 0.0.0.0:49164
3306/tcp → 0.0.0.0:49159
514/tcp → 0.0.0.0:49162
6000/tcp → 0.0.0.0:49155
8009/tcp → 0.0.0.0:49153
139/tcp → 0.0.0.0:49166
23/tcp → 0.0.0.0:49170
```

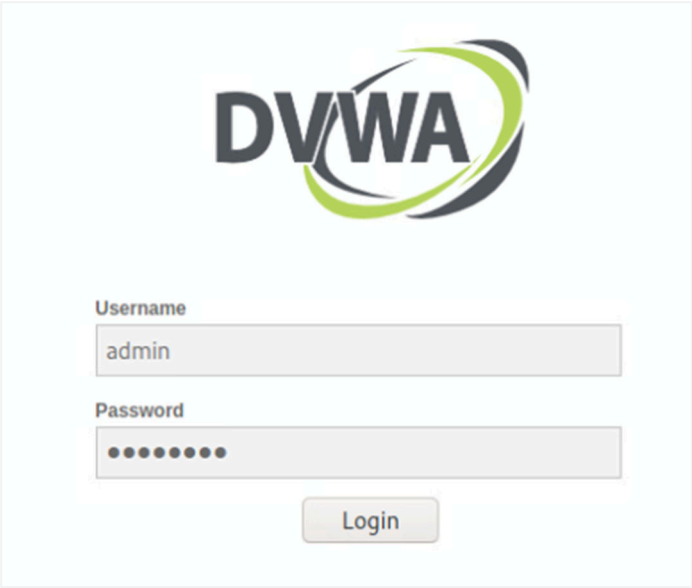
7. With the *metasploitable2* running, let's click the **browser icon** to start the browser.



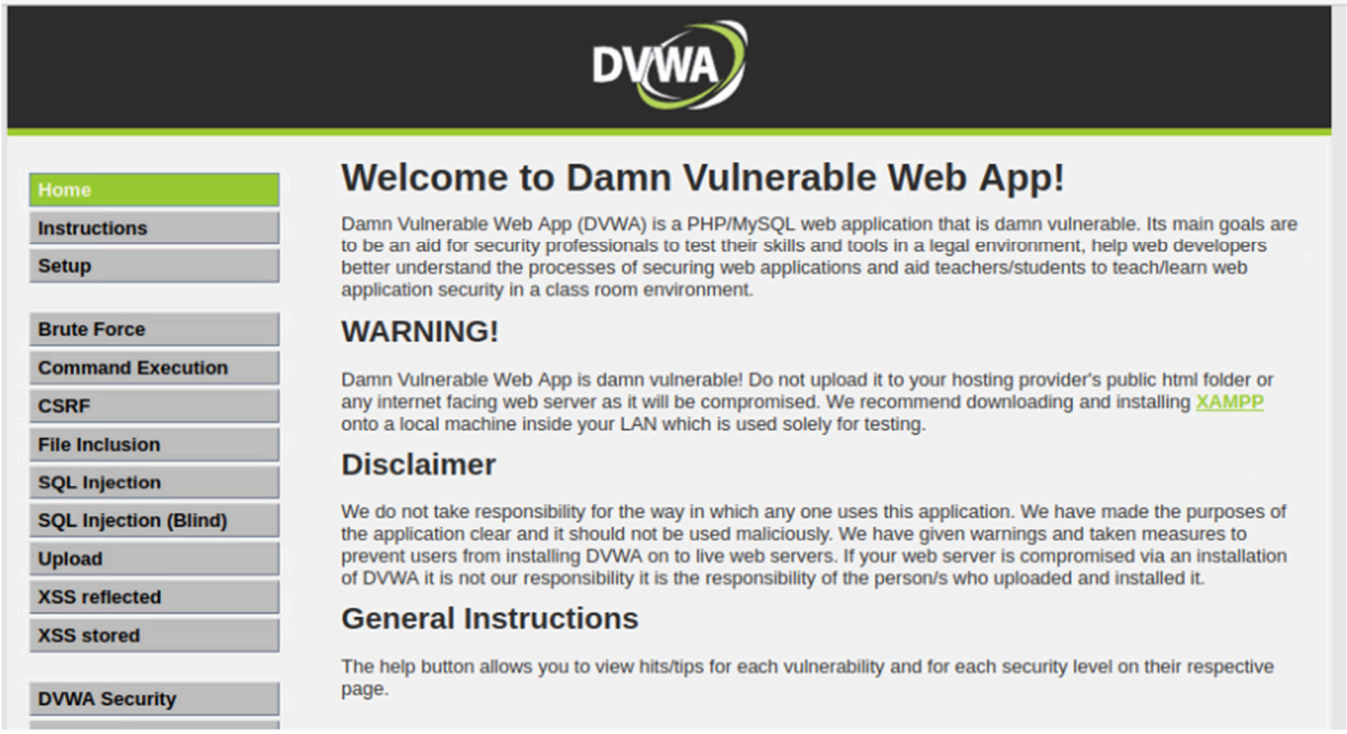
8. In the browser window, click on the address bar, and type the address of `http://localhost:49168`. Press **Enter** and the *metasploitable2* will open.



