CONSULT IT FINAL SECURITY

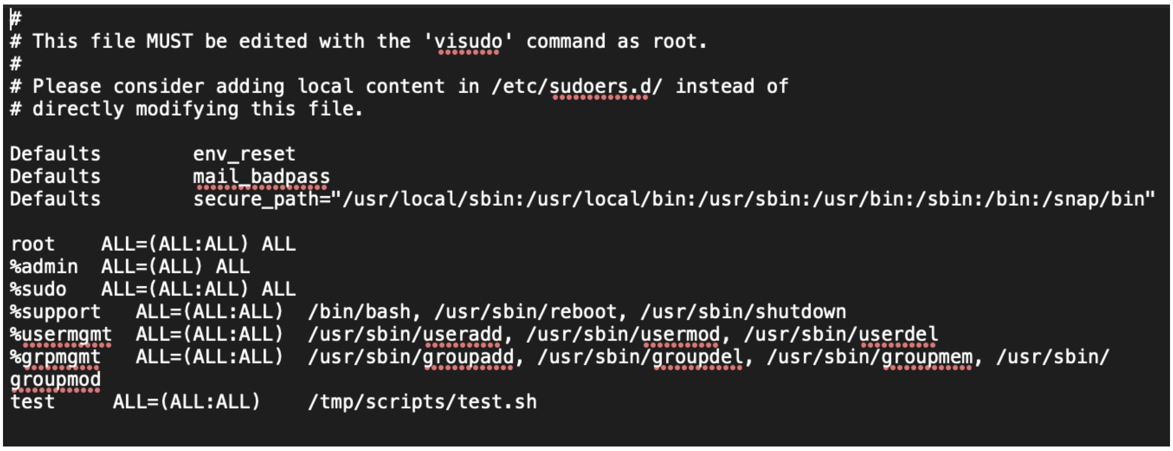
Sudoers

PSM

It's a good practice to have Privileged Session Manager. *PSM controls all IT manager sessions and creates video recordings of the devices in the network as well as virtual servers, and has the capacity to control any privileged session from start to the end. On the other hand, PSM can also monitor various network components such as employees, third parties and integrated systems via session control authorization.*
Utilized to monitor, manage and control encrypted manager sessions, PSM acts as a gateway between the session manager, users and the target endpoints. The man-in-the-middle approach, which is the fundamental reason behind Privileged Session Manager's operating principle to be such functional, eliminates the need to establish any middleware software in the target endpoints. Thanks to the man-in-the-middle approach, access portals or client applications are not required to establish connection.

Changes in Sudoers file

- Tutorial
- `test ALL=(ALL:ALL) /tmp/scripts/test.sh` This line is potentialy dangerous. User test can execute with sudo privilages `test.sh` script which source code can be moddified. This means he can execute each command as a root.
- Group `%support` shouldn't have access to run /bin/bash as root. It also allows to run any avaliable commands as root which is't necessary for support.



```
#
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.

Defaults        env_reset
Defaults        mail_badpass
Defaults        secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin"

root    ALL=(ALL:ALL) ALL
%admin  ALL=(ALL) ALL
%sudo   ALL=(ALL:ALL) ALL
%support   ALL=(ALL:ALL)  /bin/bash, /usr/sbin/reboot, /usr/sbin/shutdown
%usermgmt  ALL=(ALL:ALL)  /usr/sbin/useradd, /usr/sbin/usermod, /usr/sbin/userdel
%grpmgmt   ALL=(ALL:ALL)  /usr/sbin/groupadd, /usr/sbin/groupdel, /usr/sbin/groupmem, /usr/sbin/
groupmod
test     ALL=(ALL:ALL)    /tmp/scripts/test.sh
```

