ConfigureDefender Help (ver. 4.0.1.1)

ConfigureDefender works on Windows 10/11 - earlier versions are not supported. If the user upgraded the system from Windows 8 or 8.1 and it is still possible to downgrade while preserving user settings, then the application shows the alert and exits. This prevents transferring the settings (made by ConfigureDefender) from Windows 10 to previous versions when the user forgot to restore Defender default settings before downgrading.

Most settings available in ConfigureDefender are related to Microsoft Defender real-time protection and work only when real-time protection is enabled. After changing the settings via ConfigureDefender, the Windows restart is required.

Important: *These two settings (below) should* ***never*** *be changed because important features like "Block at First Sight" and "Cloud Protection Level" will not work properly:*

- "Cloud-delivered Protection" = "ON"
- "Automatic Sample Submission" = "Send" or "Send All"

TAMPER PROTECTION

The below settings cannot be disabled while Microsoft Defender Tamper Protection is enabled:

- Behavior Monitoring = ON
- Scan all downloaded files and attachments = ON
- Script Scanning = ON

I. ConfigureDefender Protection Levels (pre-defined settings):

"DEFAULT"
Microsoft Defender's default configuration. It is applied by default when installing the Windows system and provides basic antivirus protection. The <DEFAULT> green button can quickly revert the advanced ConfigureDefender settings to Windows defaults.

"HIGH"
Microsoft Defender's enhanced configuration. It enables many Exploit Guard features like Network Protection and most ASR rules. Four ASR rules and Controlled Folder Access (Ransomware protection) are disabled to avoid false positives. That is a recommended configuration for most users. It provides significantly increased security.

"INTERACTIVE"
That configuration is similar to the HIGH Protection Level, but all ASR rules are set to "Warn" if possible. Some rules disabled in the HIGH Protection Level are now activated, so the protection is stronger but can generate more false-positive alarms. This setup is not recommended for children or casual users because the "Warn" setting allows the user to unblock the suspicious file easily.

"MAX"
The most secure protection level. It enables all advanced (hidden) Microsoft Defender features. The intention of using the "MAX" setup is to protect children and casual users. It can also be recommended (with some adjustments) to maximize protection in an insecure environment. This protection level usually generates more false positives and may require more user knowledge or skill.

II. ConfigureDefender custom settings:

You may customize your configuration by choosing one of the three protection levels and changing individual features.

How to apply the settings:

Select one of the Protection Levels or custom configuration, press the "Refresh" green button, and let ConfigureDefender confirm the changes. ConfigureDefender will alert you if any of your changes have been blocked. **Reboot to apply the chosen protection.**

Audit mode:

Many ConfigureDefender options can be set to "Audit". In this setting, Microsoft Defender does not block processes. lt only logs events and warns about processes that would otherwise be blocked with the "ON" setting. This feature is available for users to check for software incompatibilities with applied Defender's settings. Users can avoid incompatibilities by adding software exclusions for ASR rules and Controlled Folder Access.

Warn mode:

It is similar to the "ON" setting but additionally, users see a dialog box that offers an option to unblock the content. The user should **retry the action** to complete the operation. When a user unblocks content, it remains unblocked for 24 hours, and then the blocking resumes. Warn mode is not supported on devices running older versions of Windows. In those cases, ASR rules configured to run in Warn mode will run in block mode (the "ON" setting).

<Defender Security Log> button:

It can gather the last 300 entries from the Microsoft Defender Antivirus events. These entries are reformated and displayed in the notepad.