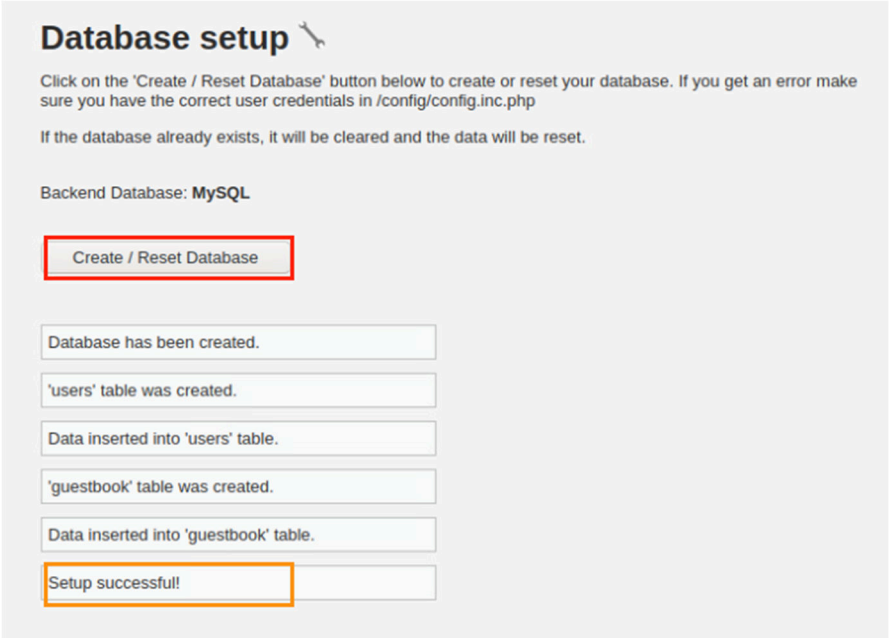
9. On the new page, we will check the database status of the *DVWA* machine. First, click on the ***DVWA*** link. When the following screen shows up, type **`admin`** as the username and **`password`** as the password. Then, click the **Login** button to log in. When prompted to save the password, click **Never**.



10. If you see the following welcome screen, it means the service is up and running.



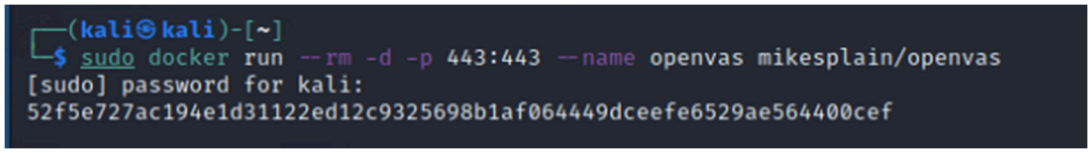
11. If, for some reason, the service failed to initiate, click the **Setup** button. Then, click **Create/Reset Database**. When finished, you will see the page prompt saying, *Setup successful!*



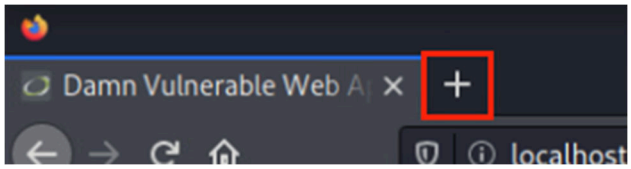
1.2 Start the OpenVAS Scanner

1. Switch back to the *Terminal* window.
2. Type the following command; if prompted for a password, type `kali`.

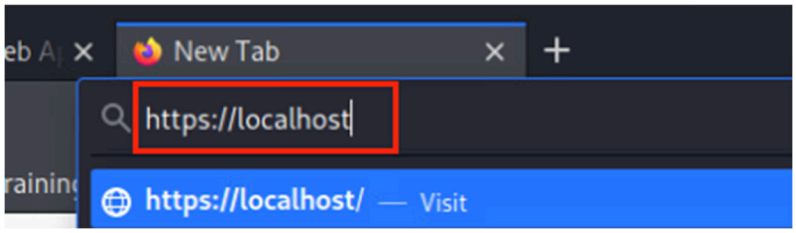
```
kali@kali$ sudo docker run --rm -d -p 443:443 --name openvas mikesplain/openvas
```



