

LAB – 0

AGENT INSTALL

- Request Trial
- Email Confirmation
- Registration
- Agent Download
- Installation

REGISTER FOR TRIAL

ENDPOINT PRIVILEGE MANAGER FREE TRIAL

Try CyberArk Endpoint Privilege Manager, free for 30 days!

See for yourself why organizations around the globe trust CyberArk to secure their Digital Transformation and leverage Endpoint Privilege Manager to secure their workstation and server endpoint infrastructures to enhance endpoint security while enabling user productivity and operational efficiency, and to satisfy audit and compliance requirements.

Check out how Endpoint Privilege Manager can help you

- ✓ Remove local admin rights while improving user experience and optimizing IT operations
- ✓ Enforce least privilege and create scenarios for different user roles, conditions and environments with comprehensive conditional policy-based application control
- ✓ Defend against ransomware with an additional layer of protection centered around data, ideally complementing verdict-based threat analysis tools
- ✓ Boost visibility with policy audit and create audit trails to track, analyze and report on privilege elevation events
- ✓ Actively defend credentials and credential stores, and place credential lures in attackers' pathways to stop credential theft, prevent lateral movement and detect attacks early



GET A 30 DAY FREE TRIAL

* First Name

* Last Name

* Business Email Address

yourname@email.com

* Phone Number

Numerical values only

* Company Name

* Job Title

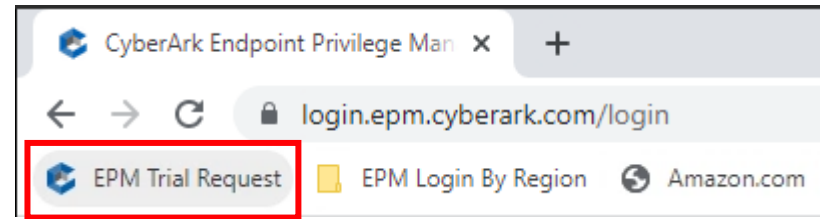
* Role
*Select Role...

* Department
*Select Department...

* Country
*Select Country

* Data Center
*Select Data Center Location

Goals For Trial
What are you looking to do with the trial? Enter a few goals / requirements. (ex. Implement Least Privilege, block ransomware, prevent credential theft, etc.)



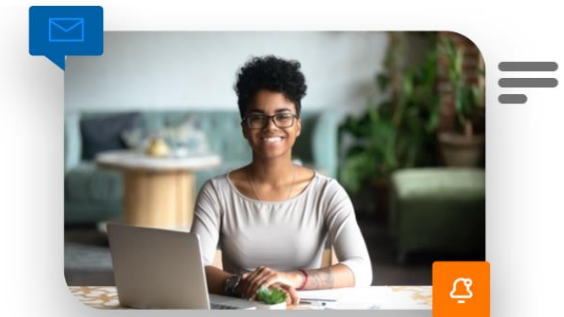
↑ > Lab 0 - Agent Install

jects
p
ments
nads

Name	Date modified
Lab 0 - Agent Install.pdf	5/9/2023 3:18 PM
Register for Trial	8/2/2022 3:59 PM

THANK YOU FOR SIGNING UP

We will contact you shortly with an activation link to your free 30-day Endpoint Privilege Manager trial account. All submissions are subject to review and activation will be provided to business email addresses only.



<https://www.cyberark.com/try-buy/endpoint-privilege-manager-trial/>

ACTIVATION

Welcome to the CyberArk EPM free trial External Inbox x

CyberArk EPM SaaS <noreplyEPM@cyberark.com>
to

Hello and thank you for your interest in the CyberArk EPM free trial.
Please click the [link](#), to create your account, and then log in from www.cyberark.com to start using your

For security reasons, the link is active for one entry only and will expire in one month.

Here are the details you just submitted at 8/2/2022 6:57:21 PM (UTC) for your CyberArk EPM free trial:

- Name:
- Company:
- Phone:
- Email:
- Industry:
- Country:
- No of employees:
- Comment:
- How did you hear about us:

Note: A copy of this email is stored in CyberArk records.

Sincerely yours,
CyberArk EPM SaaS Administrator.

Please do not reply to this message. Mail sent to this address cannot be answered.

CyberArk Registration

Please set your password

Your login*

Password*

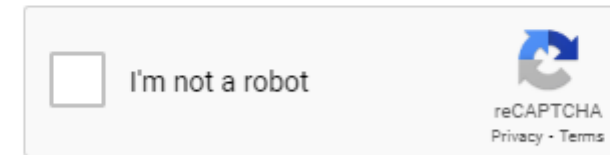
Confirm Password*

Security Question*

Security Answer*

* - required fields

Note: Password must be at least 12 characters long. Password must contain both upper and lower case letters. Password must contain at least one number. Password must contain at least one special character.

