

ETHICAL HACKING COURSE

MINOR PROJECT

NMAP SCANNING AND FINDING
VULNERABILITIES

SUBMITTED BY: ANWESHA GUPTA

SUBMITTED TO: MOHSIN QURESH

SCOPES

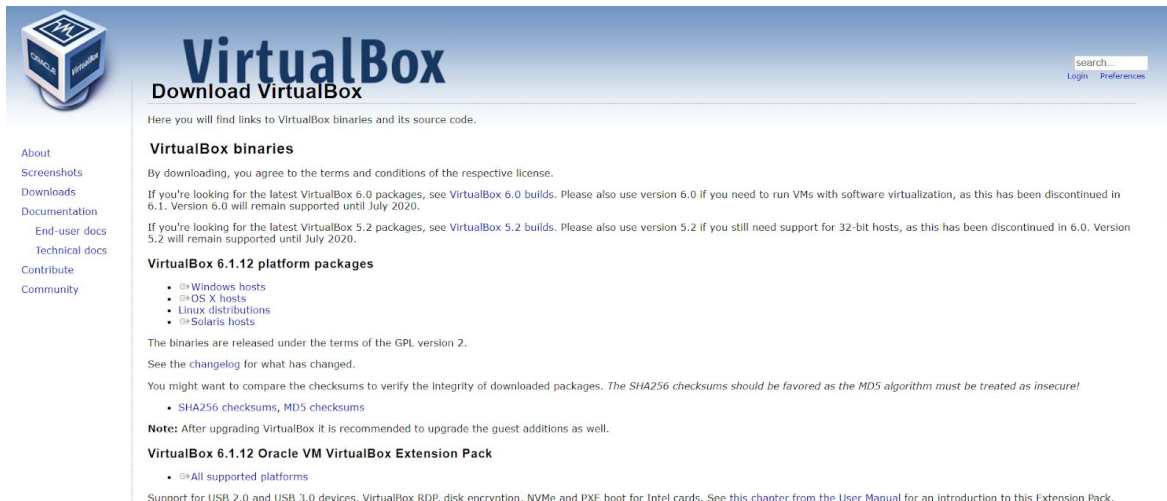
- Setting Up the Labs
- N-map Scanning
- Checking the Vulnerability and Exploitation

SETTING UP THE LAB

- For any penetration testing first of all we need to set a Lab
- The lab can be set in two modes.
They are:
 - (a) Live mode
 - (b) Virtualization mode
- In the case of the live mode the testing can be done by using the OS in live.
- In the Virtualization mode we have to install Virtual Box in the host machine. The Download Link is given below.
- Download link is:
<https://download.virtualbox.org/virtualbox/6.1.12/VirtualBox-6.1.12-139181-Win.exe>