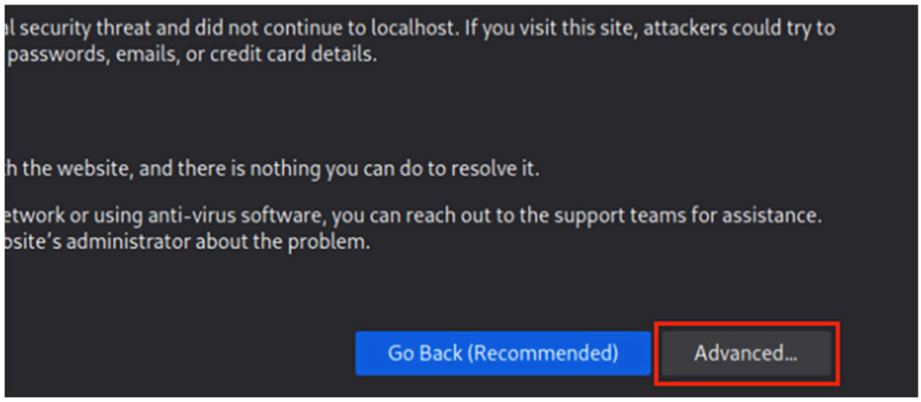
3. Switch back to the browser window; we will check the *OpenVAS* service status.
4. Click the **+** sign to start a new tab in the browser.



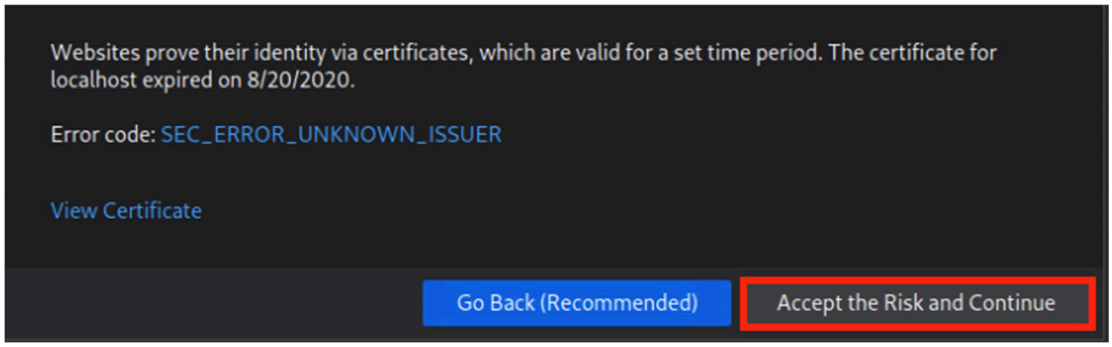
5. In the address bar, type `https://localhost`.



6. On the opened page, click the **Advanced…** button.

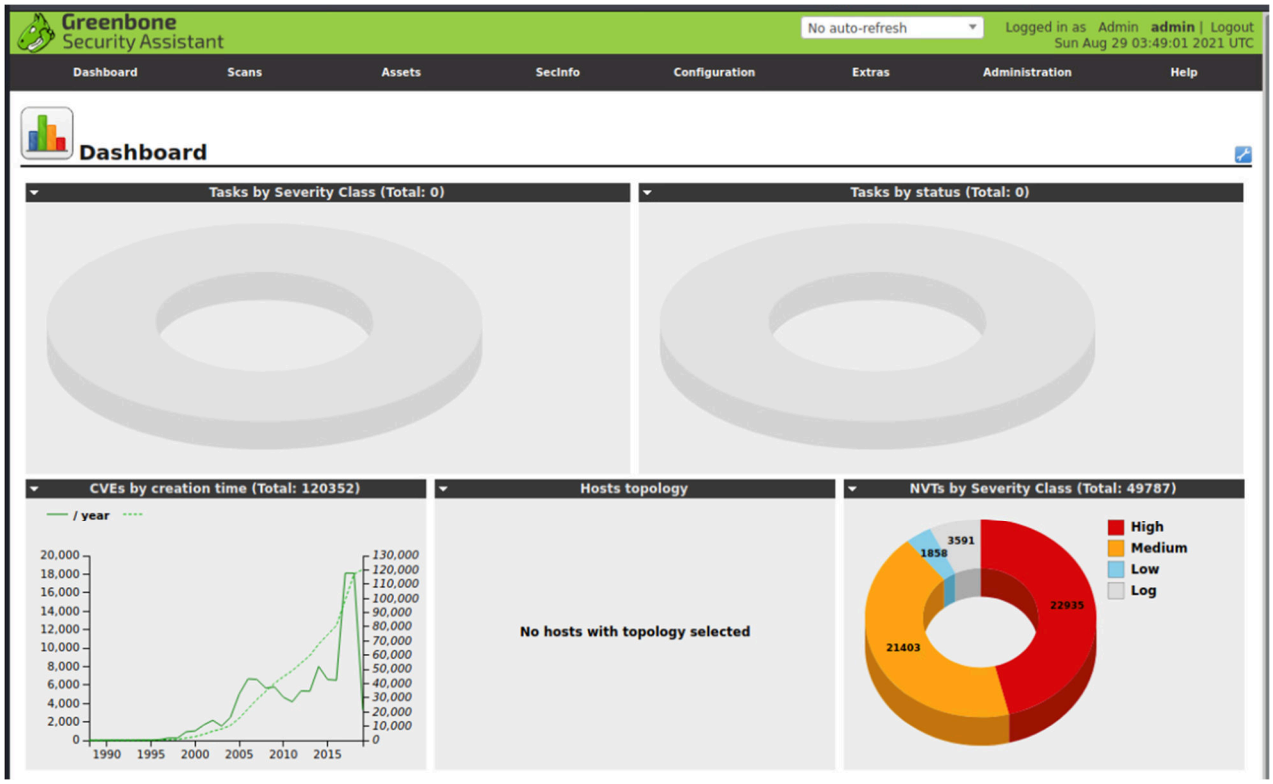


7. A new area will appear; click **Accept the Risk and Continue.**



8. A login page will appear once you click the button. Type `admin` as the username, `admin` as the password. Then, click the **Login** button. When prompted to save the password, click **Don't Save.**