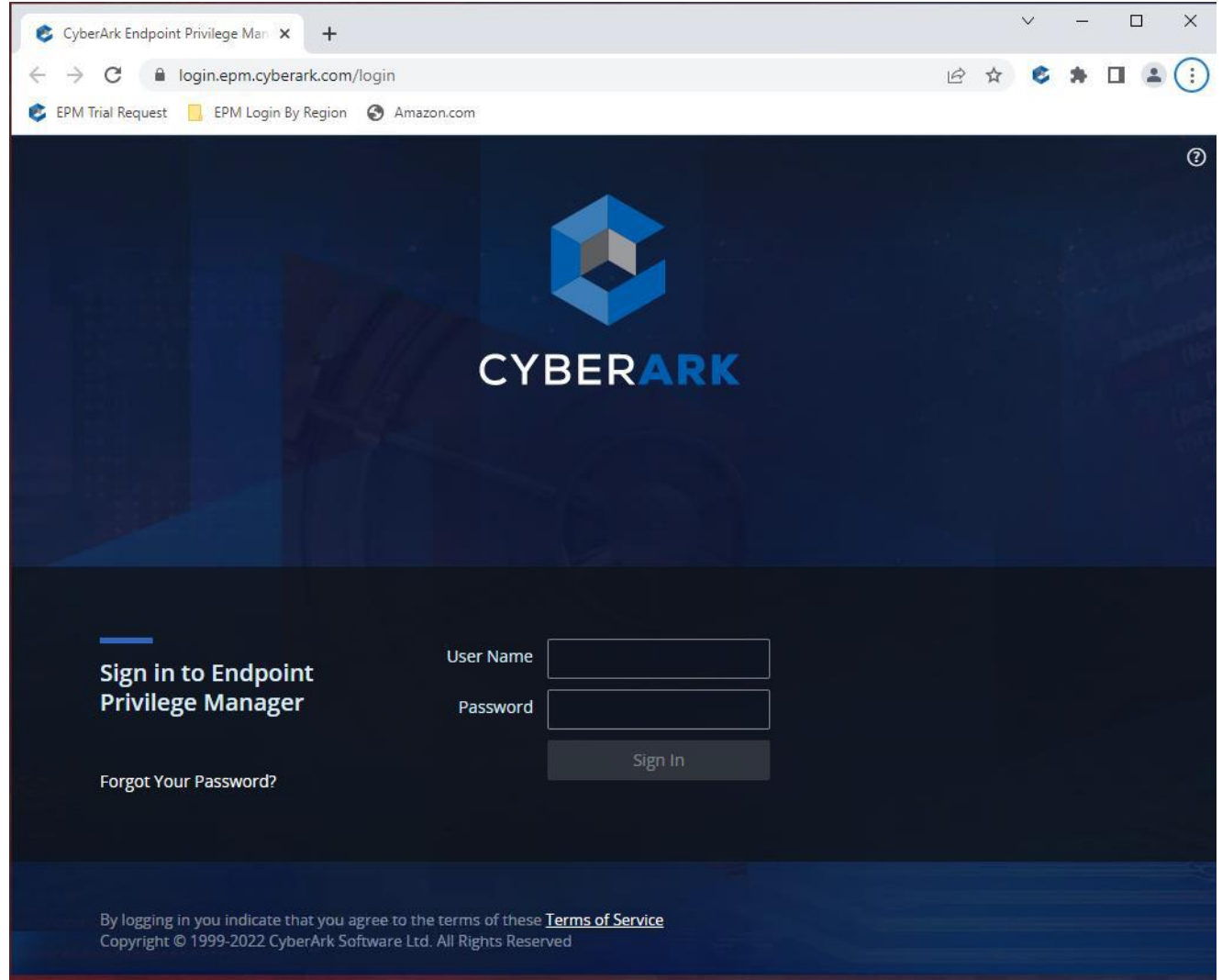
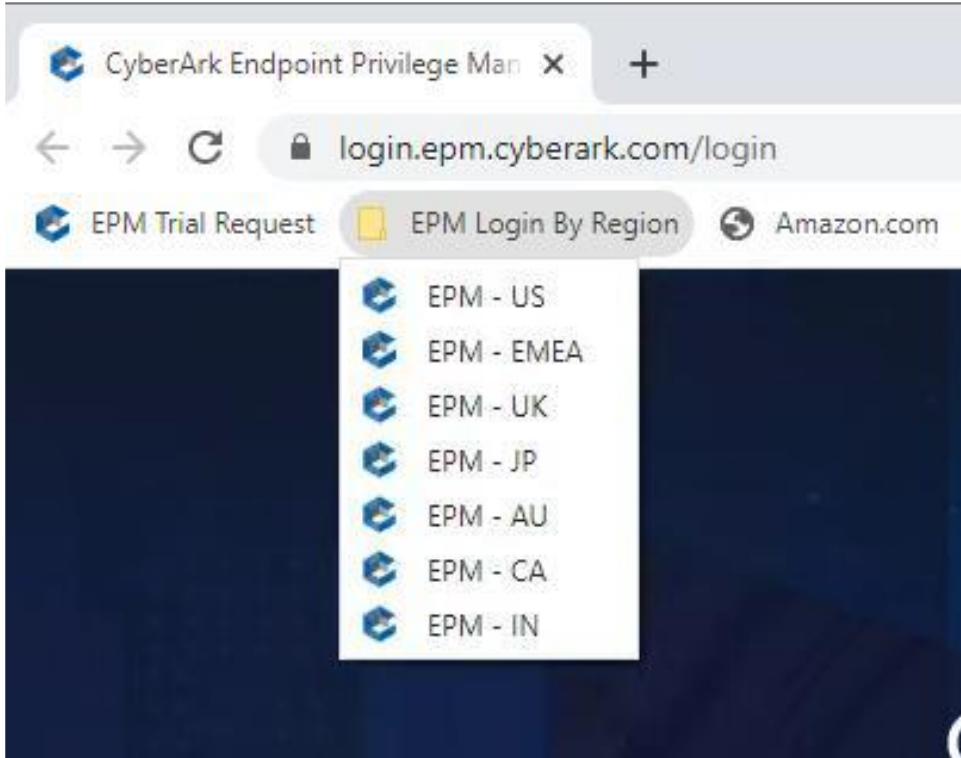


By creating the account request you indicate that you agree to the terms of these [Terms of Service](#)

Create Account

*Upon clicking 'Create Account' it may take a moment to continue
It's building the instance*

AUTHENTICATING TO THE EPM PORTAL



EMAIL VERIFICATION

- Once verified, from within the VM login to the EPM portal
- Use the bookmarks tab to select the correct instance

CyberArk EPM Email Verification External Inbox x

noreplyEPM@cyberark.com

to

Hello,

You were recently requested to validate your CyberArk Endpoint Privilege Manager email. Please click the following link to start the verification process:

[Cyberark email verification link.](#)

This request was made at 9/13/2023 4:59:22 PM (UTC).

For security reasons, the verification link is active for one entry only and will expire in 10 minutes.

If you did not initiate an email verification process, please contact your CyberArk EPM Administrator(s) immediately.

Sincerely yours,

CyberArk EPM Administrator.

Please do not reply to this message. Mail sent to this address cannot be answered.

ⓘ For enhanced user security, email verification is required. A verification mail was sent to you. If you do not receive the mail, contact your Administrator

Sign in to Endpoint Privilege Manager

User Name

Password

Sign In

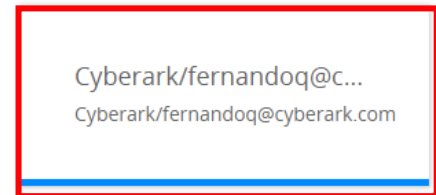
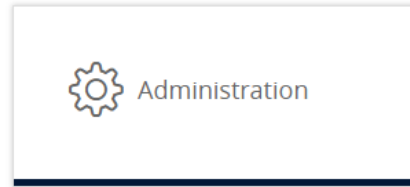
[Forgot Your Password?](#)

By logging in you indicate that you agree to the terms of these [Terms of Service](#)
Copyright © 1999-2023 CyberArk Software Ltd. All Rights Reserved

EPM Login By Region

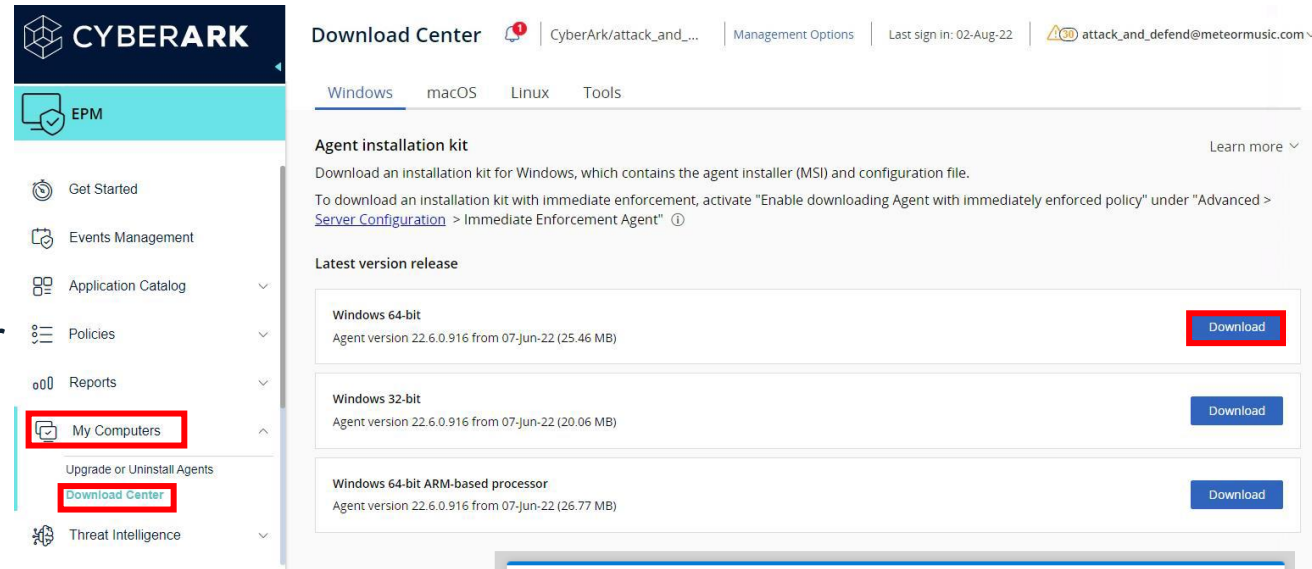
- EPM - US
- EPM - EMEA
- EPM - UK
- EPM - JP
- EPM - AU
- EPM - CA
- EPM - IN

