

ThriveDX

# TDX Arena Security Analyst

Certification



This is to acknowledge that

**Jakub Jedrzejczak**

Has successfully completed all requirements and criteria for

**TDX Arena Security Analyst**

Issue Date

Feb 09, 2025

Expiry Date

Feb 09, 2026

A handwritten signature in black ink, appearing to read 'Roman Senko'.

Roman Senko  
VP Learning

Certification ID. 212405





# TDX Arena Security Analyst

## Certification info



In this certification, you'll tackle advanced simulations in the TDX-Arena system, covering key course topics.

It aims to demonstrate your security research skills via hands-on experience, enabling you to independently manage cyber incidents.

Completion requires crafting a detailed Incident Response report, showcasing your ability to handle and mitigate cybersecurity threats effectively, and proving your readiness for the real-world cybersecurity landscape.

Certification ID. 212405



## "Please Recycle"

### • Executive Summary

- W systemie znalazły się dane uwierzytelniające w niebezpiecznej lokalizacji (kosz użytkownika), co mogło prowadzić do nieautoryzowanego dostępu.
- Administratorzy powinni wdrożyć politykę bezpiecznego usuwania wrażliwych plików oraz monitorować zawartość systemu pod kątem potencjalnych naruszeń bezpieczeństwa.
- Warto rozważyć wdrożenie kontroli dostępu oraz ograniczeń dla użytkowników w celu minimalizacji ryzyka eksfiltracji danych.

## • Finding Details

```
thomas@Ubuntu:~$ ls
Downloads
thomas@Ubuntu:~$ cd /Downloads
bash: cd: /Downloads: No such file or directory
thomas@Ubuntu:~$ cd Downloads
thomas@Ubuntu:~/Downloads$ ls -aR
.:
. .. Elanor attributives carrions forts mischances spoors

./Elanor:
. .. Krishnas bisexuals chits synthesiss wronger

./Elanor/Krishnas:
. Cavendishs.txt Sartre.pdf cocktails.psd mountaineer.m4a runabouts.gif testing.jpg
.. Reuters.7z atrocity.mp3 garbs.jpeg retooled.pdf subversion.jpg

./Elanor/bisexuals:
. dogmatism.tar kegs.gif probationary.7z regattas.mp3 revolutionize.xml wren.m4a
.. intercollegiate.gif overprint.gif pullouts.jpeg represented.psd rigidnesss.xml

./Elanor/chits:
. Bowens.png breathers.mp3 cocksucker.gif hitchhiker.jpeg shys.odt wickedly.psd
.. Lears.pdf bullfightings.log congas.jpeg maladys.odt stupids.gif

./Elanor/synthesiss:
. Confederacys.tar Tonya.jpeg correlating.psd goodness.jpg modernists.tar whispers.gz
.. Ilenes.txt Vuittons.mp3 foodstuffs.odt guessable.tar timelines.gz

./Elanor/wronger:
. Cassatts.pdf codes.gif contrary.gif questionnaire.pdf thwart.jpeg zappers.png
.. blockheads.psd coking.tar heartbeats.m4a squeezing.m4a windinesss.7z

./attributives:
. .. Scythians cactus mornings reunifies salving
```

```

thomas@Ubuntu:~/Downloads$ ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.0   3732  2888 pts/0    Ss+   09:22   0:00 /bin/bash /usr/local/bin/run.sh
root        35  0.0  0.0   6876  2480 ?        Ss    09:22   0:00 sshd: /usr/local/sbin/sshd [listener] 0 of 10-100 startup:
root        37  0.0  0.0   2324   684 pts/0    S+    09:22   0:00 tail -f /dev/null
root       2974  0.0  0.0   7008  5132 ?        Ss    09:22   0:00 sshd: thomas [priv]
thomas     2976  0.0  0.0   7008  4032 ?        S     09:22   0:00 sshd: thomas@pts/1
thomas     2977  0.0  0.0   3864  3188 pts/1    Ss+   09:22   0:00 -bash
thomas     2979  0.0  0.0   2588  1848 pts/1    S+    09:22   0:00 script -faq /var/log/script/script.log
thomas     2980  0.0  0.0   3996  3236 pts/2    Ss    09:22   0:00 bash -i
thomas     3065  0.0  0.0   7636  2820 pts/2    R+    09:23   0:00 ps aux
thomas@Ubuntu:~/Downloads$ find / -type f -name "*.sh" 2>/dev/null
/etc/init.d/hwclock.sh
/etc/profile.d/logger.sh
/home/thomas/Downloads/carrions/mutilate/flux.sh
/home/thomas/Downloads/carrions/spacesuit/ruttetd.sh
/home/thomas/Downloads/carrions/spacesuit/shirtsleeve.sh
/home/thomas/Downloads/carrions/tarrier/poked.sh
/home/thomas/Downloads/mischances/assimilation/crackerjack.sh
/home/thomas/Downloads/mischances/abandoned/tonics.sh
/home/thomas/Downloads/spoors/melancholy/window.sh
/home/thomas/Downloads/spoors/starchy/preppie.sh
/home/thomas/Downloads/spoors/palimony/wheres.sh
/home/thomas/Downloads/spoors/hinterland/suffragan.sh
/home/thomas/Downloads/spoors/hinterland/routs.sh
/home/thomas/Downloads/spoors/hinterland/Arlenesh.sh
/home/thomas/Downloads/forts/sandals/Bioko.sh
/home/thomas/Downloads/attributives/mornings/Ghats.sh
/home/thomas/Downloads/attributives/mornings/syndicates.sh
/home/thomas/Downloads/attributives/mornings/racing.sh
/home/thomas/Downloads/attributives/salving/throne.sh
/home/thomas/Downloads/attributives/reunifies/conciseness.sh
/home/thomas/Downloads/attributives/Scythians/anonymity.sh
/lib/init/vars.sh
/usr/local/bin/setup.sh
/usr/local/bin/healthchk.sh
/usr/local/bin/run.sh
/usr/local/bin/spam.sh
/usr/local/bin/zsh_shell.sh
/usr/share/debconf/confmodule.sh
/usr/share/doc/git/contrib/coverage-diff.sh