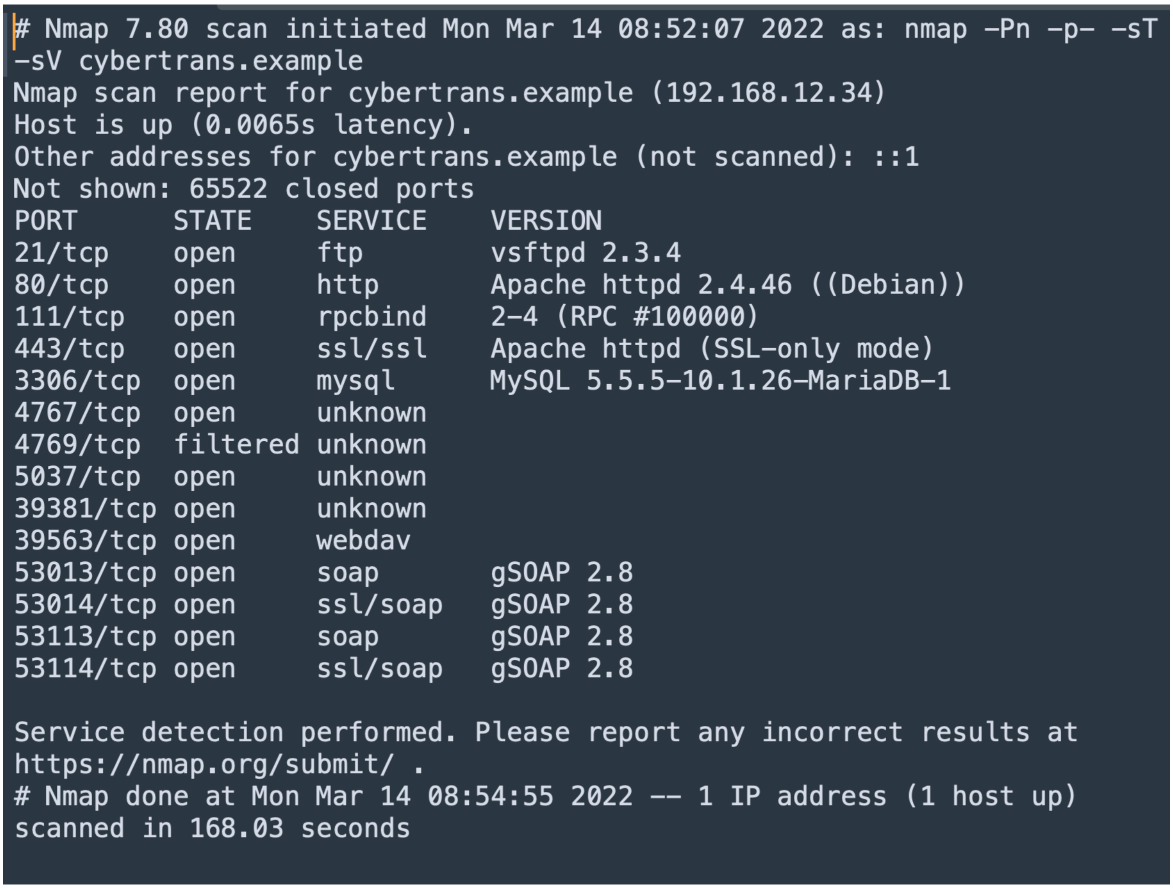
NMAP

Ports to be opened

- Having too many open ports expose servers to many potential attack vectors. . Opened should remain only:
  1. `21 (ftp)` for file transfer protocol.
  2. `80 (http)` for website to be achieved.
  3. `443 (https)` for secure website traffic.

Why close some ports

- We decided to close port 111. RPC service has a history of security vulnerabilities. Having this port exposed allows everybody to query information without a need to authentication. It should be opened only for certain whitelist of IPs.
- Port 3306 should also be closed. Exposing port 3306 can make our server vulnerable to attack. If a connection to database is necessary it is preffered to use ssh tunel instead.
- Ports: 4767, 4769, 5037, 39381 haven't got any known reason to be oppened. We need documentation of applications for further decisions.
- Port 39563 should be closed, webdav works on port 80 and 443 by default.
- Ports: 53013, 53014, 53113, 53114 should be closed tempolary, becouse of CVE-2021-21783 vulnerability avaliable for gSOAP 2.8.
- Moreover there is an Exploit avaliable for ftp vsftpd 2.3.4 which is used in our application. It should be updated rapidly to the newest version.