9. You will view the *OpenVAS (Greenbone Security Assistant) Dashboard*.

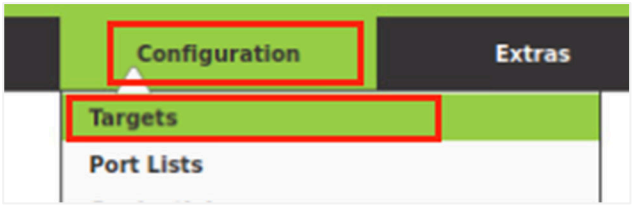


10. Leave the window open, and continue to the next section.

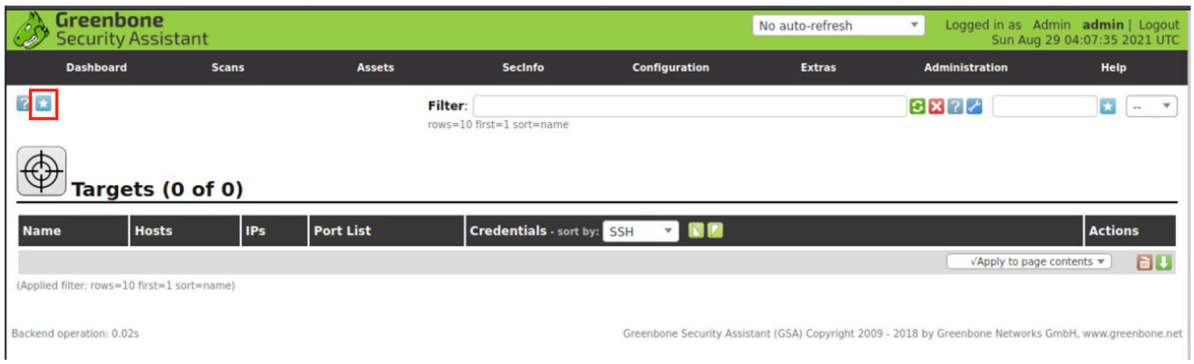
2 Scan the Vulnerability Using OpenVAS

2.1 Set the Target

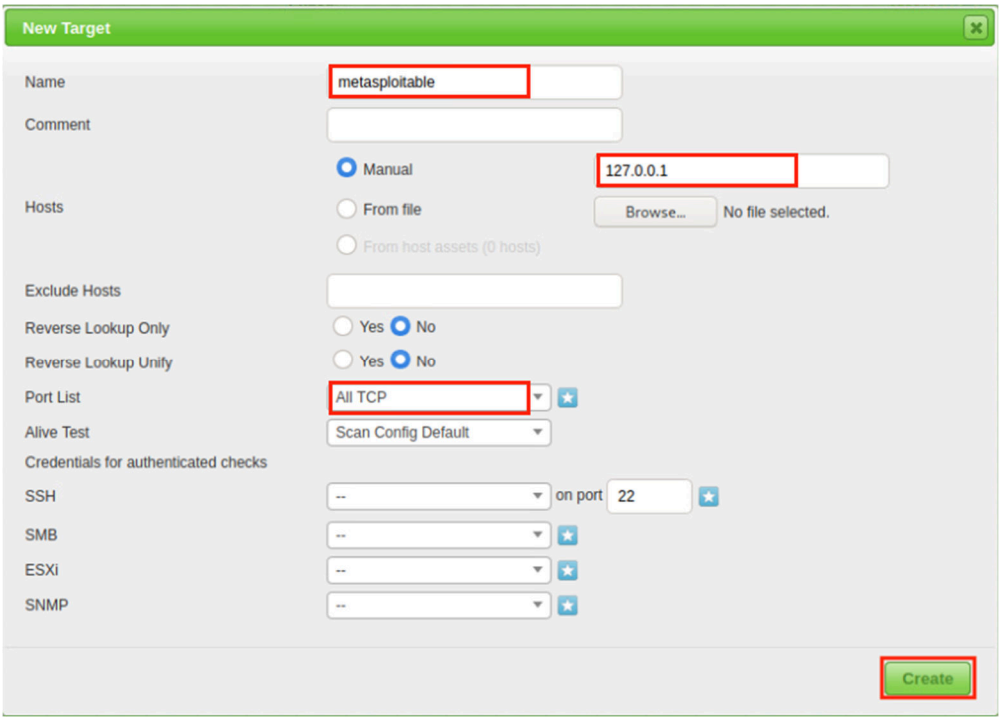
1. In the *OpenVAS* dashboard window, click the **Configuration**, then **Targets.**



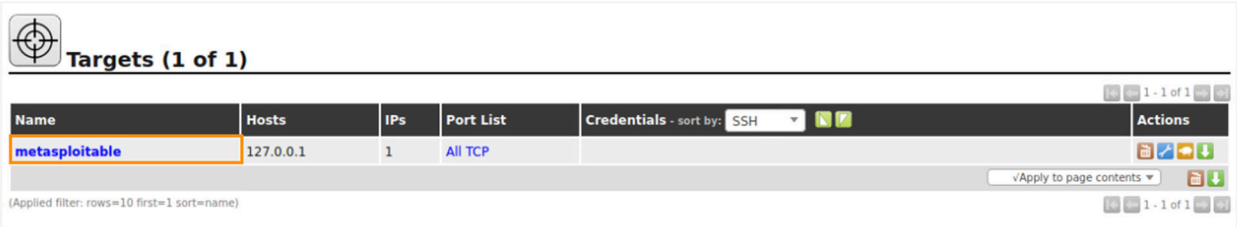
2. On the *Targets* page, click the upper-left **star button** to add a target.



3. In the *New Target* window. Type `metasploitable` as the *Name*, add IP address `127.0.0.1` as the target address, and change the *Port List* to **All TCP**. Click the **Create** button once finished. Because docker is forwarding all the ports to the localhost, we are setting the localhost as the target.