AGENT INSTALL

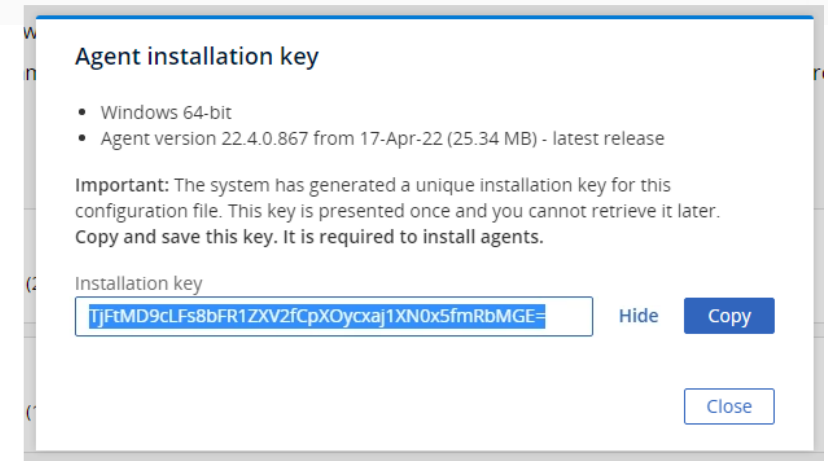
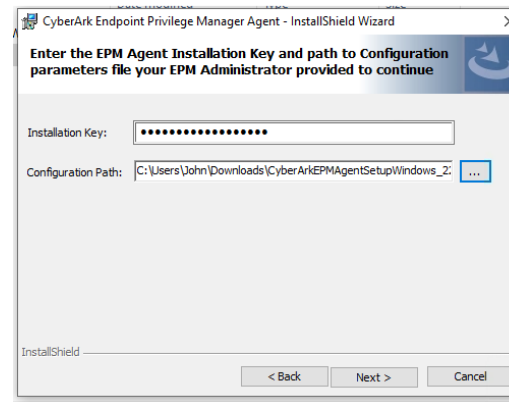


- Select the platform /cyberark/<<YourTenant>>
- Navigate to My Computers\Download Center
- Download the 64-bit platform agent

- Copy the installation key to your VM's clipboard for later use. Extract/Unzip the CyberArkEPMASetupWindows.zip file
There will be 2 files, the MSI and a .config file



- Install the MSI file.
 - Paste the installation key from the clipboard and select the config file



DOWNLOAD THE MSI TO THE LAB ENVIRONMENT
DO NOT INSTALL THE AGENT ON YOUR LOCAL COMPUTER

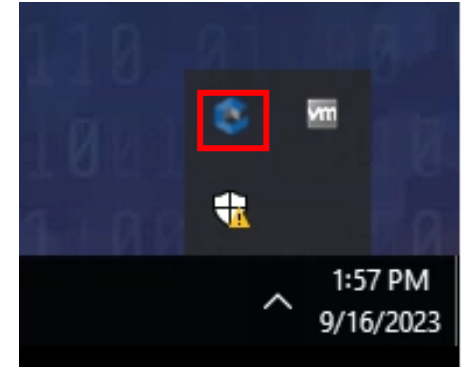
DOWNLOAD THE MSI TO THE LAB ENVIRONMENT



DO NOT INSTALL THE AGENT ON YOUR LOCAL COMPUTER

AGENT INSTALL CONFIRMATION

- Click Complete_Agent_Install.bat
The system will reboot
- Upon successful reboot, look in the CyberArk logo in the system tray/notification area
It should automatically log you on as John
- This confirms the agent is properly installed



At this point, the agent is installed and running
You can proceed to any of the labs.



ATTACK + DEFEND

LAB 1 – RANSOMWARE PROTECTION

Protect from ransomware compromise

LAB 1

RANSOMWARE PROTECTION

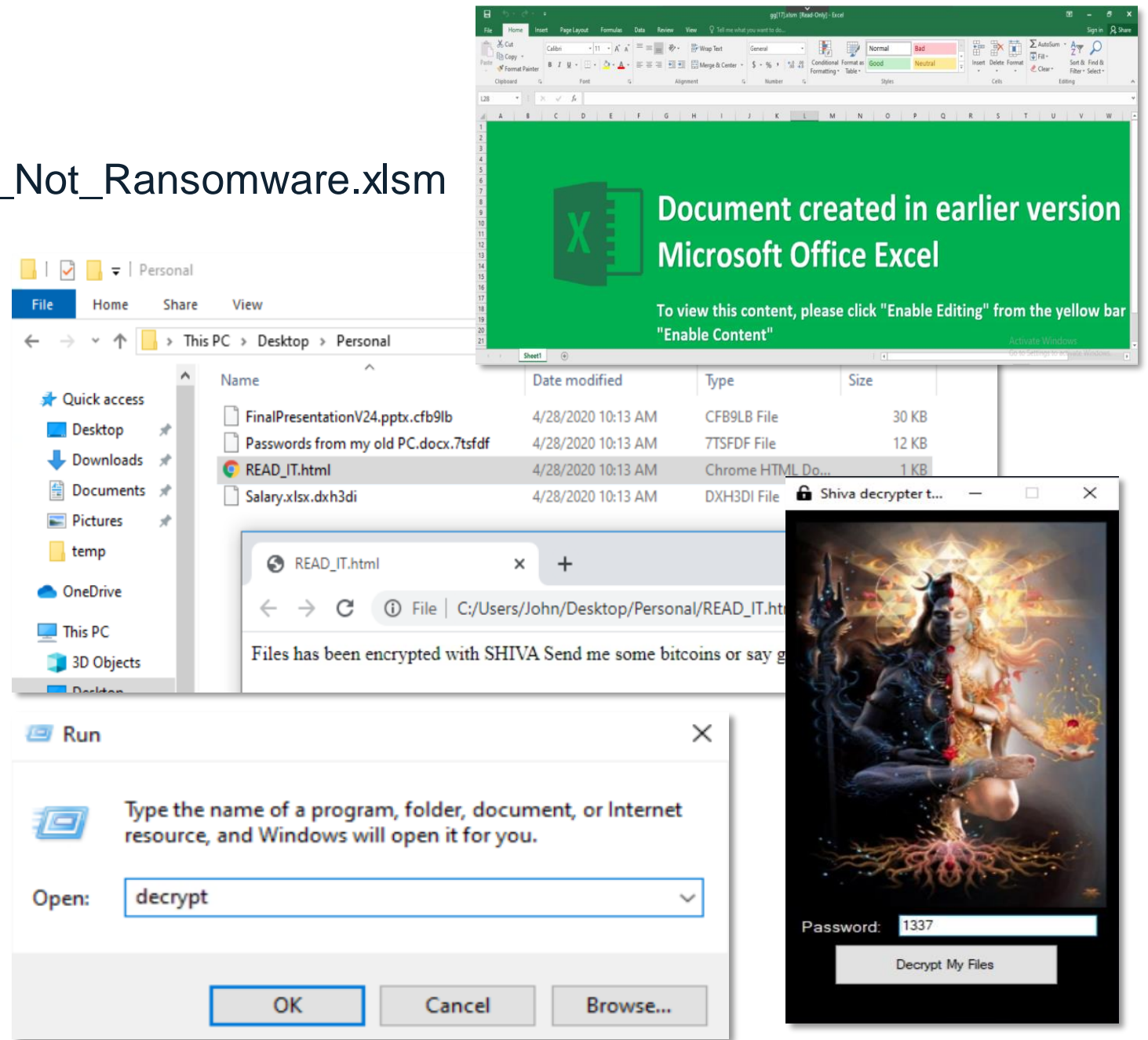
- Open an infected file
- Survey the damage
- Reset and decrypt
- Create Ransomware policy
- Replay attack scenario

EXECUTING RANSOMWARE

- Open \Lab 1 – Ransomware\Totally_Not_Ransomware.xlsm
(OPEN THE FILE ONLY ONCE)

- Go back to Personal Folder
- Read the HTML file
- Oooops ! 