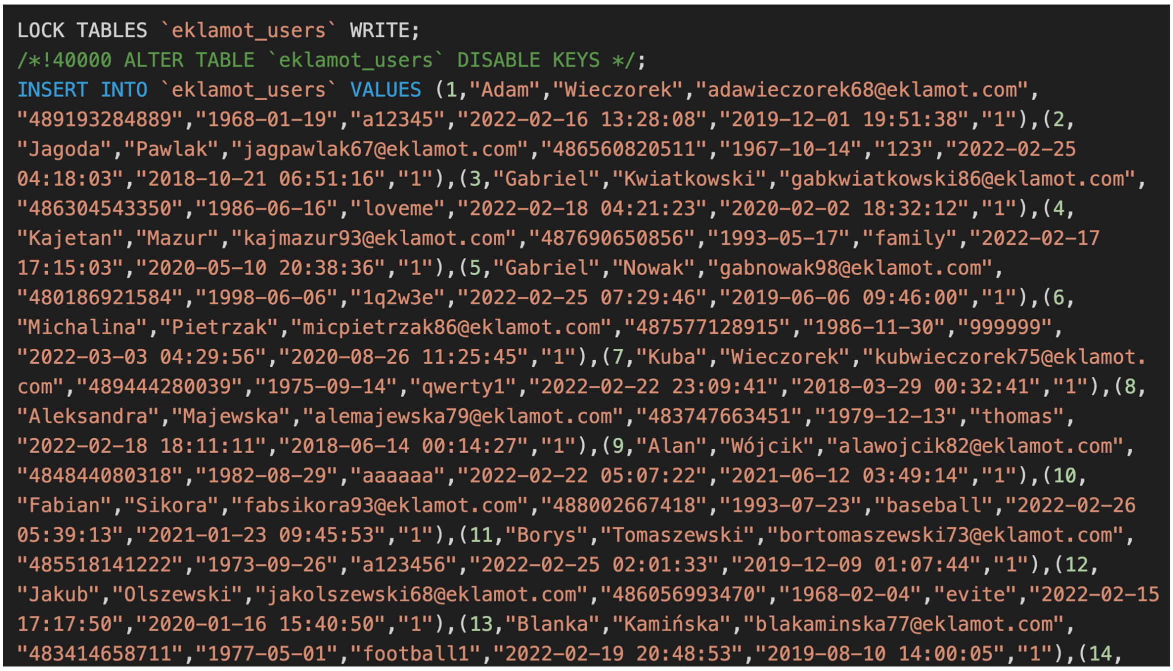


```
# Nmap 7.80 scan initiated Mon Mar 14 08:52:07 2022 as: nmap -Pn -p- -sT
-sV cybertrans.example
Nmap scan report for cybertrans.example (192.168.12.34)
Host is up (0.0065s latency).
Other addresses for cybertrans.example (not scanned): ::1
Not shown: 65522 closed ports
PORT      STATE    SERVICE    VERSION
21/tcp    open     ftp        vsftpd 2.3.4
80/tcp    open     http       Apache httpd 2.4.46 ((Debian))
111/tcp   open     rpcbind    2-4 (RPC #100000)
443/tcp   open     ssl/ssl    Apache httpd (SSL-only mode)
3306/tcp  open     mysql      MySQL 5.5.5-10.1.26-MariaDB-1
4767/tcp  open     unknown
4769/tcp  filtered unknown
5037/tcp  open     unknown
39381/tcp open     unknown
39563/tcp open     webdav
53013/tcp open     soap       gSOAP 2.8
53014/tcp open     ssl/soap   gSOAP 2.8
53113/tcp open     soap       gSOAP 2.8
53114/tcp open     ssl/soap   gSOAP 2.8

Service detection performed. Please report any incorrect results at
https://nmap.org/submit/ .
# Nmap done at Mon Mar 14 08:54:55 2022 -- 1 IP address (1 host up)
scanned in 168.03 seconds
```

DataBase

- Passwords should almost always be stored as hashes of hash function (f.e. sha-256) not a plain text. Hashes are irreversable, so even if the attacker will find our database, he has to put in lot's of effort to get plain text passwords.
- Security of personal data of customers is extremaly important. Any potential leak can couse destructive consequences for whole company. As so database should be well protected