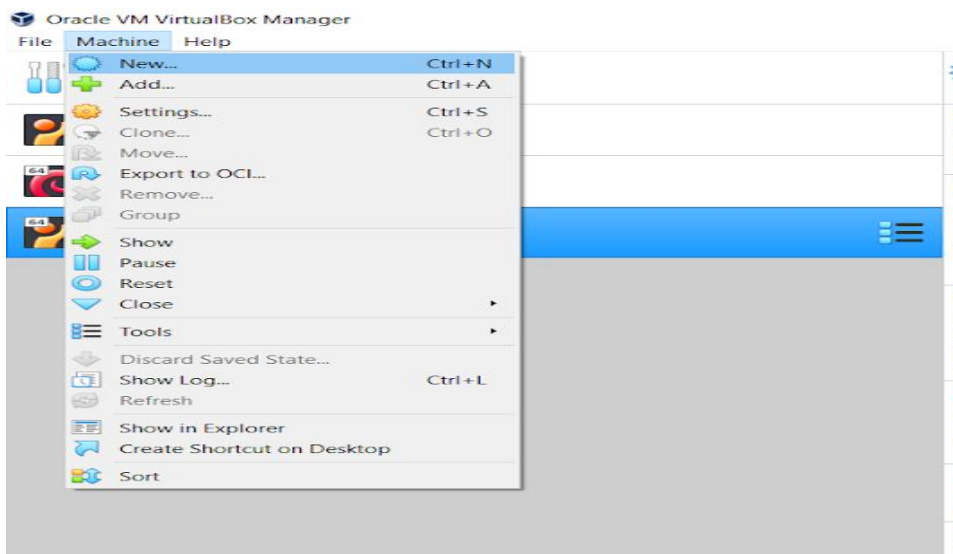
STEPS TO SETUP LAB

STEP 1: DOWNLOAD VIRTUAL BOX

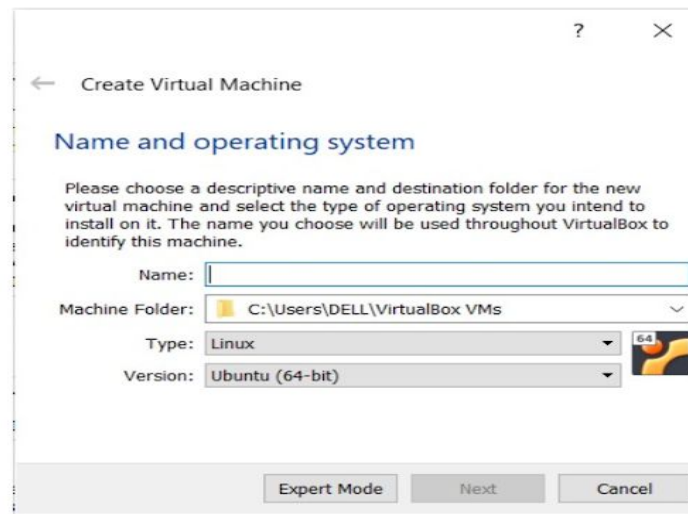


STEP 2: OPEN VIRTUAL BOX

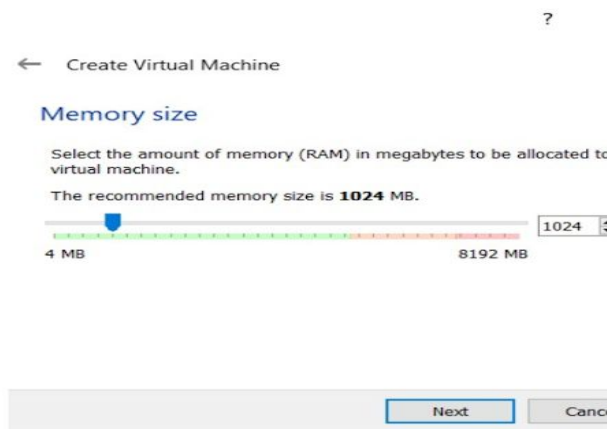
STEP 3: CLICK ON MACHINE OPTION AND THEN SELECT NEW



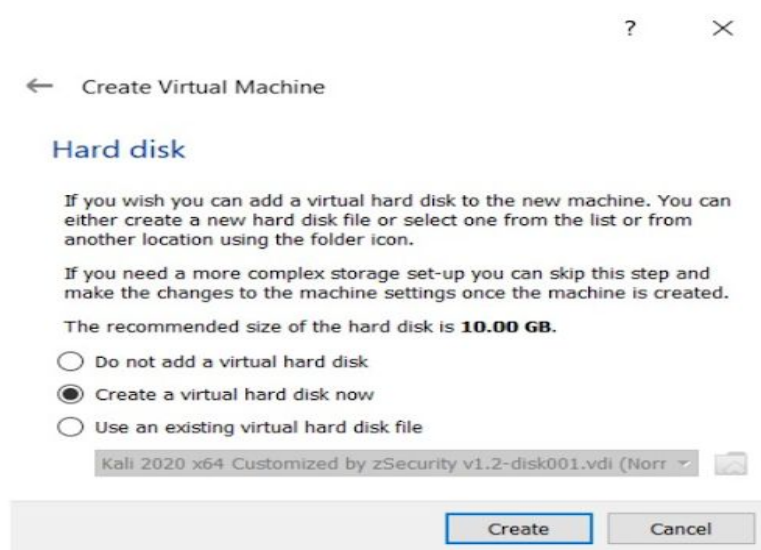
STEP 4: Fill the name of lab . Then Select Linux in type and Ubuntu(64-Bit) in version and click on next.



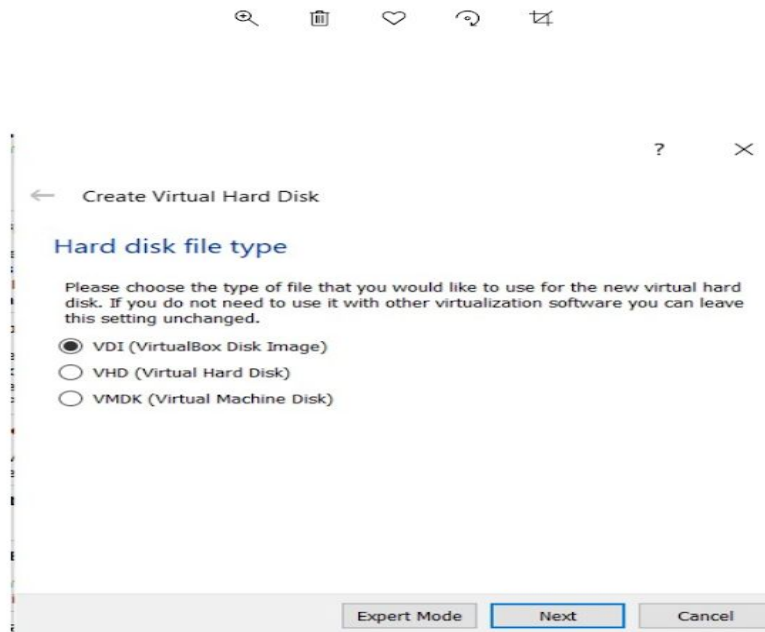
STEP 5: Allocate the memory (RAM) not less than 2GB and click Next.