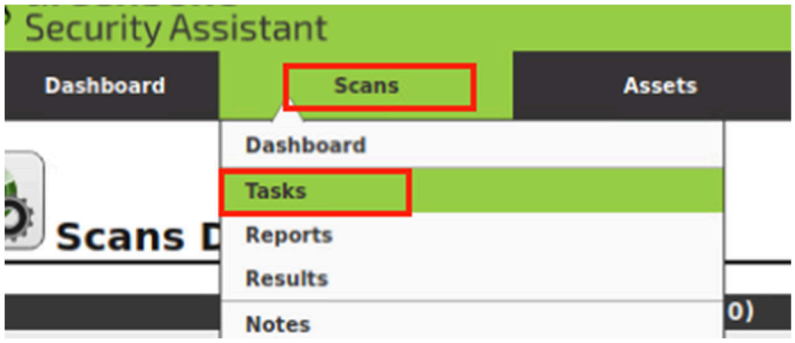


4. You will see the target successfully created after clicking the **Create** button in the last step.

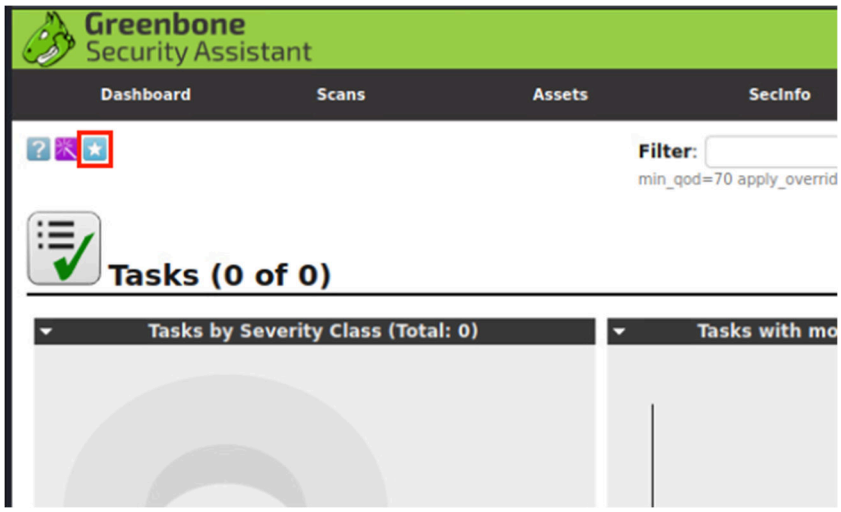


2.2 Add a Task

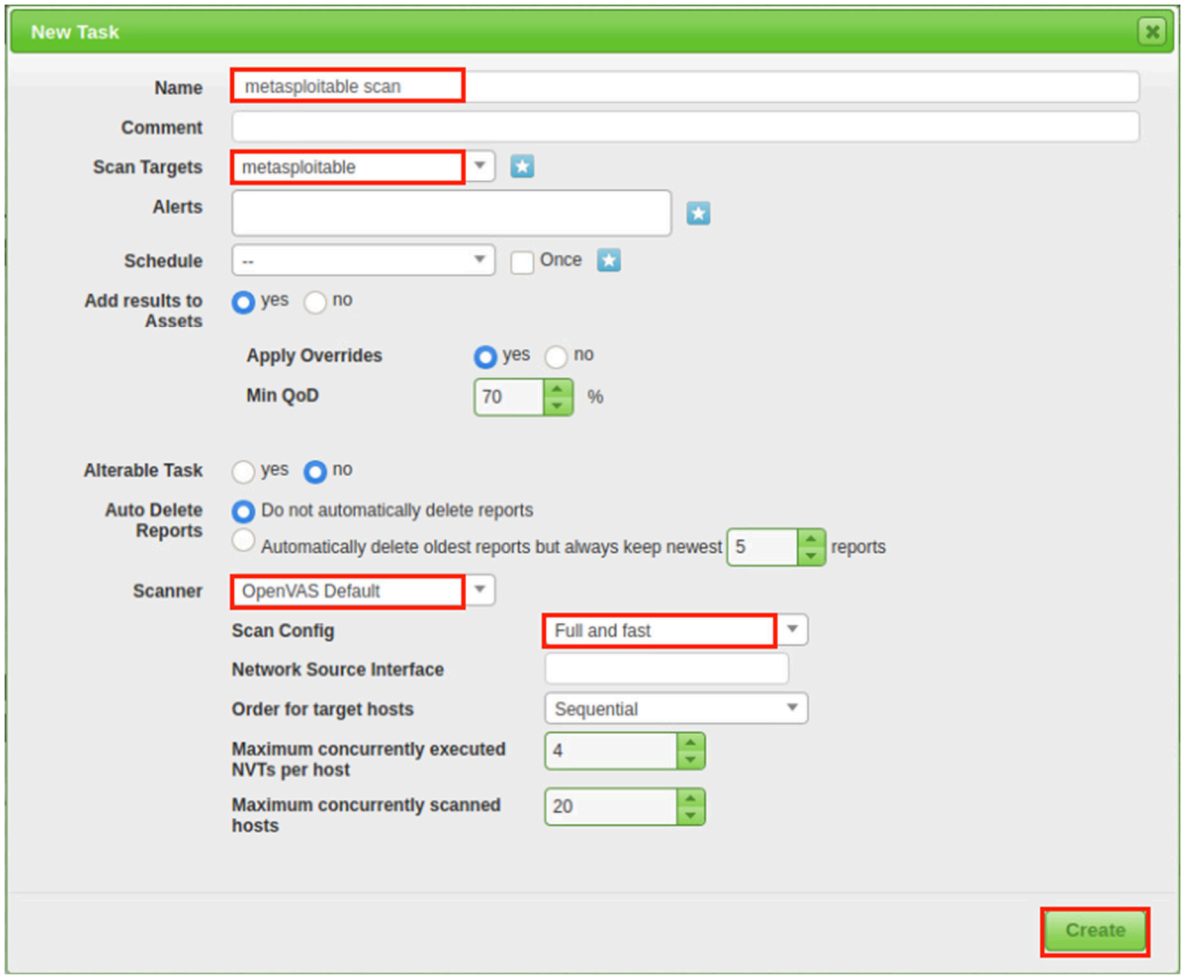
1. Next, we will create a task to scan the target. Select **Scans** > **Tasks.**