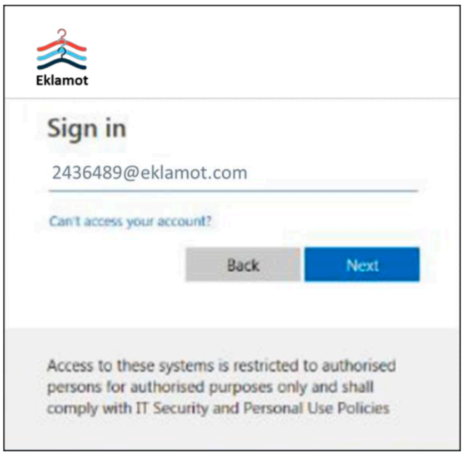
```
LOCK TABLES `eklamot_users` WRITE;
/*!40000 ALTER TABLE `eklamot_users` DISABLE KEYS */;
INSERT INTO `eklamot_users` VALUES (1,"Adam","Wieczorek","adawieczorek68@eklamot.com",
"489193284889","1968-01-19","a12345","2022-02-16 13:28:08","2019-12-01 19:51:38","1"),(2,
"Jagoda","Pawlak","jagpawlak67@eklamot.com","486560820511","1967-10-14","123","2022-02-25
04:18:03","2018-10-21 06:51:16","1"),(3,"Gabriel","Kwiatkowski","gabkwiatkowski86@eklamot.com",
"486304543350","1986-06-16","loveme","2022-02-18 04:21:23","2020-02-02 18:32:12","1"),(4,
"Kajetan","Mazur","kajmazur93@eklamot.com","487690650856","1993-05-17","family","2022-02-17
17:15:03","2020-05-10 20:38:36","1"),(5,"Gabriel","Nowak","gabnowak98@eklamot.com",
"480186921584","1998-06-06","1q2w3e","2022-02-25 07:29:46","2019-06-06 09:46:00","1"),(6,
"Michalina","Pietrzak","micpietrzak86@eklamot.com","487577128915","1986-11-30","999999",
"2022-03-03 04:29:56","2020-08-26 11:25:45","1"),(7,"Kuba","Wieczorek","kubwieczorek75@eklamot.
com","489444280039","1975-09-14","qwerty1","2022-02-22 23:09:41","2018-03-29 00:32:41","1"),(8,
"Aleksandra","Majewska","alemajewska79@eklamot.com","483747663451","1979-12-13","thomas",
"2022-02-18 18:11:11","2018-06-14 00:14:27","1"),(9,"Alan","Wójcik","alawojcik82@eklamot.com",
"484844080318","1982-08-29","aaaaaa","2022-02-22 05:07:22","2021-06-12 03:49:14","1"),(10,
"Fabian","Sikora","fabsikora93@eklamot.com","488002667418","1993-07-23","baseball","2022-02-26
05:39:13","2021-01-23 09:45:53","1"),(11,"Borys","Tomaszewski","bortomaszewski73@eklamot.com",
"485518141222","1973-09-26","a123456","2022-02-25 02:01:33","2019-12-09 01:07:44","1"),(12,
"Jakub","Olszewski","jakolszewski68@eklamot.com","486056993470","1968-02-04","evite","2022-02-15
17:17:50","2020-01-16 15:40:50","1"),(13,"Blanka","Kamińska","blakaminska77@eklamot.com",
"483414658711","1977-05-01","football1","2022-02-19 20:48:53","2019-08-10 14:00:05","1"),(14,
```

Password Policy

- We should force changing tempolary password after first login, not only kindly ask for it. It does not work in most cases.
- Adding two-factor authorisation would be a great idea. Authenticator app on smartphone or pendrive auuthorisation to consider.

Kroki w przypadku pierwszego logowania:

1. Aby uzyskać dostęp do wirtualnej maszyny wejdź na stronę https://vm.eklamot.example
2. Wpisz swoją numer użytkownika i tymczasowe hasło (w celu uzyskania tymczasowego hasła skontaktuj się z pracownikiem działu IT, który prześle je drogą mailową na wskazany przez użytkownika adres email).