```

```

thomas@Ubuntu:/home$ ls -aR /home
/home:
. .. admin thomas
ls: cannot open directory '/home/admin': Permission denied

/home/thomas:
. .. .bash_history .bashrc .local .todos.json .viminfo Downloads

/home/thomas/.local:
. .. share

/home/thomas/.local/share:
. .. Trash nano

/home/thomas/.local/share/Trash:
. .. files info

/home/thomas/.local/share/Trash/files:
. .. mail.htm

/home/thomas/.local/share/Trash/info:
. .. mail.htm.trashinfo

/home/thomas/.local/share/nano:
thomas@Ubuntu:/home$ cat /home/thomas/.local/share/Trash/files/mail.htm
<html xmlns:o="urn:schemas-microsoft-com:office:office"
xmlns:w="urn:schemas-microsoft-com:office:word"
xmlns:m="http://schemas.microsoft.com/office/2004/12/omml"
xmlns="http://www.w3.org/TR/REC-html40">

thomas@Ubuntu:~/Downloads$ cat /usr/local/bin/healthchk.sh
#!/bin/bash

# Check if the tttyd process is down.
ps -aux | grep "tttyd" &> /dev/null
if [ $? -ne 0 ]; then
    echo "The tttyd service is not working properly"
    exit 1;
fi

# Check if the trashed mail.htm exists in the Trash directory.
ls -l /home/thomas/.local/share/Trash/files | grep "mail.htm" &> /dev/null;
if [ $? -ne 0 ]; then
    echo "The file was not found on the system"
    exit 1;
fi

echo "All services running correctly"
exit 0;
thomas@Ubuntu:~/Downloads$ █