- Run \Lab 1 – Ransomware\decrypt.bat
- The password to decrypt: 1337
- Check your personal folder



Document created in earlier version
Microsoft Office Excel

To view this content, please click "Enable Editing" from the yellow bar
"Enable Content"

Name	Date modified	Type	Size
FinalPresentationV24.pptx.cfb9lb	4/28/2020 10:13 AM	CFB9LB File	30 KB
Passwords from my old PC.docx.7tsfdf	4/28/2020 10:13 AM	7TSFDF File	12 KB
READ_IT.html	4/28/2020 10:13 AM	Chrome HTML Do...	1 KB
Salary.xlsx.dhx3di	4/28/2020 10:13 AM	DXH3DI File	

Files has been encrypted with SHIVA Send me some bitcoins or say g...

Run

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open:

OK Cancel Browse...

Shiva decrypter t...

Password:

Decrypt My Files

ENABLE RANSOMWARE PROTECTION

- On the left menu, expand Policies by clicking ^
- Select Default Policies
- Set 'Protect against ransomware' to **Restrict**
- Click Yes to confirm the policy

The screenshot displays the 'Policies' section in the Microsoft Defender Security Center. The 'Default Policies' section is expanded, showing several policy settings. The 'Protect against ransomware' policy is highlighted, with the 'Restrict' mode selected. A confirmation dialog box is open, asking 'Set policy to Restrict mode?' and providing detailed information about the policy's function and scope. The 'Yes' button in the dialog is highlighted.

Policies

- Default Policies
- Policy Recommendations
- Application Groups
- End-user UI (preview only)

Detect privileged unhandled applications | Windows macOS Linux | Off On

Protect against ransomware | Windows | Off Detect **Restrict** Edit

Control unhandled applications | Off Detect Restrict Block

Control unhandled applications | Off Detect Restrict

Set policy to Restrict mode?

Set the "Protect against ransomware" policy to Restrict mode (Windows only).

Restrict unauthorized access to sensitive files by unhandled applications to prevent ransomware attacks. This policy does not block or elevate unhandled applications.

When active, these settings are also applied to computers and users targeted by the "Control unhandled applications downloaded from the Internet" and "Control unhandled applications" policies.

When the "Detect privileged unhandled applications" policy is active, it is also applied to computers and users targeted by this policy.

Cancel Edit policy settings **Yes**





REATTEMPTING THE ATTACK

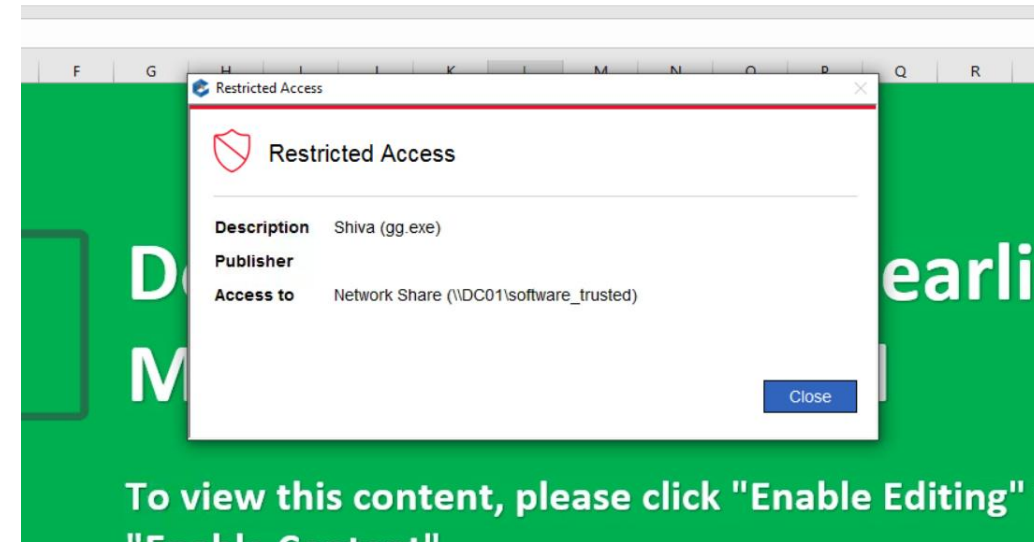
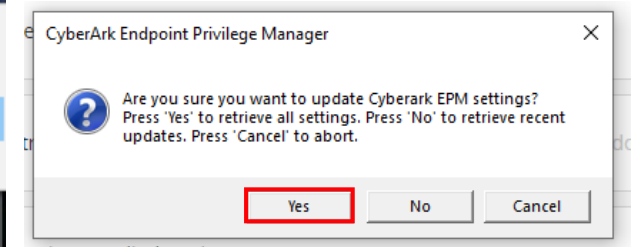
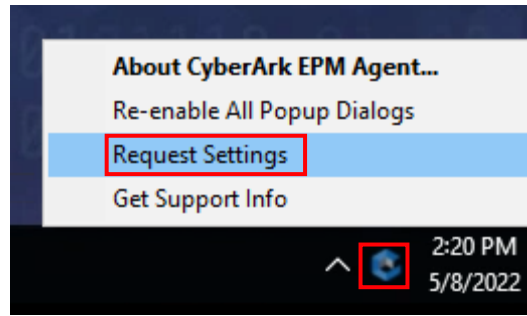
RESET POLICY

(You'll be doing this a lot throughout the lab exercises)

- Right-click on the CyberArk EPM icon in the system tray and select 'Request Settings'.
- Click Yes to confirm.
- Open \Lab 1 – Ransomware\Totally_Not_Ransomware.xlsxm **(PLEASE OPEN THE FILE ONLY ONCE)**
- Click Close for the Restricted Access Popups

- Go back to Personal Folder
- Open your personal files

-  FinalPresentationV24.pptx
-  MyInfo.docx
-  Passwords from my old PC.docx
-  Salary.xlsx