Sign in

2436489@eklamot.com

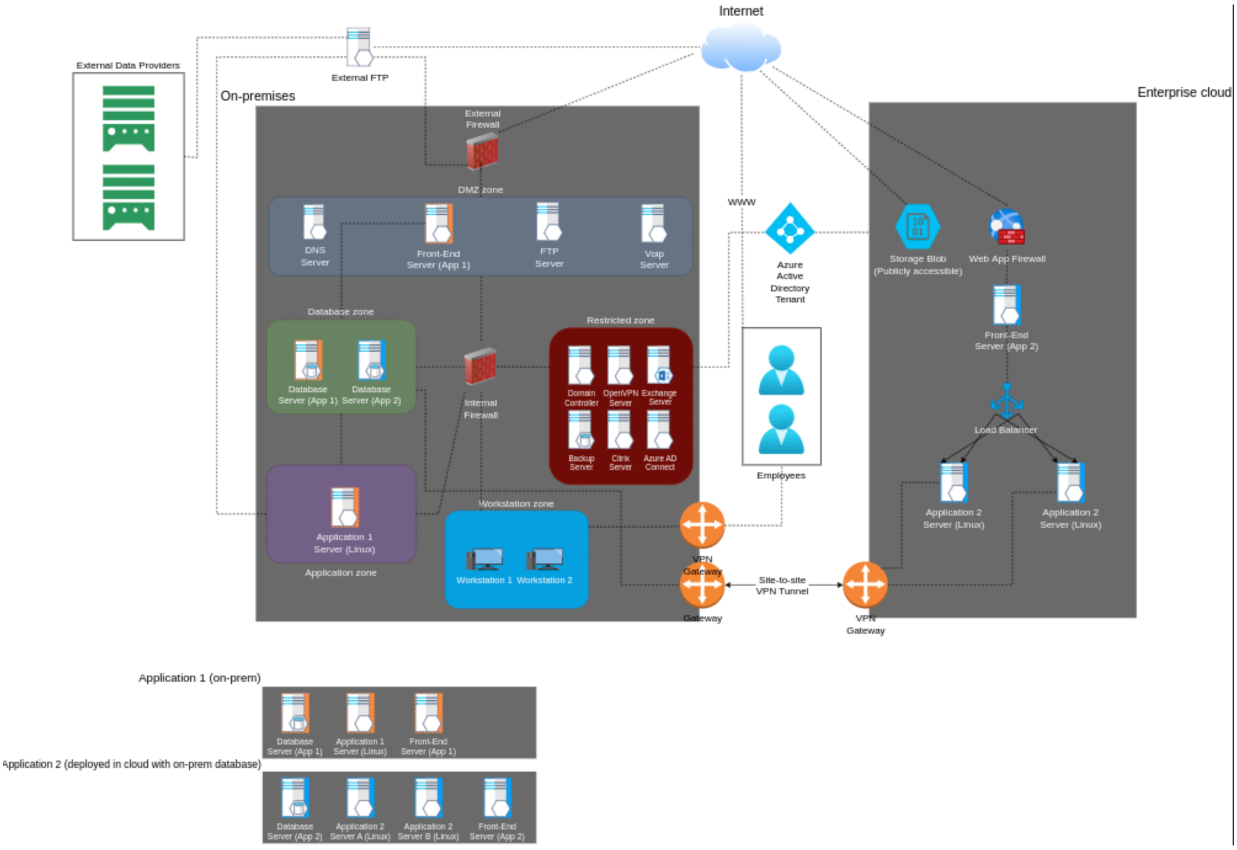
Access to these systems is restricted to authorised persons for authorised purposes only and shall comply with IT Security and Personal Use Policies

5. Pamiętaj o jak najszybszej zmianie tymczasowego hasła na takie, które spełnia politykę haseł w dokumencie „Polityka haseł”

Architecture

- Backup server should be accesible only for admin employess.
- Employess should not have access directry to restreicted zone. They need to connect to workstation zone by VPN or RCP first.
- Maybe a firewall between Front-End server and Database Server.
- Both Application2 should have access to database2.

New architecture diagram:



Zmiana Procesu Zarządzania Podatnościami w Eklamot

Changes we suggest:

Security scanners are not ideal. We suggest using both famous Nessus and Nexpose for better quality. Morover even both can miss some dangerous vulnerabilities. As so we insist on sending those raports directly to security team. Security team would then extend reasearch.

Final Process:

1. Prepare a scan request - If there is a need for scanning, the request is made by the System Administrator.
2. Preparation and execution of the scan with Nessus and Nexpose (complementary tools)
3. Provide the results of the scan to the Security Team.
4. The Security Team deepens the vulnerability search.
5. If vulnerabilities are found, they are forwarded to the system administrator with a report describing them.
6. Is a deviation required? A decision point that determines if a deviation is required within the vulnerabilities found. The system administrator reviews and decides whether a derogation request is required.
7. Prepare a deviation request -- If the system administrator decides a deviation is required, the system administrator prepares an appropriate request with justification, which it sends to the Security Team
8. Perform corrective action -- If no deviation request is required, the System Administrator proceeds to implement the planned corrective action.
9. Report completion of corrective action -- Upon completion of the action, the System Administrator reports its completion to the Security Team.
10. Has the variance request been approved? - A decision point that determines whether the deviation request has been accepted by the Security Team. If the request is accepted, the Security Team prepares an appropriate summary. If the request is not accepted, the system administrator must take corrective action.
11. Prepare Summary - The Security Team prepares an appropriate summary depending on whether the process resulted in the implementation of corrective actions to address the vulnerabilities discovered or the acceptance of the deviation request.