2. Currently, there is no task. Click the **star** button in the upper-left corner to add a new task.

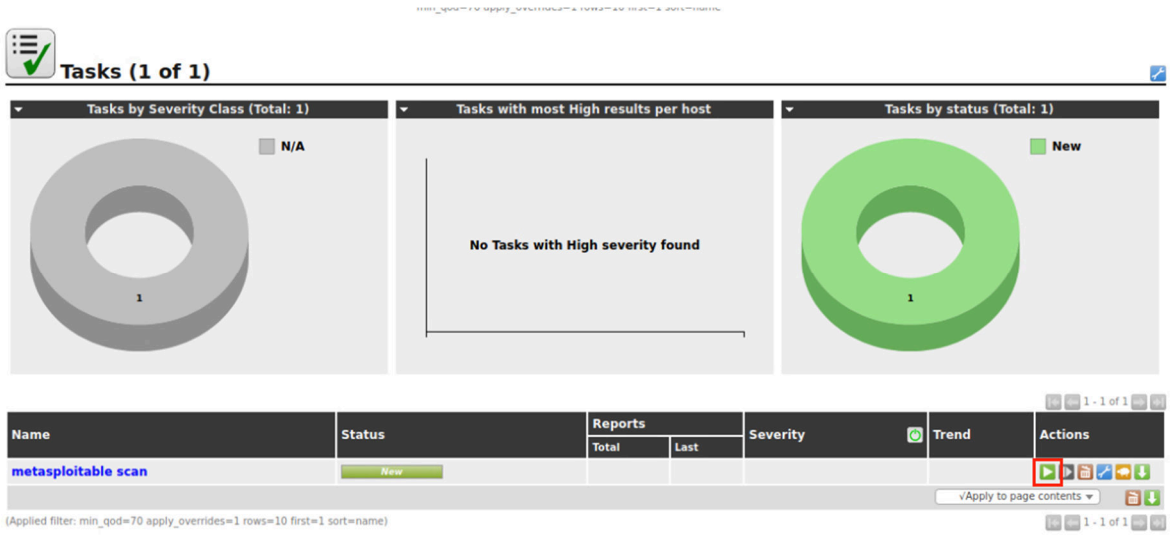


3. In the *New Task* window, type the *Name* as `metasploitable scan`, select the **metasploitable** as *Scan Target*, then select **OpenVAS Default** as the *Scanner* and **Full and fast** as the *Scan Config*. Click **Create** when finished.