```

```

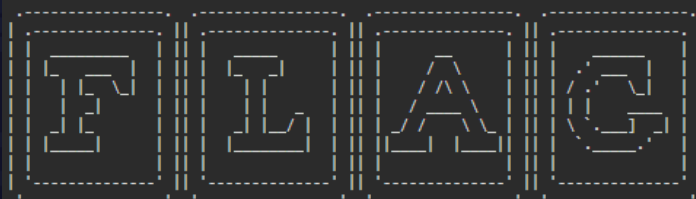
<body lang=en-IL style='tab-interval:36.0pt'>
<div class=WordSection1>
<p class=MsoNormal style='margin-left:120.0pt;text-indent:-120.0pt;tab-stops:
120.0pt;mso-layout-grid-align:none;text-autospace:none'><b><span
style='color:black'>From:<span style='mso-tab-count:1'> </span></span></b><span
style='color:black'>Nathan &lt;nathan770@gmail.com><o:p></o:p></span></p>
<p class=MsoNormal style='margin-left:120.0pt;text-indent:-120.0pt;tab-stops:
120.0pt;mso-layout-grid-align:none;text-autospace:none'><b><span
style='color:black'>Sent:<span style='mso-tab-count:1'> </span></span></b><span
style='color:black'>Monday, 23 April 2018 13:31<o:p></o:p></span></p>
<p class=MsoNormal style='margin-left:120.0pt;text-indent:-120.0pt;tab-stops:
120.0pt;mso-layout-grid-align:none;text-autospace:none'><b><span
style='color:black'>To:<span style='mso-tab-count:1'> </span></span></b><span
style='color:black'>thomas@gmail.com<o:p></o:p></span></p>
<p class=MsoNormal style='margin-left:120.0pt;text-indent:-120.0pt;tab-stops:
120.0pt;mso-layout-grid-align:none;text-autospace:none'><b><span
style='color:black'>Subject:<span style='mso-tab-count:1'> </span></span></b><span
style='color:black'>New password<o:p></o:p></span></p>
<p class=MsoNormal><o:p>&nbsp;</o:p></p>
<p class=MsoNormal><span style='mso-fareast-font-family:"Times New Roman"'>Hi Pam
,<o:p></o:p></span></p>
<div>
<p class=MsoNormal><span style='mso-fareast-font-family:"Times New Roman"'>IT
were supposed to change my password because of the new password requirements.
They need to know if I can login. I am still at running some arrents, would
you mind checking for me if the new password works?<o:p></o:p></span></p>
</div>
<div>
<p class=MsoNormal><span style='mso-fareast-font-family:"Times New Roman"'>Login:admin<o:p></o:p></span></p>
</div>
<div>
<p class=MsoNormal><span style='mso-fareast-font-family:"Times New Roman"'>Pass:vYuzpN9MTHdxWw5a<o:p></o:p></span></p>
</div>
<div>

```

```

thomas@Ubuntu:/home$ su
Password:
su: Authentication failure
thomas@Ubuntu:/home$ su - admin
Password:

```



```
d726335216d643e3c467eb0cdfc3d4e7
```

```

Always be yourself,
unless you can be someone better.

```



# PT Report

**"One of us"**

- Executive Summary

Podczas analizy systemu wykryto podejrzone pliki .exe znajdujące się na pulpicie w katalogu suspicious-files. W celu identyfikacji ich typów użyto narzędzia file, a następnie przeskanowano je przy pomocy ClamAV, aby sprawdzić ich bezpieczeństwo.

#### Identyfikacja plików

Po uruchomieniu komendy: "file \*" wykryto, że file1776.exe jest plikiem wykonywalnym w formacie MS-DOS executable.

Skanowanie ClamAV Następnie przeprowadzono skanowanie za pomocą ClamAV: clamscan file176.exe

Wynik analizy wskazuje, że file176.exe został rozpoznany jako złośliwe oprogramowanie.