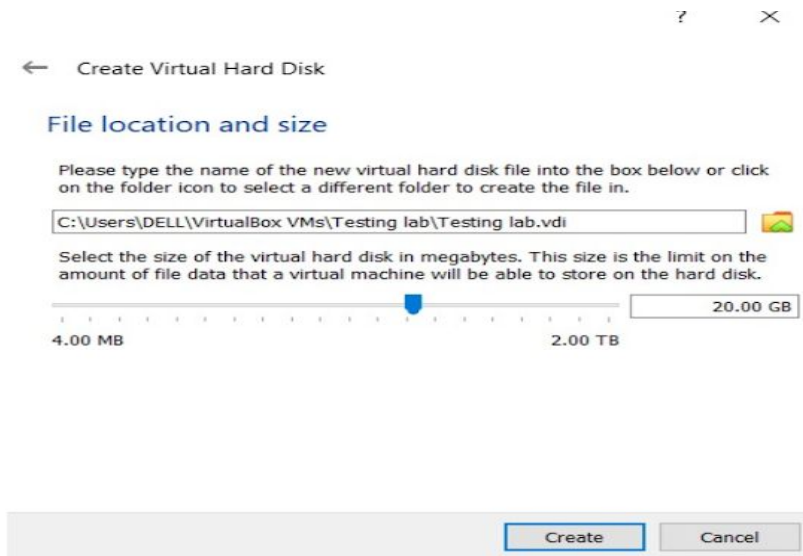
STEP 6: Then Select on create a virtual hard disk now and Click on Create.



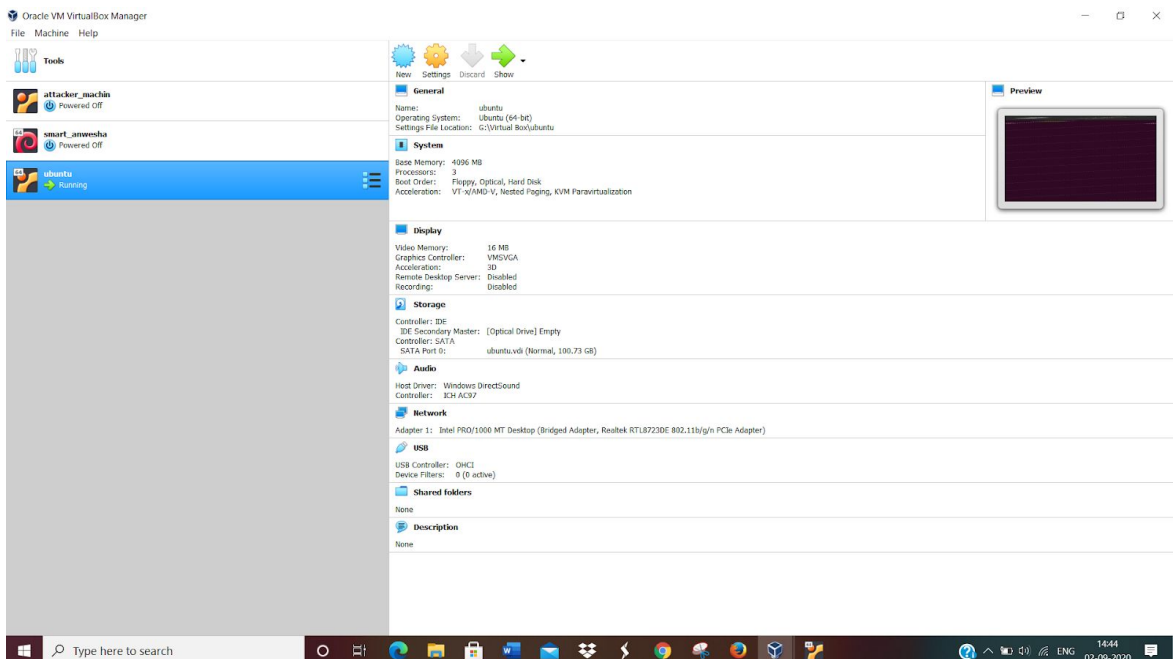
STEP 7: Click on VDI (Virtual Disk Image) and click next



STEP 8: Then allocation of Size upto 20GB and Click On create.



STEP 9: Hence Lab is created, now add ISO file in that and configure it.