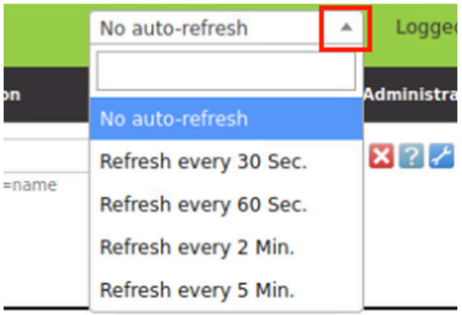


2.3 Scan Vulnerabilities and Check Reports

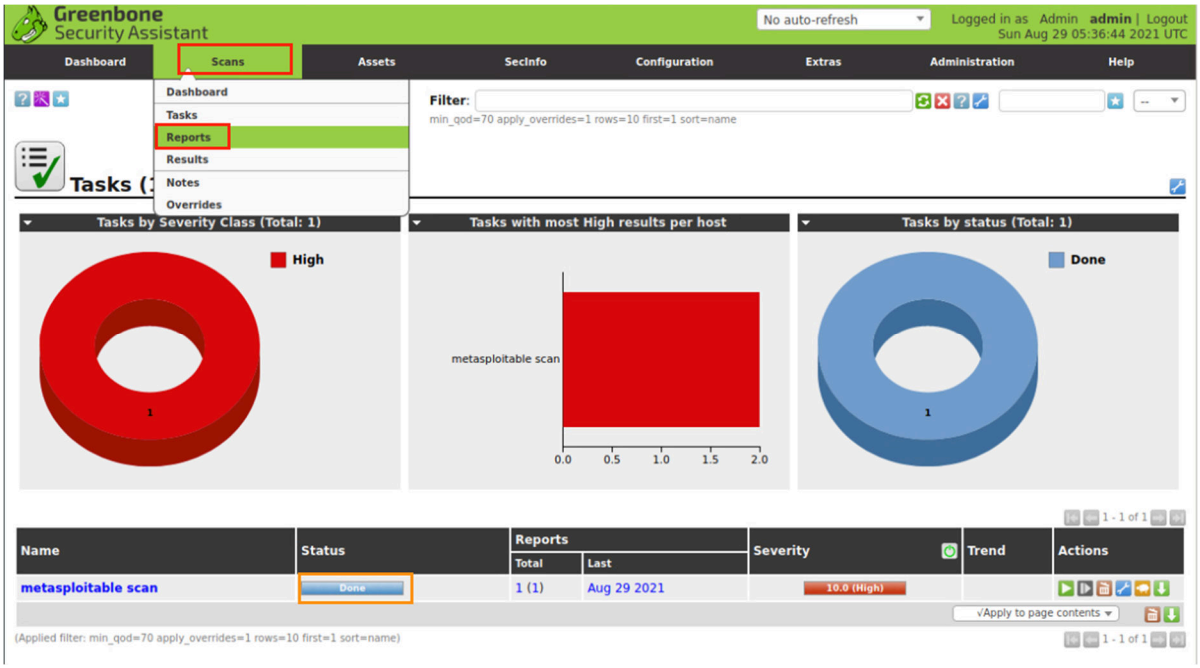
1. Now you should see the newly created scan task appear in the *Tasks* window. To the lower right-hand corner, click the **Start** button to start the scan. The scan process may take 10 - 30 minutes. So, please be patient.



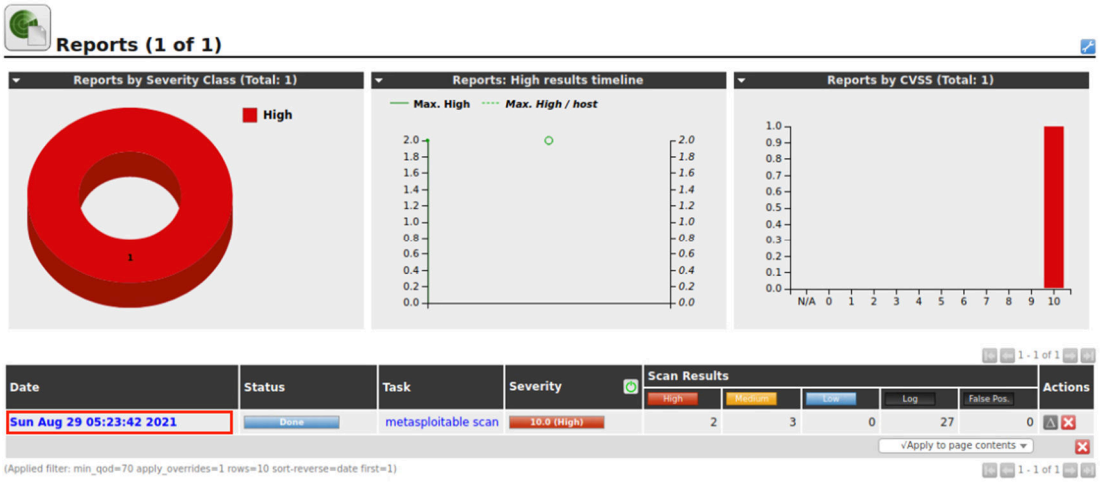
2. To the upper-right corner, click the **arrow** in the *No auto-refresh* field to change the auto-refresh rate.



3. When the scan is complete, under the **Scans** menu, click the **Reports** button.



4. On the **Reports** page, click the data of your report to view and explore the vulnerabilities.