## • Finding Details

```
bruce@workstation:~$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
bruce@workstation:~$ cd Desktop
bruce@workstation:~/Desktop$ ls
chromium.desktop clamav-ui firefox-esr.desktop org.kde.konsole.desktop suspicious-files
bruce@workstation:~/Desktop$ cd suspicious-files/
bruce@workstation:~/Desktop/suspicious-files$ ls
file0.exe file123.exe file149.exe file174.exe file2.exe file224.exe file25.exe file30.exe file56.exe file81.exe
file1.exe file124.exe file15.exe file175.exe file20.exe file225.exe file250.exe file31.exe file57.exe file82.exe
file10.exe file125.exe file150.exe file176.exe file200.exe file226.exe file251.exe file32.exe file58.exe file83.exe
file100.exe file126.exe file151.exe file177.exe file201.exe file227.exe file252.exe file33.exe file59.exe file84.exe
file101.exe file127.exe file152.exe file178.exe file202.exe file228.exe file253.exe file34.exe file6.exe file85.exe
file102.exe file128.exe file153.exe file179.exe file203.exe file229.exe file254.exe file35.exe file60.exe file86.exe
file103.exe file129.exe file154.exe file18.exe file204.exe file23.exe file255.exe file36.exe file61.exe file87.exe
file104.exe file13.exe file155.exe file180.exe file205.exe file230.exe file256.exe file37.exe file62.exe file88.exe
file105.exe file130.exe file156.exe file181.exe file206.exe file231.exe file257.exe file38.exe file63.exe file89.exe
file106.exe file131.exe file157.exe file182.exe file207.exe file232.exe file258.exe file39.exe file64.exe file9.exe
file107.exe file132.exe file158.exe file183.exe file208.exe file233.exe file259.exe file4.exe file65.exe file90.exe
file108.exe file133.exe file159.exe file184.exe file209.exe file234.exe file26.exe file40.exe file66.exe file91.exe
file109.exe file134.exe file16.exe file185.exe file21.exe file235.exe file260.exe file41.exe file67.exe file92.exe
file11.exe file135.exe file160.exe file186.exe file210.exe file236.exe file261.exe file42.exe file68.exe file93.exe
file110.exe file136.exe file161.exe file187.exe file211.exe file237.exe file262.exe file43.exe file69.exe file94.exe
file111.exe file137.exe file162.exe file188.exe file212.exe file238.exe file263.exe file44.exe file7.exe file95.exe
file112.exe file138.exe file163.exe file189.exe file213.exe file239.exe file264.exe file45.exe file70.exe file96.exe
file113.exe file139.exe file164.exe file19.exe file214.exe file24.exe file265.exe file46.exe file71.exe file97.exe
file114.exe file14.exe file165.exe file190.exe file215.exe file240.exe file266.exe file47.exe file72.exe file98.exe
file115.exe file140.exe file166.exe file191.exe file216.exe file241.exe file267.exe file48.exe file73.exe file99.exe
file116.exe file141.exe file167.exe file192.exe file217.exe file242.exe file268.exe file49.exe file74.exe
file117.exe file142.exe file168.exe file193.exe file218.exe file243.exe file269.exe file5.exe file75.exe
file118.exe file143.exe file169.exe file194.exe file219.exe file244.exe file27.exe file50.exe file76.exe
file119.exe file144.exe file17.exe file195.exe file22.exe file245.exe file270.exe file51.exe file77.exe
file12.exe file145.exe file170.exe file196.exe file220.exe file246.exe file271.exe file52.exe file78.exe
file120.exe file146.exe file171.exe file197.exe file221.exe file247.exe file28.exe file53.exe file79.exe
file121.exe file147.exe file172.exe file198.exe file222.exe file248.exe file29.exe file54.exe file8.exe
file122.exe file148.exe file173.exe file199.exe file223.exe file249.exe file3.exe file55.exe file80.exe
bruce@workstation:~/Desktop/suspicious-files$ file *
file0.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file1.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file10.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file100.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file101.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file102.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file103.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file104.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file105.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file106.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file107.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file108.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file109.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file11.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file110.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file111.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file112.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file113.exe: PE32 executable (GUI) Intel 80386, for MS Windows
```

```
file168.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file169.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file17.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file170.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file171.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file172.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file173.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file174.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file175.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file176.exe: MS-DOS executable
file177.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file178.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file179.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file18.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file180.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file181.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file182.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file183.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file184.exe: PE32 executable (GUI) Intel 80386, for MS Windows
file185.exe: PE32 executable (GUI) Intel 80386, for MS Windows
```

ClamAV web ui - Chromium

ClamAV web ui | clamav-ui.com


Apps | Debian.org | Latest News | Help


ClamAV web ui | Browse Files | Scanning History

### ClamAV

- Home
- Scan
- API Docs

#### Scan log

 file176.exe x ClamAV engine flagged this file as malicious.