ATTACK + DEFEND

LAB 2 – INTERNET DOWNLOADS

Configure policy limit access for applications downloaded from the internet

LAB 2

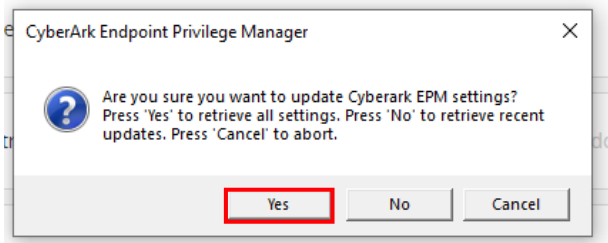
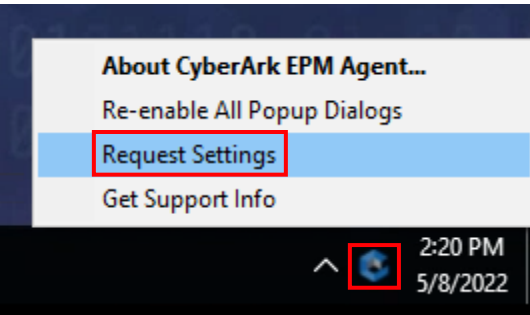
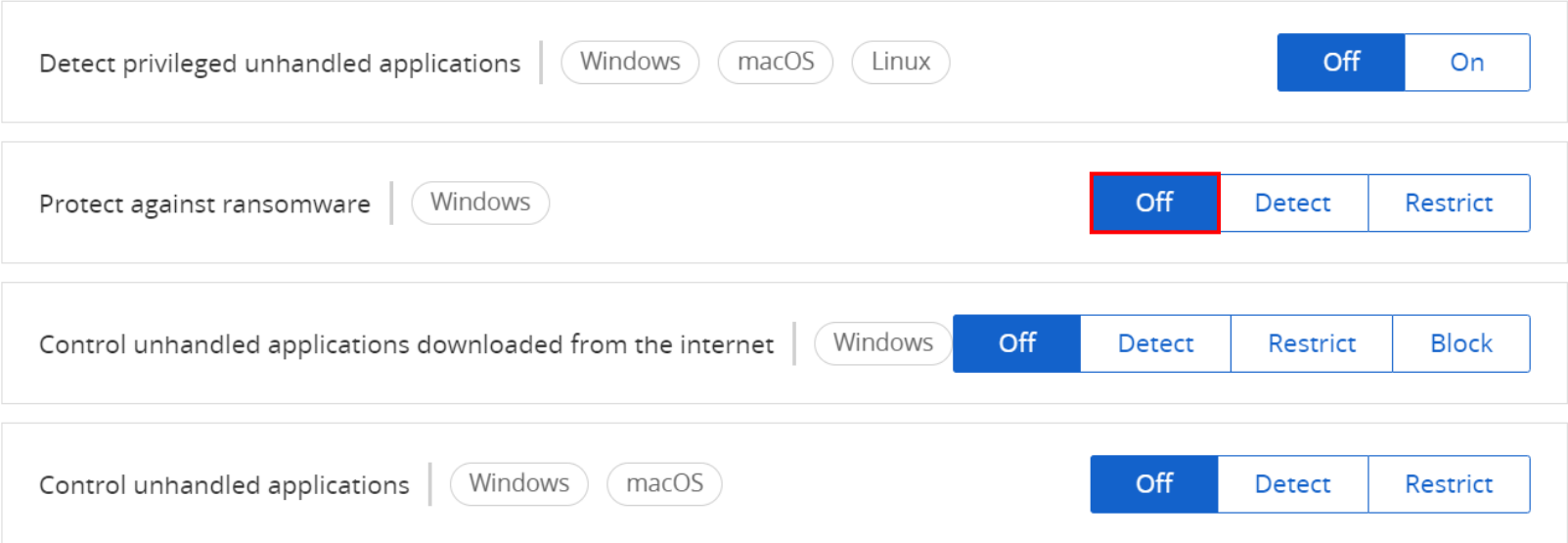
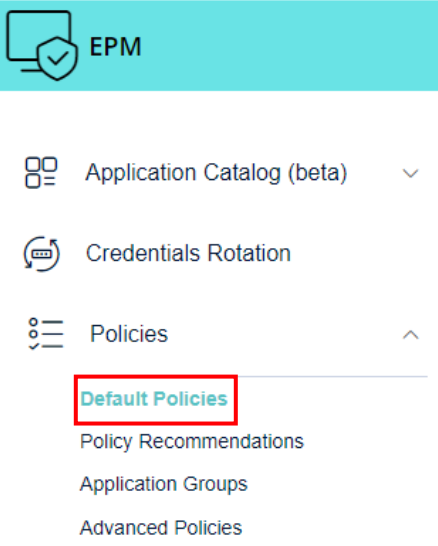
INTERNET DOWNLOADS

- Download and run malicious program
- Enable block policy
- Replay attack scenario

RESETTING THE CONFIGURATIONS

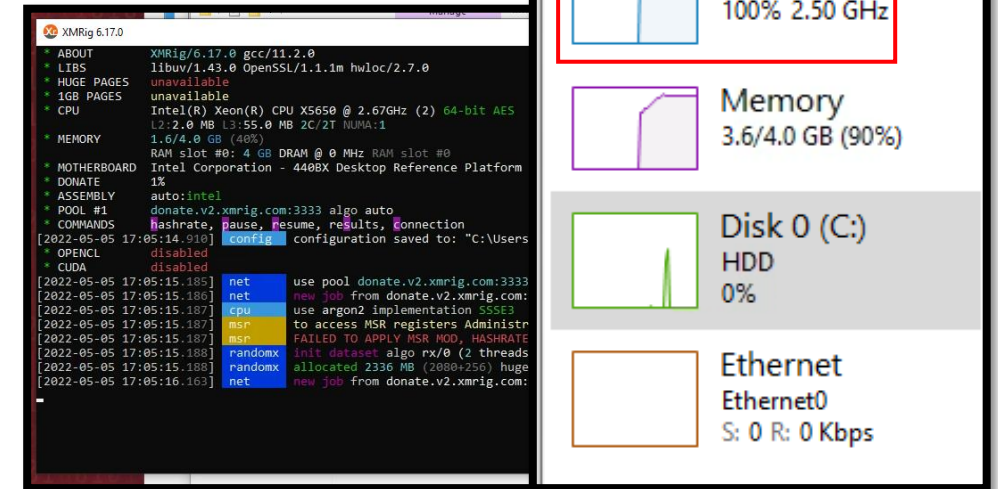
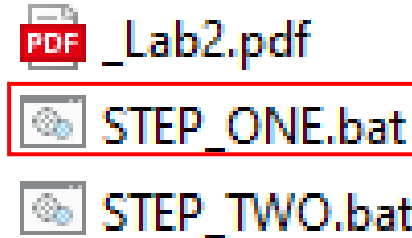
Some of the policies overlap. For labs to properly work correctly, it's important to reset the policies.

- Open the Default policies page
- Under Privilege Management, set all settings to Off
- Request Settings via agent



LAUNCHING CRYPTOMINER

- From the 'Lab 2 - Internet Downloads' folder, click STEP_ONE.bat
 - This will download and launch a cryptominer by the name of xmrig.exe and open the task manager
- Click on the Performance tab and monitor the system processes (*CPU performance should start to run at 100%*)
- **Close the window or press Ctrl+C to stop mining**



PREVENTING DOWNLOADED APPLICATIONS TO RUN

- Open the Default policies page
- Set 'Control unhandled applications downloaded from the internet' to Block. Click yes to confirm

The screenshot shows the EPM console interface. On the left, a navigation pane includes 'EPM', 'Application Catalog (beta)', 'Credentials Rotation', and 'Policies'. Under 'Policies', 'Default Policies' is highlighted with a red box. The main area displays four policy settings:

- 'Detect privileged unhandled applications' with platform filters 'Windows', 'macOS', and 'Linux', and a toggle set to 'Off'.
- 'Protect against ransomware' with a 'Windows' filter and a toggle set to 'Off'.
- 'Control unhandled applications downloaded from the internet' with a 'Windows' filter and a dropdown menu set to 'Block' (highlighted with a red box). Other options are 'Off', 'Detect', 'Restrict', and 'Edit'.
- 'Control unhandled applications' with platform filters 'Windows' and 'macOS', and a toggle set to 'Off'.

The dialog box contains the following text:

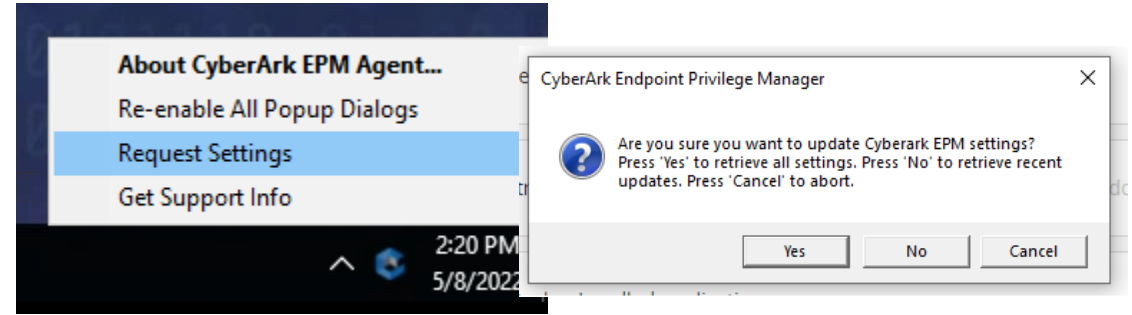
Set the "Control unhandled applications downloaded from the internet" policy to Block mode (Windows only).

Block unhandled application files that are downloaded from the internet. After this policy is set to Block mode, unhandled applications running on target computers are silently terminated.