NMAP SCANNING

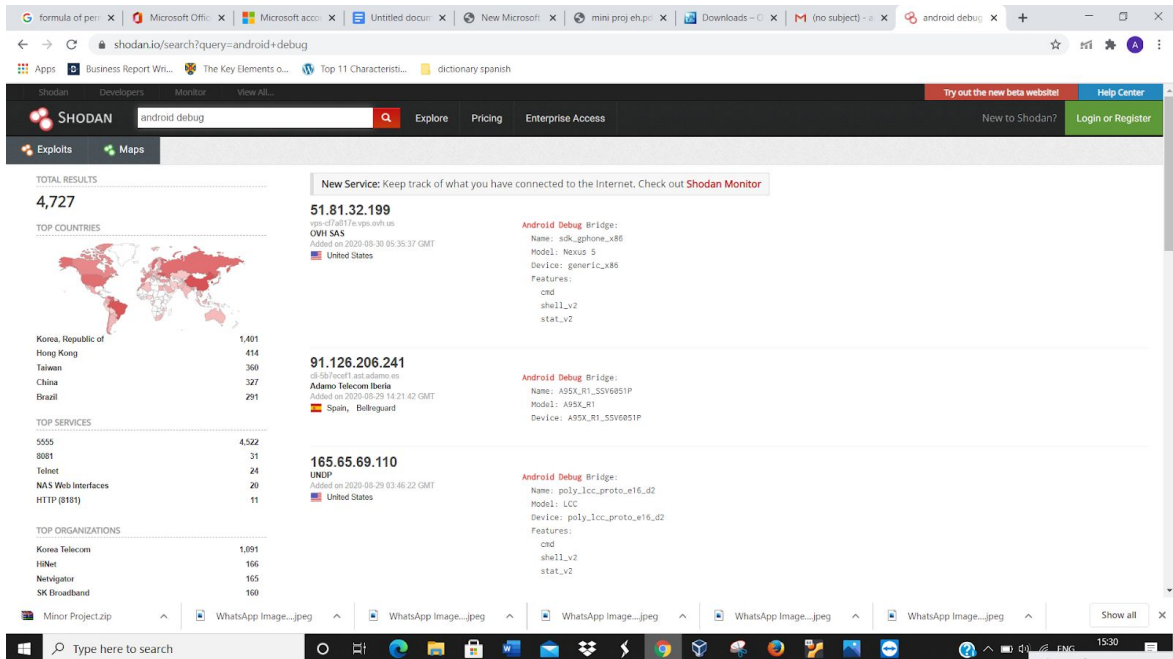
STEP 1: Open the ubuntu setup from virtual box and then open its terminal.

STEP 2: To get root access use the command “sudo passwd” and then type your login password there. Then set new password for the root access . Then use the command “su” and then type the password set above to get the root access.

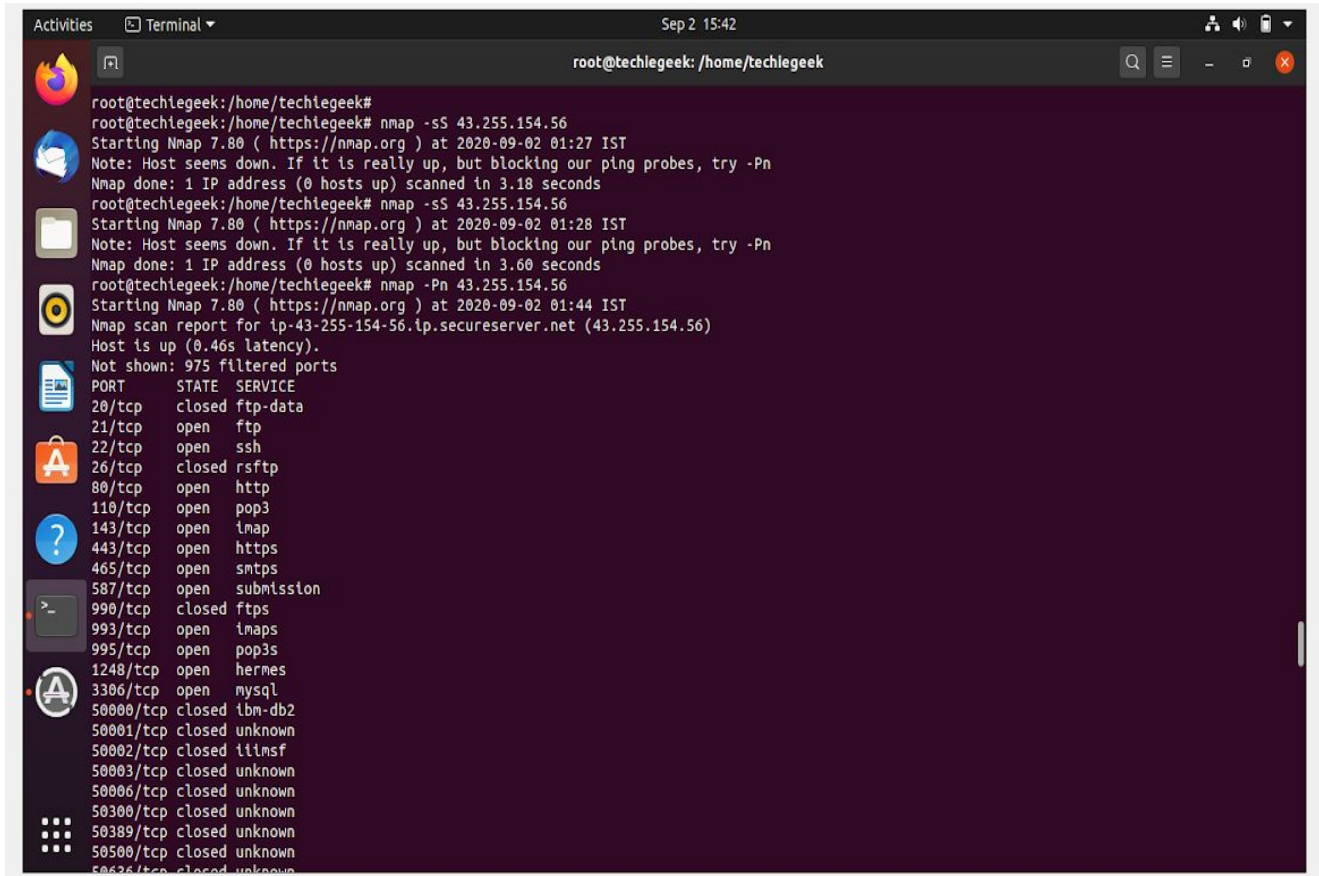
STEP 3: Update the machine using “apt update”.