Web client	Size	Date
	223.19 KB	Mar 1, 2025

MD5	MimeType
<u>f48a8687e91fd9ef98cd1b7aaeeb2a4c</u>	application/x-ms-dos-executable

Scan another



## "Troll"

[illegible]

Nope, try again

- Finding Details

```
student@b2ca5f619e36:~/workspace$ /usr/bin/python3 /home/student/workspace/troll.py
```

```
TTTTTTTTTTTTTTTTTTTTT          1111111 1111111
T::::::::::::::::::::T          1:::::1 1:::::1
T::::::::::::::::::::T          1:::::1 1:::::1
T:::::TT:::::::::TT:::::T      1:::::1 1:::::1
TTTTT T:::::T TTTTTTrrrrr rrrrrrrr  oooooooooo  1:::::1 1:::::1
      T:::::T r::::rrr::::rrr  oo::::::::::oo  1:::::1 1:::::1
      T:::::T r::::rrr::::rrr  o:::::::::::o  1:::::1 1:::::1
      T:::::T rr::::rrrrr::::ro:::::ooooo::::o  1:::::1 1:::::1
      T:::::T r::::rr r::::ro::::o o::::o  1:::::1 1:::::1
      T:::::T r::::rr rrrrrro::::o o::::o  1:::::1 1:::::1
      T:::::T r::::rr o::::o o::::o  1:::::1 1:::::1
      T:::::T r::::rr o::::o o::::o  1:::::1 1:::::1
      TT:::::TT r::::rr o:::::ooooo:::::ol:::::1l:::::1
      T:::::TT r::::rr o:::::::::::ol:::::1l:::::1
      T:::::TT r::::rr oo::::::::::oo 1:::::1l:::::1
      TTTTTTTTTT rrrrrrr  oooooooooo  1111111111111111
```

```
What's your name 1337 hacker? EduardKhil
Your token is: 16EduardKhil
Don't forget it!
what's the username? EduardKhil
what's the password? Mr.Trololo
```



```
You did it!?!
student@b2ca5f619e36:~/workspace$
```

```
troll.py  password.py x
password.py > ...
1  import random
2
3  # Definicja niektórych zmiennych
4  frogs = [0x65, 0x61, 0x73, 0x72, 0x64, 0x21]
5  main_int = [0x6e, 0x6f, 0x4d, 0x72, 0x2e, 0x54, 0x72, 0x6f, 0x6c, 0x6f, 0x6c, 0x6f, 0x20]
6
7  over_9000 = []
8
9  # Modyfikacja listy frogs
10 for frog in frogs:
11     frog += random.randint(0, 0x3e8) # Losowa modyfikacja
12     over_9000.append(frog)
13
14 # Modyfikacja main_int
15 for pepe in main_int:
16     pepe += 2 ^ 2 # Przesunięcie
17     over_9000.append(pepe)
18
19 # Sprawdzanie 'over_kill'
20 over_kill = over_9000[8:-1]
21 password = "".join([chr(rage) for rage in over_kill])
22
23 print("Hasło to:", password)
24

Problems  Python X
student@88b995d2ebc5:~/workspace$ /usr/bin/python3 /home/student/workspace/name.py
Hasło to: Mr.Trololo
student@88b995d2ebc5:~/workspace$
```



troll.py password.py name.py x

```
name.py > ...
1  # Zmienne w kodzie
2  ar = '\x45\x64'
3  ey = '\x75\x61'
4  ou = '\x72\x64'
5  ma = '\x4b\x68'
6  d = '\x69\x6c'
7
8  # łączenie i dekodowanie zmiennych
9  meme = (ar + ey + ou + ma + d).encode("UTF-8").decode()
10
11 # Wyświetlenie odszyfrowanego username
12 print("Odszyfrowany username:", meme)
13
```

Problems Python x

```
student@88b995d2ebc5:~/workspace$ /usr/bin/python3 /home/student/workspace/name.py
Hasło to: Mr.Trololo
student@88b995d2ebc5:~/workspace$ /usr/bin/python3 /home/student/workspace/name.py
Odszyfrowany username: EduardKhil
student@88b995d2ebc5:~/workspace$
```

## MD5 Hash Generator

• [Sha1](#)

Use this generator to create an MD5 hash of a string:

EduardKhil:Mr.Trololo

Generate →

Your String	EduardKhil:Mr.Trololo	
MD5 Hash	ec0d2817b10715b5481d5f49c837827b	<button>Copy</button>
SHA1 Hash	ab91ddbd270c56990e22287fdb17be4c86e33b9	<button>Copy</button>