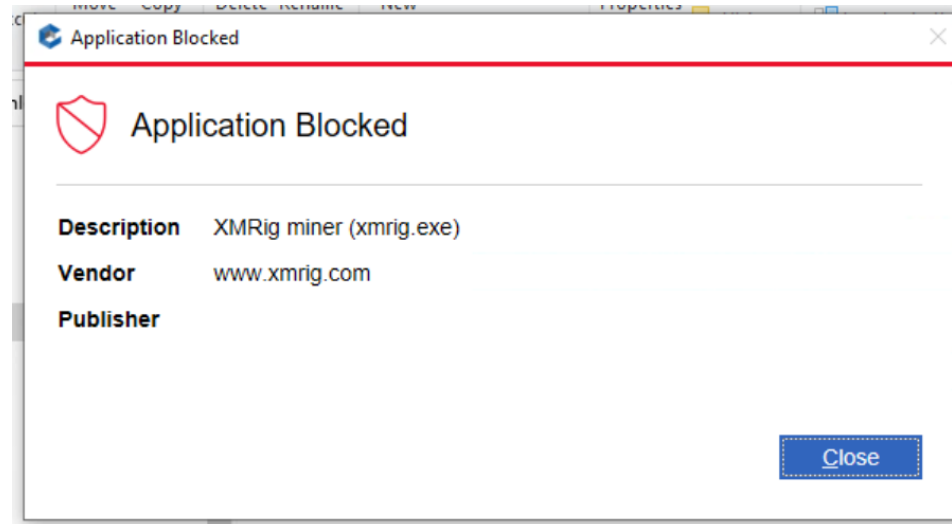
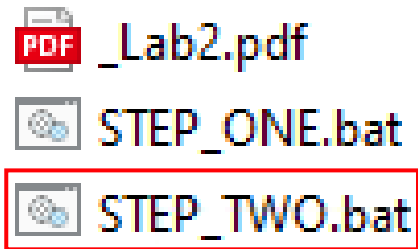
When the "Detect privileged unhandled applications" or "Protect against ransomware" policies are active, they are also applied to computers and users targeted by this policy.

Buttons at the bottom: 'Cancel', 'Edit policy settings', and 'Yes' (highlighted with a red box).

LAUNCHING CRYPTOMINER (AGAIN)



- Request latest settings/policy from EPM
- From the 'Lab 2 - Internet Downloads' folder, click STEP_TWO.bat
- This will re-download xmrig.exe, execute the file, and open the task manager
- Note the results





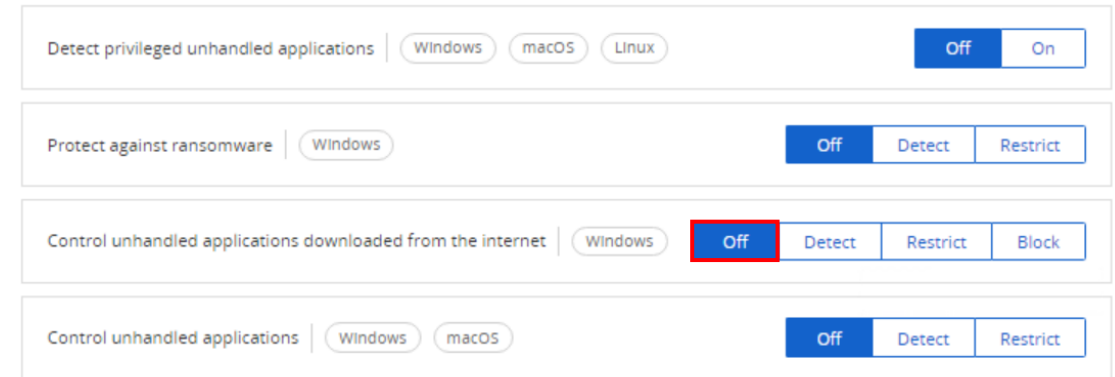
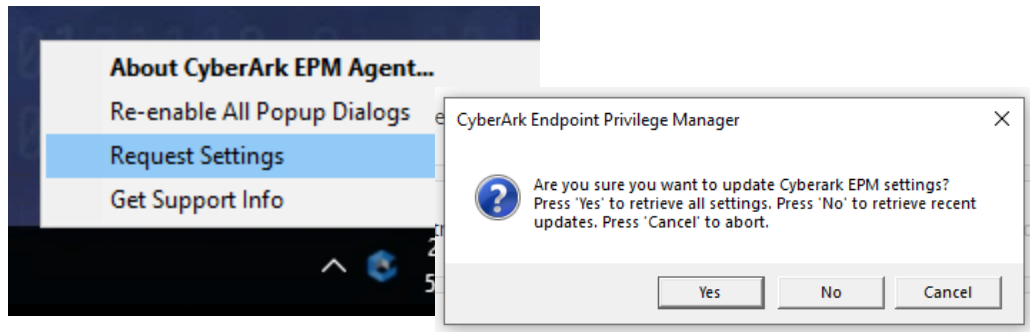
ATTACK + DEFEND

LAB 3 – TRUSTED PUBLISHERS

Setting up policies for Application Control

RESET POLICY

- Go back to Policies...Default Policies and set 'Control unhandled applications downloaded from the internet' back to Off.
- Refresh the EPM policy on the agent.



EXECUTING UNKNOWN FILES

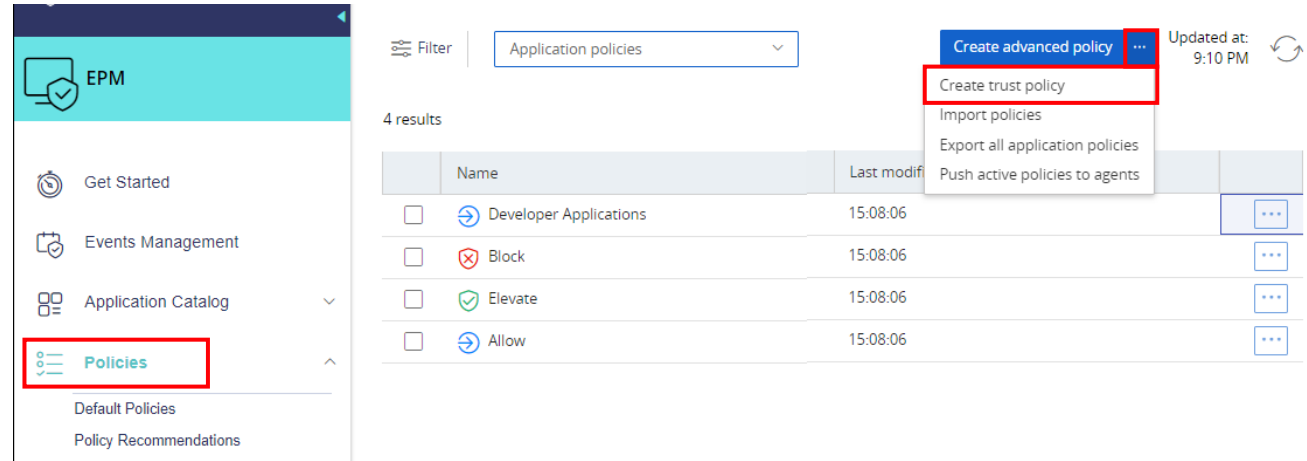
- From the 'Lab 3 – Trusted Publishers' folder, double-click and run 'vlc-3.0.09-win64.exe'
Turn up the volume and enjoy! 🎵

This is why you don't want end users to download and install untrusted files!