STEP 4: Then install nmap using command “apt install nmap”

STEP 5: Then we have to find a suitable IP address for scanning and then finding the vulnerabilities.



STEP 6: Now for scanning use the command “ nmap -sS 43.255.154.56 “ .

A terminal window titled 'root@techleegEEK: /home/techleegEEK' showing the execution of nmap commands. The first two commands use '-sS' (SYN scan) and report the host as down. The third command uses '-Pn' (ping scan) and reports the host as up. The final output is a detailed port scan report for 43.255.154.56.

```
root@techleegEEK:/home/techleegEEK# nmap -sS 43.255.154.56
Starting Nmap 7.80 ( https://nmap.org ) at 2020-09-02 01:27 IST
Note: Host seems down. If it is really up, but blocking our ping probes, try -Pn
Nmap done: 1 IP address (0 hosts up) scanned in 3.18 seconds
root@techleegEEK:/home/techleegEEK# nmap -sS 43.255.154.56
Starting Nmap 7.80 ( https://nmap.org ) at 2020-09-02 01:28 IST
Note: Host seems down. If it is really up, but blocking our ping probes, try -Pn
Nmap done: 1 IP address (0 hosts up) scanned in 3.60 seconds
root@techleegEEK:/home/techleegEEK# nmap -Pn 43.255.154.56
Starting Nmap 7.80 ( https://nmap.org ) at 2020-09-02 01:44 IST
Nmap scan report for ip-43-255-154-56.ip.secureserver.net (43.255.154.56)
Host is up (0.46s latency).
Not shown: 975 filtered ports
PORT      STATE SERVICE
20/tcp    closed ftp-data
21/tcp    open  ftp
22/tcp    open  ssh
26/tcp    closed rsftp
80/tcp    open  http
110/tcp   open  pop3
143/tcp   open  imap
443/tcp   open  https
465/tcp   open  smtps
587/tcp   open  submission
990/tcp   closed ftps
993/tcp   open  imaps
995/tcp   open  pop3s
1248/tcp  open  hermes
3306/tcp  open  mysql
50000/tcp closed lbm-db2
50001/tcp closed unknown
50002/tcp closed iimsf
50003/tcp closed unknown
50006/tcp closed unknown
50300/tcp closed unknown
50389/tcp closed unknown
50500/tcp closed unknown
50626/tcp closed unknown
```

STEP 7: To get the version of the ports that are open use the command “ nmap -sS 43.255.154.56 “.

PORT	STATE	VERSION
21/tcp	open	Pure -FTPd h
22 /tcp	open	ssh OpenSSH 5.3
80/tcp	open	http Apache httpd
110/tcp	open	pop3 Dovecot pop3d

STEP 8: Now for checking vulnerabilities go to website “ <https://www.cvedetails.com/> “. Type the version and then search.