5. On the *Reports* page, you can click any of the entries in the *Vulnerability* column to check the detail.

Report: Results (5 of 38)

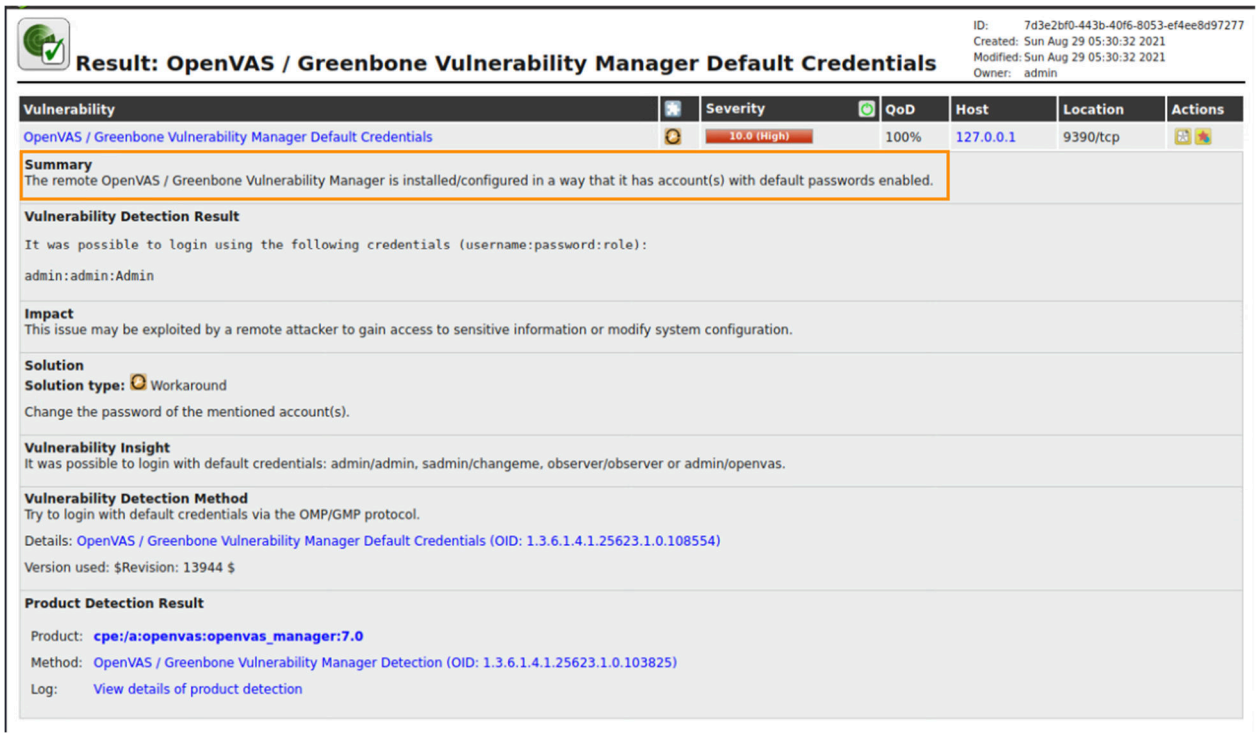
ID: 5c48d9e4-7239-4ba7-8e94-b1fdb4e3c93b
Modified: Sun Aug 29 05:35:36 2021
Created: Sun Aug 29 05:24:00 2021
Owner: admin

1 - 5 of 5

Vulnerability	Severity	QoD	Host	Location	Actions
OpenVAS / Greenbone Vulnerability Manager Default Credentials	10.0 (High)	100%	127.0.0.1 (localhost)	9390/tcp	
Redis Server No Password	7.5 (High)	100%	127.0.0.1 (localhost)	6379/tcp	
SSL/TLS: Certificate Expired	5.0 (Medium)	99%	127.0.0.1 (localhost)	443/tcp	
SSL/TLS: Certificate Expired	5.0 (Medium)	99%	127.0.0.1 (localhost)	9390/tcp	
Check if Mailserver answer to VRFY and EXPN requests	5.0 (Medium)	99%	127.0.0.1 (localhost)	25/tcp	

(Applied filter:autofp=0 apply_overrides=1 notes=1 overrides=1 result_hosts_only=1 first=1 rows=100 sort-reverse=severity levels=hml min_qod=70)

1 - 5 of 5



Result: OpenVAS / Greenbone Vulnerability Manager Default Credentials

ID: 7d3e2bf0-443b-40f6-8053-ef4ee8d97277
Created: Sun Aug 29 05:30:32 2021
Modified: Sun Aug 29 05:30:32 2021
Owner: admin

Vulnerability	Severity	QoD	Host	Location	Actions
OpenVAS / Greenbone Vulnerability Manager Default Credentials	10.0 (High)	100%	127.0.0.1	9390/tcp	

Summary
The remote OpenVAS / Greenbone Vulnerability Manager is installed/configured in a way that it has account(s) with default passwords enabled.

Vulnerability Detection Result

```
It was possible to login using the following credentials (username:password:role):

admin:admin:Admin
```

Impact
This issue may be exploited by a remote attacker to gain access to sensitive information or modify system configuration.

Solution
Solution type: Workaround

Change the password of the mentioned account(s).

Vulnerability Insight
It was possible to login with default credentials: admin/admin, sadmin/changeme, observer/observer or admin/openvas.

Vulnerability Detection Method
Try to login with default credentials via the OMP/GMP protocol.

Details: OpenVAS / Greenbone Vulnerability Manager Default Credentials (OID: 1.3.6.1.4.1.25623.1.0.108554)

Version used: $Revision: 13944 $

Product Detection Result

Product: **cpe:/a:openvas:openvas_manager:7.0**
Method: OpenVAS / Greenbone Vulnerability Manager Detection (OID: 1.3.6.1.4.1.25623.1.0.103825)
Log: View details of product detection

6. The lab is now complete; you may end the reservation.