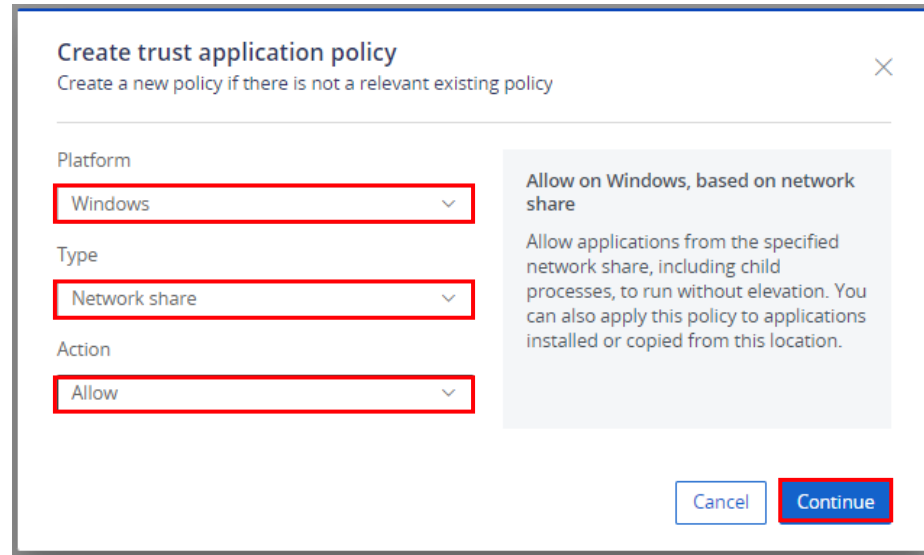


CREATING A TRUSTED SOURCE POLICY

- Click on Policies
- Expand the menu under 'Create advanced policy'
- Select Create trust policy



- Set Platform to Windows.
- Set Type to Network share.
- Set Action to Allow
- Press Continue

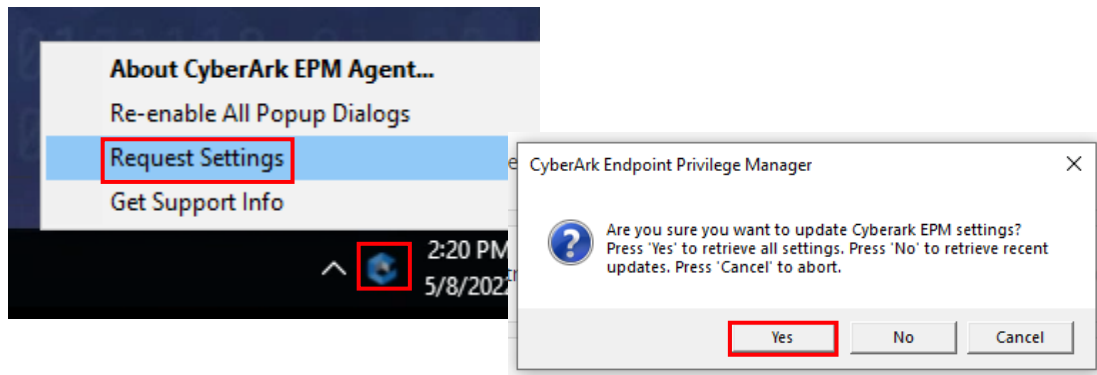


CREATING A TRUSTED SOURCE POLICY

- Set the Specific Network share to \\EPMWKS01\ITShare and the name to ITShare
- Click Create and click Yes to confirm.

LOCKING IT DOWN (AGAIN)

- Go back to Policies...Default Policies and set 'Control unhandled applications downloaded from the internet' back to Block.
- Refresh the EPM policy on the agent.



Details

Trusted network share

Specific network s... with subdirectories

Name

Description (optional)

Detect privileged unhandled applications | Windows macOS Linux

Protect against ransomware | Windows

Control unhandled applications downloaded from the internet | Windows

Control unhandled applications | Windows macOS

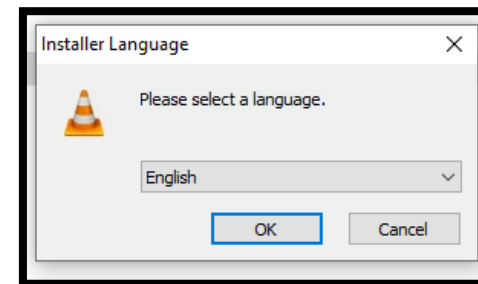
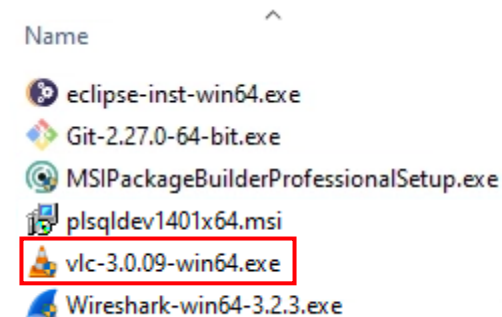
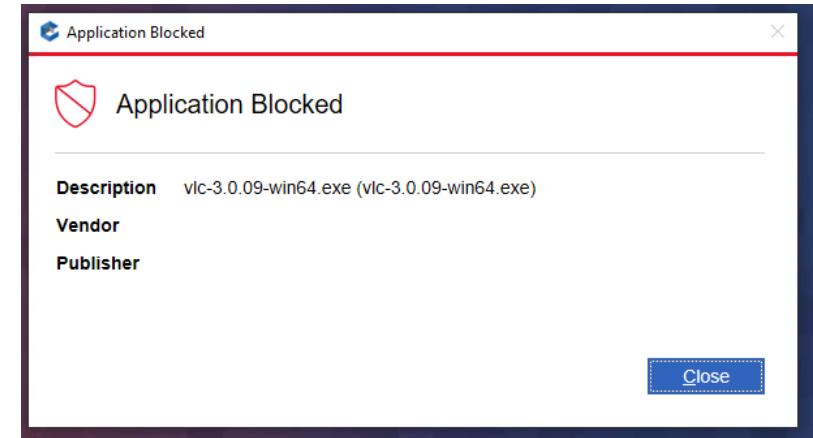
TESTING TRUSTED SOURCE POLICY

- From the 'Lab 3 – Trusted Publishers' folder, double-click and run 'vlc-3.0.09-win64.exe'
- Observe the result

- Double click on the ITShare shortcut or go to //EPMWKS01\ITShare directly.



- Double-click and run 'vlc-3.0.09-win64.exe' from the ITShare folder.
- Observe the result.





ATTACK + DEFEND

LAB 4 – CREDENTIAL THEFT PROTECTION

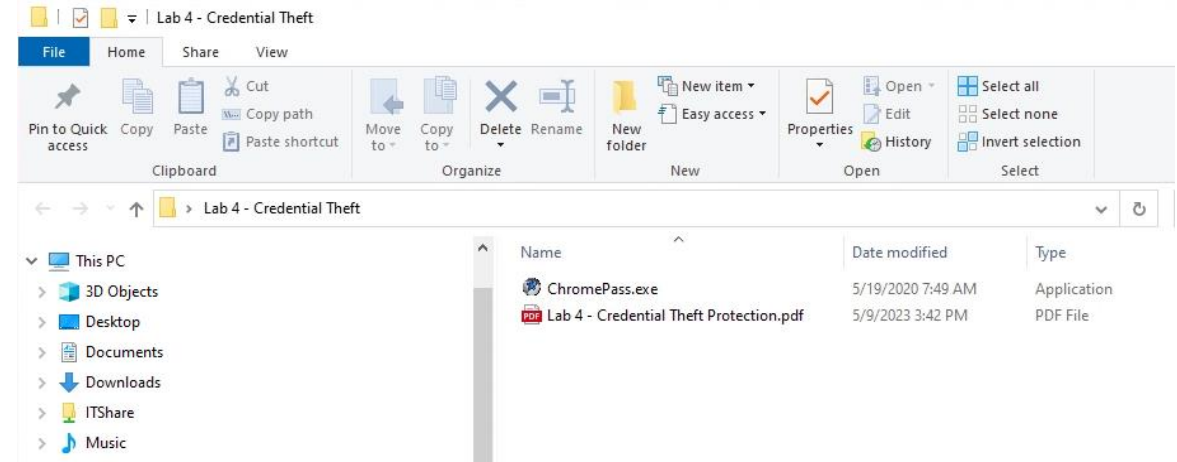
Protected applications from credential theft