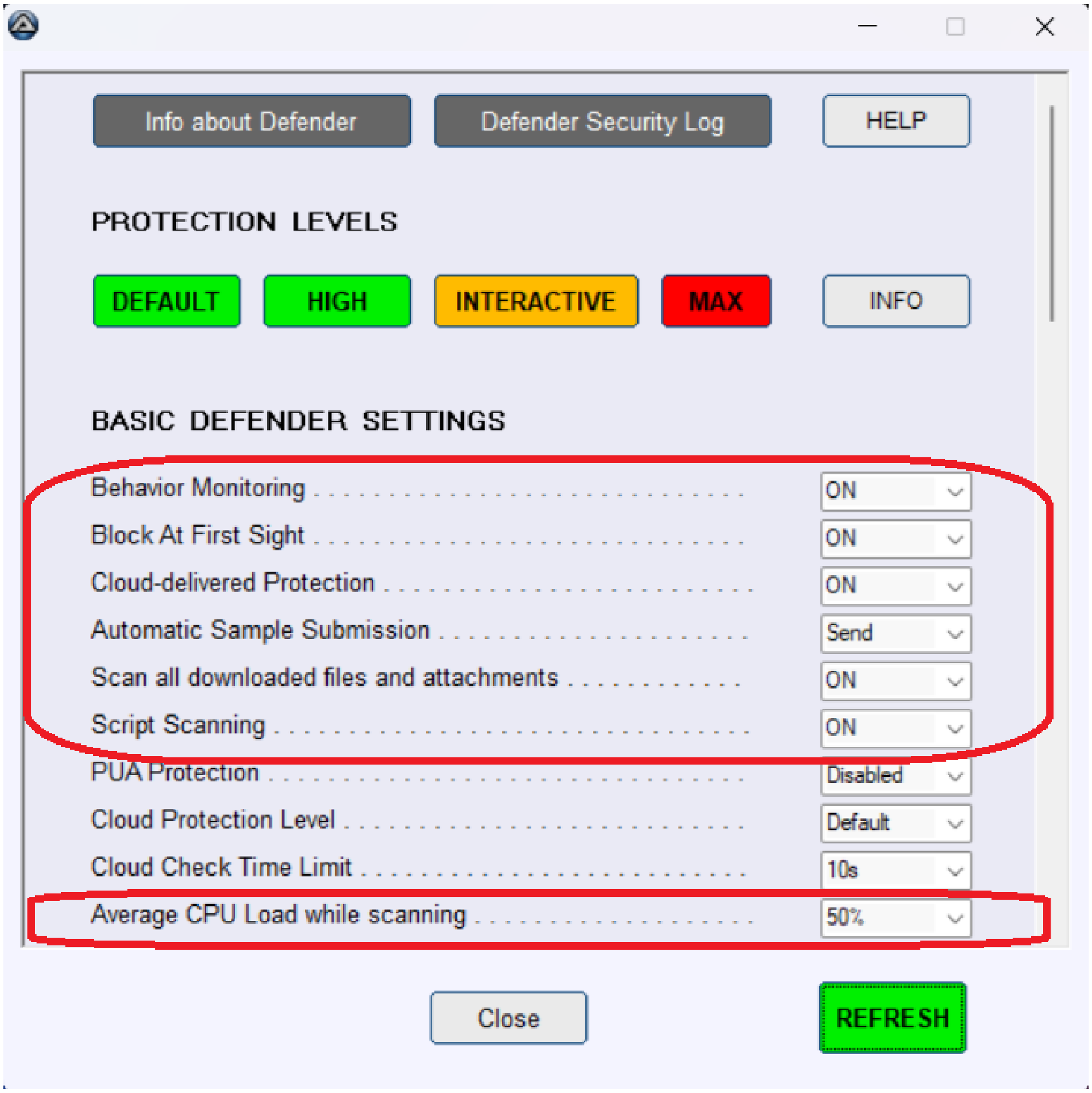
The following event IDs are included: 1006, 1008, 1015, 1116, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 3002, 5001, 5004, 5008, 5010, and 5012. Inspecting the log can be useful when a process or file execution has been blocked by the Defender Exploit Guard.