I have checked of port 110/tcp pop3 Dovecot pop3d

The screenshot shows a web browser window with the CVE Details website. The page title is "CVE Details - The ultimate security vulnerability datasource". The search bar contains "Dovecot : Security vulnerabilities". The results table lists several CVEs with their IDs, scores, and descriptions. The table has columns: #, CVE ID, CVE ID, # of Exploits, Vulnerability Type(s), Publish Date, Update Date, Score, Gained Access Level, Access, Complexity, Authentication, Conf., Integ., Avail.

#	CVE ID	CVE ID	# of Exploits	Vulnerability Type(s)	Publish Date	Update Date	Score	Gained Access Level	Access	Complexity	Authentication	Conf.	Integ.	Avail.
1	CVE-2019-11500	787		Exec Code	2019-08-29	2019-09-06	7.5	None	Remote	Low	Not required	Partial	Partial	Partial
In Dovecot before 2.2.36.4 and 2.3.x before 2.3.7.2 (and Pigeonhole before 0.5.7.2), protocol processing can fail for quoted strings. This occurs because "0" characters are mishandled, and can lead to out-of-bounds writes and remote code execution.														
2	CVE-2019-11499	20			2019-05-08	2019-06-13	5.0	None	Remote	Low	Not required	None	None	Partial
In the IMAP Server in Dovecot 2.3.3 through 2.3.5.2, the submission-login component crashes if AUTH PLAIN is attempted over a TLS secured channel with an unacceptable authentication message.														
3	CVE-2019-11494	20			2019-05-08	2019-06-13	5.0	None	Remote	Low	Not required	None	None	Partial
In the IMAP Server in Dovecot 2.3.3 through 2.3.5.2, the submission-login service crashes when the client disconnects prematurely during the AUTH command.														
4	CVE-2019-10691	287			2019-04-24	2019-07-12	5.0	None	Remote	Low	Not required	None	None	Partial
The JSON encoder in Dovecot before 2.3.5.2 allows attackers to repeatedly crash the authentication service by attempting to authenticate with an invalid UTF-8 sequence as the username.														
5	CVE-2019-7524	119		Overflow	2019-03-28	2019-06-13	7.2	None	Local	Low	Not required	Complete	Complete	Complete
In Dovecot before 2.2.36.3 and 2.3.x before 2.3.5.1, a local attacker can cause a buffer overflow in the indexer-worker process, which can be used to elevate to root. This occurs because of missing checks in the fts and pop3-uidl components.														
6	CVE-2019-3814	295			2019-03-27	2019-06-13	4.9	None	Remote	Medium	Single system	Partial	Partial	None
It was discovered that Dovecot before versions 2.2.36.1 and 2.3.4.1 incorrectly handled client certificates. A remote attacker in possession of a valid certificate with an empty username field could possibly use this issue to impersonate other users.														
7	CVE-2017-15132	772			2018-01-25	2019-10-09	5.0	None	Remote	Low	Not required	None	None	Partial
A flaw was found in dovecot 2.0 up to 2.2.33 and 2.3.0. An abort of SASL authentication results in a memory leak in dovecot's auth client used by login processes. The leak has impact in high performance configuration where same login processes are reused and can cause the process to crash due to memory exhaustion.														
8	CVE-2017-15130			DoS	2018-03-02	2019-10-02	4.3	None	Remote	Medium	Not required	None	None	Partial
A denial of service flaw was found in dovecot before 2.2.34. An attacker able to generate random SNI server names could exploit TLS SNI configuration lookups, leading to excessive memory usage and the process to restart.														
9	CVE-2017-14461	125		DoS	2018-03-02	2018-04-03	5.5	None	Remote	Low	Single system	Partial	None	Partial
A specially crafted email delivered over SMTP and passed on to Dovecot by MTA can trigger an out of bounds read resulting in potential sensitive information disclosure and denial of service. In order to trigger this vulnerability, an attacker needs to send a specially crafted email message to the server.														

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External Links:
NVD Website
CVE Web Site
View CVE: (e.g.: CVE-2009-1234 or 2010-1234 or 20101234)
View BID: (e.g.: 12345)
Search by Microsoft Reference ID: (e.g.: ms10-001 or 979552)