LAB 3 CREDENTIAL THEFT PROTECTION

- Run Chromepass
- See the credentials in plain text
- Create a Credential Theft Protection policy
- Replay attack scenario

GETTING STARTED WITH CHROMEPASS

- Open the 'Lab 4 – Credential Theft' folder on the desktop
- Double click on ChromePass.exe
- The utility launch and credentials will be seen immediately



Origin URL	Action URL	User Name Field	Password Field	User Name	Password	Created Time	Password Stre...
https://cyberark.smartfile.com/ftp/login/	https://cyberark.smartfile.com/ftp/login/	login	password	cybrdemo@outlo...	CyberArk12345!	12/29/2019 5:37:50...	Very Strong
https://epmsvr01.cybr.com/						12/14/2019 11:42:4...	Very Weak
https://github.com/login	https://github.com/session	login	password	GitHubBub	SuperSecretP@ssw...	12/30/2019 12:42:1...	Very Strong
https://login.epm.cyberark.com/						4/26/2020 7:13:40 ...	Very Weak
https://support.cyberark.com/						4/26/2020 7:10:18 ...	Very Weak
https://www.hawaiianairlines.com/my-a...	https://www.hawaiianairlines.com/my-acc...	UserName	Password	AlohaUser	ShakaBrahLOL	12/30/2019 12:41:1...	Strong
https://www.reddit.com/login/	https://www.reddit.com/login	username	password	someuser@compa...	@P@ssw0rdgoesh...	12/30/2019 12:39:0...	Very Strong

ENABLE THREAT PROTECTION POLICIES

- Drop down Policies
- Expand Application Policies and select Open Privilege threat protection policies
- Expand on Browsers Stored Credential Theft
- Set Chrome Credentials Theft to Block

CYBERARK

EPM

Get Started

Events Management

Application Catalog

Policies

Default Policies

Policies

Filter: Application policies

Application policies

Credentials rotation policies

Privilege threat protection policies

Script distribution policies

User policies

Policy name	Status	Last modified	Agent version
Browsers Stored Credentials T...	Off		
Chrome Credentials Theft	Off		6.0 and above
Chromium Credential Theft (Les...	Off		
Cookies Theft From Web Brows...	Off		
Firefox Credentials Theft	Off		6.0 and above

Set to block

Set to detect

Edit

Set policy to block

This setting blocks attempts for credentials theft.

Set the Chromium Credential Theft (Less Common Browsers) (Beta) policy to "Block"?

Cancel Yes

CREDENTIAL HARVEST RETRY

- Run ChromePass again
 - It might take a minute for the policy to push*
 - Try a few times if necessary*
- What is visible now?
 - NOTHING!

File Edit View Help

Origin URL	Action URL





ATTACK + DEFEND

LAB 5 – POLICY IMPORT

Making your job easy.

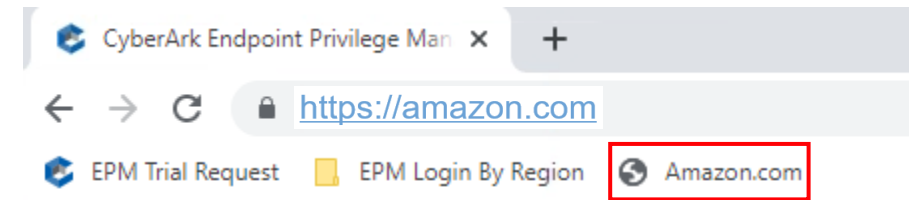
LAB 5

POLICY IMPORT

- View DNS Poisoned Site
- Attempt to edit HOSTS file
- Import Policy
- Edit HOSTS file

HOSTS FILE POISONED

- Click on the Amazon.com shortcut, bookmark, or go to <https://amazon.com> (if you type in the url, note it's http vs https)
- Notice anything different?
- Someone has poisoned the local HOSTS file to re-direct the domain name
- From within the 'Lab 5 – Policy Import' folder, open 'HOSTS – shortcut' with Notepad
- Attempt to edit and save the file
 - You can't!
 - You are unable to do so as the current user is not a local administrator



```
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10      x.acme.com             # x client host

# localhost name resolution is handled within DNS itself.
#       127.0.0.1        localhost
#       ::1              localhost

10.0.0.35                www.amazon.com           amazon.com
```

IMPORT A POLICY ALLOWING HOSTS FILE EDITING

- Click on Policies, Select User Policies from the drop-down menu
- Expand the Create user policy and select 'Import policies'
- Select the Allow_HOSTS_edit.epmp file within the 'Lab 5 – Policy Import' folder
Click Ok

The screenshot shows the CyberArk EPM interface. On the left, the 'Policies' menu item is highlighted with a red box. The main area displays the 'Policies' section with a filter set to 'User policies'. A dropdown menu is open, showing 'Import policies' highlighted in red. A modal dialog titled 'Policies import' is displayed, showing the file 'Allow_HOSTS_edit.epmp' selected in the 'Import file' field, with 'Ok' highlighted in red.

CYBERARK

EPM

Get Started

Events Management

Application Catalog

Policies

Policies

Filter: User policies

Create user policy ... Updated at: 9:22 PM

Import policies

Export all user policies

Push active policies to agents

Apply

0 results

Policies import

Import policies from a EPMP file (EPM proprietary format).

Important: Import file may include policies of any category and type.

Import file

Allow_HOSTS_edit.epmp

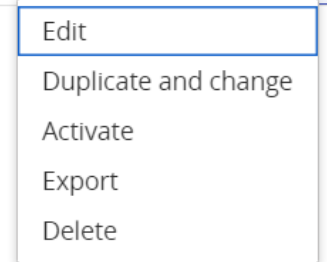
Browse...

Cancel

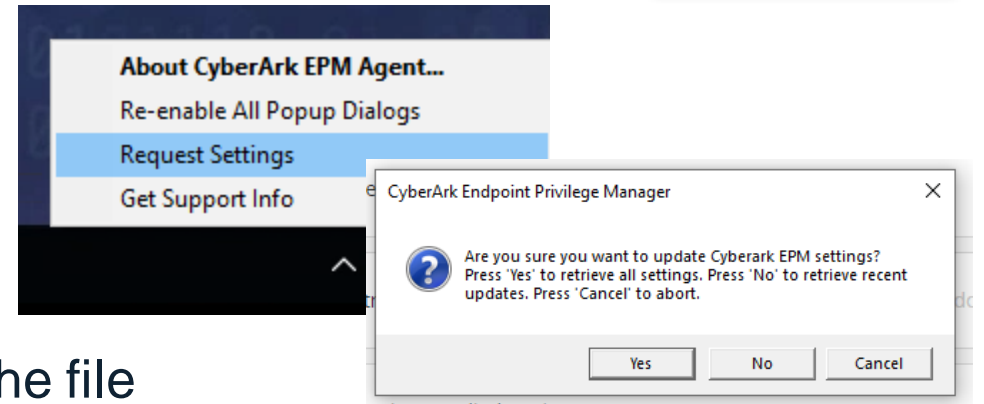
Ok

POLICY ACTIVATION

	Name	Type	Status	Computers	Order of precedence	Last modified ↓	
<input type="checkbox"/>	[IMPORTED] Edit Host File	File system and registry ac...	Inactive	All	450	22:45:13	...



- Once the policy has been imported, you need to activate it
Click on the ... to expand the menu and select 'Activate'
- Click Yes to Activate the policy
- Request Settings from the agent
- Reopen the HOSTS file
- Remove line 24 or comment out the line and save the file
- Launch Amazon.com again



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