9 CVE-2017-14461	125	DoS	2018-03-02	2018-04-03	5.5	None	Remote	Low	Single system	Partial	None	Partial
A specially crafted email delivered over SMTP and passed on to Dovecot by MTA can trigger an out of bounds read resulting in potential sensitive information disclosure and denial of service. In order to trigger this vulnerability, an attacker needs to send a specially crafted email message to the server.												
10 CVE-2017-2669	20	DoS	2018-06-21	2019-10-09	5.0	None	Remote	Low	Not required	None	None	Partial
Dovecot before version 2.2.29 is vulnerable to a denial of service. When 'dot' passwd and userdb were used for user authentication, the username sent by the IMAP/POP3 client was sent through var_expand() to perform %variable expansion. Sending specially crafted %variable fields could result in excessive memory usage causing the process to crash (and restart), or excessive CPU usage causing all authentications to hang.												
11 CVE-2016-8652	20	DoS	2017-02-16	2017-02-22	4.3	None	Remote	Medium	Not required	None	None	Partial
The auth component in Dovecot before 2.2.27, when auth-policy is configured, allows a remote attackers to cause a denial of service (crash) by aborting authentication without setting a username.												
12 CVE-2015-3420	295	DoS	2017-09-19	2017-10-05	4.3	None	Remote	Medium	Not required	None	None	Partial
The ssl-proxy-openssl.c function in Dovecot before 2.2.17, when SSLv3 is disabled, allow remote attackers to cause a denial of service (login process crash) via vectors related to handshake failures.												
13 CVE-2014-3430	287	DoS	2014-05-14	2017-12-28	5.0	None	Remote	Low	Not required	None	None	Partial
Dovecot 1.1 before 2.2.13 and dovecot-ee before 2.1.7.7 and 2.2.x before 2.2.12.12 does not properly close old connections, which allows remote attackers to cause a denial of service (resource consumption) via an incomplete SSL/TLS handshake for an IMAP/POP3 connection.												
14 CVE-2013-6171	287	Bypass	2013-12-09	2018-03-15	5.8	None	Remote	Medium	Not required	Partial	Partial	None
checkpassword-reply in Dovecot before 2.2.7 performs setuid operations to a user who is authenticating, which allows local users to bypass authentication and access virtual email accounts by attaching to the process and using a restricted file descriptor to modify account information in the response to the dovecot-auth server.												
15 CVE-2013-2111	20	DoS	2014-05-27	2014-05-28	5.0	None	Remote	Low	Not required	None	None	Partial
The IMAP functionality in Dovecot before 2.2.2 allows remote attackers to cause a denial of service (infinite loop and CPU consumption) via invalid APPEND parameters.												
16 CVE-2011-4318	20		2013-03-06	2013-03-07	5.8	None	Remote	Medium	Not required	Partial	Partial	None
Dovecot 2.0.x before 2.0.16, when ssl or starttls is enabled and hostname is used to define the proxy destination, does not verify that the server hostname matches a domain name in the subject's Common Name (CN) of the X.509 certificate, which allows man-in-the-middle attackers to spoof SSL servers via a valid certificate for a different hostname.												
17 CVE-2011-2167	22	Dir. Trav.	2011-05-24	2017-08-28	6.5	None	Remote	Low	Single system	Partial	Partial	None
script-login in Dovecot 2.0.x before 2.0.13 does not follow the chroot configuration setting, which might allow remote authenticated users to conduct directory traversal attacks by leveraging a script.												
18 CVE-2011-2166	16	Bypass	2011-05-24	2017-08-28	6.5	None	Remote	Low	Single system	Partial	Partial	Partial
script-login in Dovecot 2.0.x before 2.0.13 does not follow the user and group configuration settings, which might allow remote authenticated users to bypass intended access restrictions by leveraging a script.												
19 CVE-2011-1929	20	DoS	2011-05-24	2017-08-16	5.0	None	Remote	Low	Not required	None	None	Partial
lib-mail/message-header-parser.c in Dovecot 1.2.x before 2.1.17 and 2.0.x before 2.0.13 does not properly handle "\0" characters in header names, which allows remote attackers to cause a denial of service (daemon crash or mailbox corruption) via a crafted e-mail message.												
20 CVE-2010-3780		DoS	2010-10-06	2011-08-26	4.0	None	Remote	Low	Single system	None	None	Partial
Dovecot 1.2.x before 1.2.15 allows remote authenticated users to cause a denial of service (master process outage) by simultaneously disconnecting many (1) IMAP or (2) POP3 sessions.												
21 CVE-2010-3779	264	Bypass	2010-10-06	2011-02-12	5.5	None	Remote	Medium	Single system	None	None	None
Dovecot 1.2.x before 1.2.15 and 2.0.x before 2.0.beta2 grants the admin permission to the owner of each mailbox in a non-public namespace, which might allow remote authenticated users to bypass intended access restrictions by changing the ACL of a mailbox, as demonstrated by a symlinked shared mailbox.												
22 CVE-2010-3707	264	Bypass	2010-10-06	2011-08-26	5.5	None	Remote	Low	Single system	Partial	Partial	None

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Apps Business Report Writ... The Key Elements o... Top 11 Characteristi... dictionary spanish

27 CVE-2009-3428	119	DoS Exec Code Overflow	2009-09-17	2017-09-18	7.5	None	Remote	Low	Not required	Partial	Partial	Partial
Multiple stack-based buffer overflows in the Sieve plugin in Dovecot 1.0 before 1.0.4 and 1.1 before 1.1.7, as derived from Cyrus libsieve, allow context-dependent attackers to cause a denial of service (crash) and possibly execute arbitrary code via a crafted SIEVE script, as demonstrated by forwarding an e-mail message to a large number of recipients, a different vulnerability than CVE-2009-2532.												
28 CVE-2008-5301	22	Dir. Trav.	2008-12-01	2017-08-07	6.4	None	Remote	Low	Not required	Partial	Partial	None
Directory traversal vulnerability in the ManageSieve implementation in Dovecot 1.0.15, 1.1, and 1.2 allows remote attackers to read and modify arbitrary sieve files via a "... (dot dot)" in a script name.												
29 CVE-2008-4907	20	DoS	2008-11-03	2017-08-07	4.3	None	Remote	Medium	Not required	None	None	Partial
The message parsing feature in Dovecot 1.1.4 and 1.1.5, when using the FETCH ENVELOPE command in the IMAP client, allows remote attackers to cause a denial of service (persistent crash) via an email with a malformed from address, which triggers an assertion error, aka "invalid message address parsing bug."												
30 CVE-2008-4930	264		2008-10-31	2017-09-28	7.1	None	Local	Low	Not required	Partial	None	None
dovecot 1.0.7 in Red Hat Enterprise Linux (RHEL) 5, and possibly Fedora, uses world-readable permissions for dovecot.conf, which allows local users to obtain the ssl_key_password parameter value.												
31 CVE-2008-4578	264	Bypass	2008-10-15	2018-10-11	5.0	None	Remote	Low	Not required	None	Partial	None
The ACL plugin in Dovecot before 1.1.4 allows attackers to bypass intended access restrictions by using the "k" right to create unauthorized "parent/child/child" mailboxes.												
32 CVE-2008-4577	264	Bypass	2008-10-15	2017-09-28	6.4	None	Remote	Low	Not required	Partial	Partial	None
The ACL plugin in Dovecot before 1.1.4 treats negative access rights as if they are positive access rights, which allows attackers to bypass intended access restrictions.												
33 CVE-2008-1218	255	Bypass	2008-03-10	2018-10-11	6.8	User	Remote	Medium	Not required	Partial	Partial	Partial
Argument injection vulnerability in Dovecot 1.0.x before 1.0.13, and 1.1.x before 1.1.rc3, when using blocking passbds, allows remote attackers to bypass the password check via a password containing TAB characters, which are treated as argument delimiters that enable the skip_password_check field to be specified.												
34 CVE-2008-1199	59		2008-03-06	2018-10-11	4.4	None	Local	Medium	Not required	Partial	Partial	Partial
Dovecot before 1.0.11, when configured to use mail_extra_groups to allow Dovecot to create dotlocks in /var/mail, might allow local users to read sensitive mail files for other users, or modify files or directories that are writable by group, via a symlink attack.												
35 CVE-2007-6598	264		2008-01-03	2018-10-15	6.8	None	Remote	Medium	Not required	Partial	Partial	Partial
Dovecot before 1.0.10, with certain configuration options including use of %variables, does not properly maintain the LDAP+auth cache, which might allow remote authenticated users to login as a different user who has the same password.												
36 CVE-2007-4211			2007-08-07	2017-09-28	6.0	User	Remote	Medium	Single system	Partial	Partial	Partial
The ACL plugin in Dovecot before 1.0.3 allows remote authenticated users with the insert right to save certain flags via a (1) COPY or (2) APPEND command.												
37 CVE-2007-2231		Dir. Trav.	2007-04-25	2018-10-16	4.3	None	Remote	Medium	Not required	Partial	None	None
Directory traversal vulnerability in index/mbx/mbx-storage.c in Dovecot before 1.0.rc29, when using the zlib plugin, allows remote attackers to read arbitrary gripped (.gz) mailboxes (mbx files) via a ... (dot dot) sequence in the mailbox name.												

Total number of vulnerabilities: 37 Page: 1 (This Page)

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```
Activities Terminal Sep 2 13:26 root@techiegeek: /home/techiegeek

root@techiegeek:/home/techiegeek# nmap -sS 43.255.154.56
Starting Nmap 7.80 ( https://nmap.org ) at 2020-09-02 01:27 IST
Note: Host seems down. If it is really up, but blocking our ping probes, try -Pn
Nmap done: 1 IP address (0 hosts up) scanned in 3.18 seconds
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143/tcp   open  imap
443/tcp   open  https
465/tcp   open  smtps
587/tcp   open  submission
990/tcp   closed ftps
993/tcp   open  imaps
995/tcp   open  pop3s
1248/tcp  open  hermes
3306/tcp  open  mysql
50000/tcp closed ibm-db2
50001/tcp closed unknown
50002/tcp closed iisnfs
50003/tcp closed unknown
50006/tcp closed unknown
50300/tcp closed unknown
50389/tcp closed unknown
50500/tcp closed unknown
50636/tcp closed unknown
50800/tcp closed unknown
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