III. Settings related to different Protection Levels

The below settings are the same for DEFAULT, HIGH, INTERACTIVE, and MAX Protection Levels:

BASIC DEFENDER SETTINGS

- Behavior Monitoring = ON
- Block At First Sight = ON
- Cloud-delivered Protection = ON
- Automatic Sample Submission = Send
- Scan all downloaded files and attachments = ON
- Script Scanning = ON
- Average CPU load while scanning = 50%



Behavior Monitoring . . . . ON

Block At First Sight . . . . ON

Cloud-delivered Protection . . . . ON

Automatic Sample Submission . . . . Send

Scan all downloaded files and attachments . . . . ON

Script Scanning . . . . ON

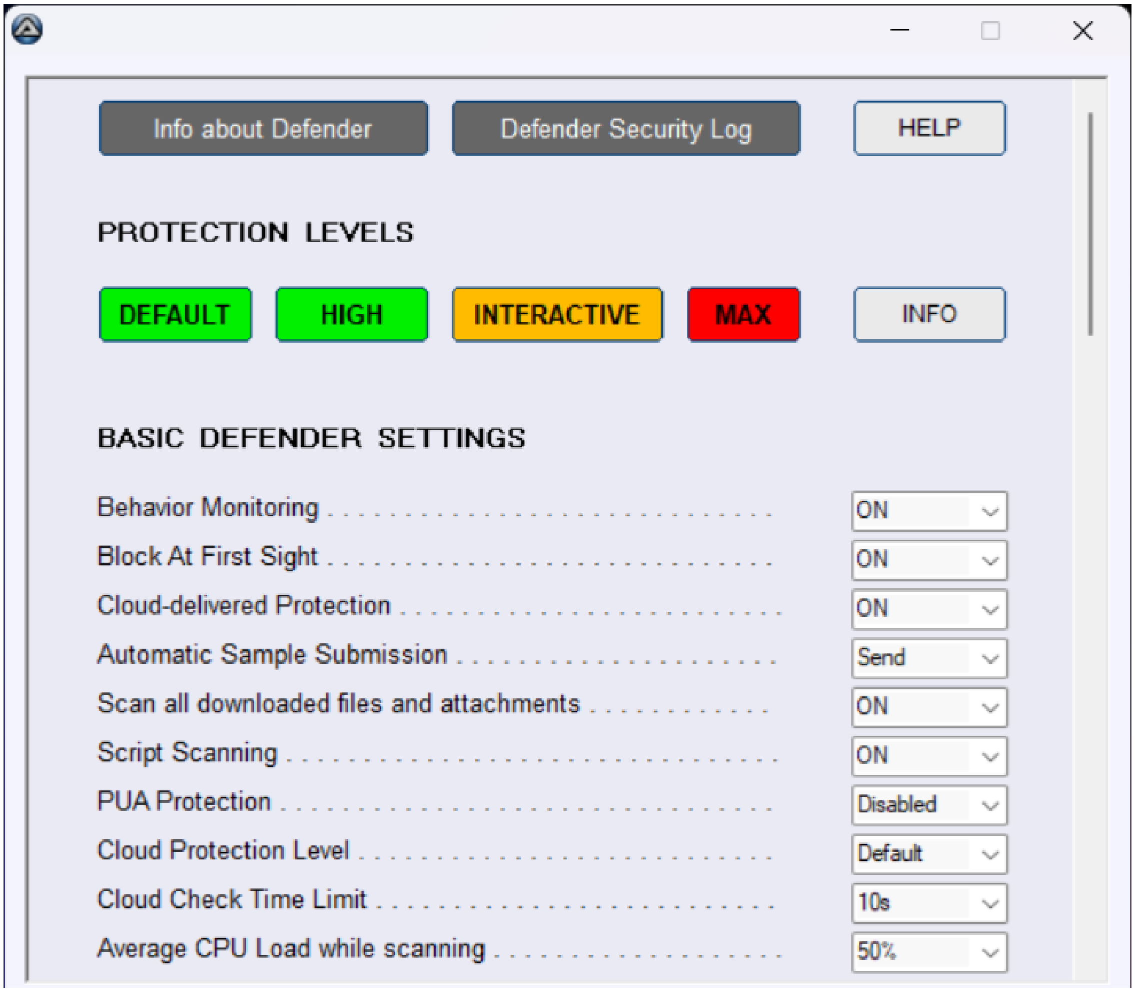
PUA Protection . . . . Disabled

Cloud Protection Level . . . . Default

Cloud Check Time Limit 10s

Average CPU Load while scanning 50%

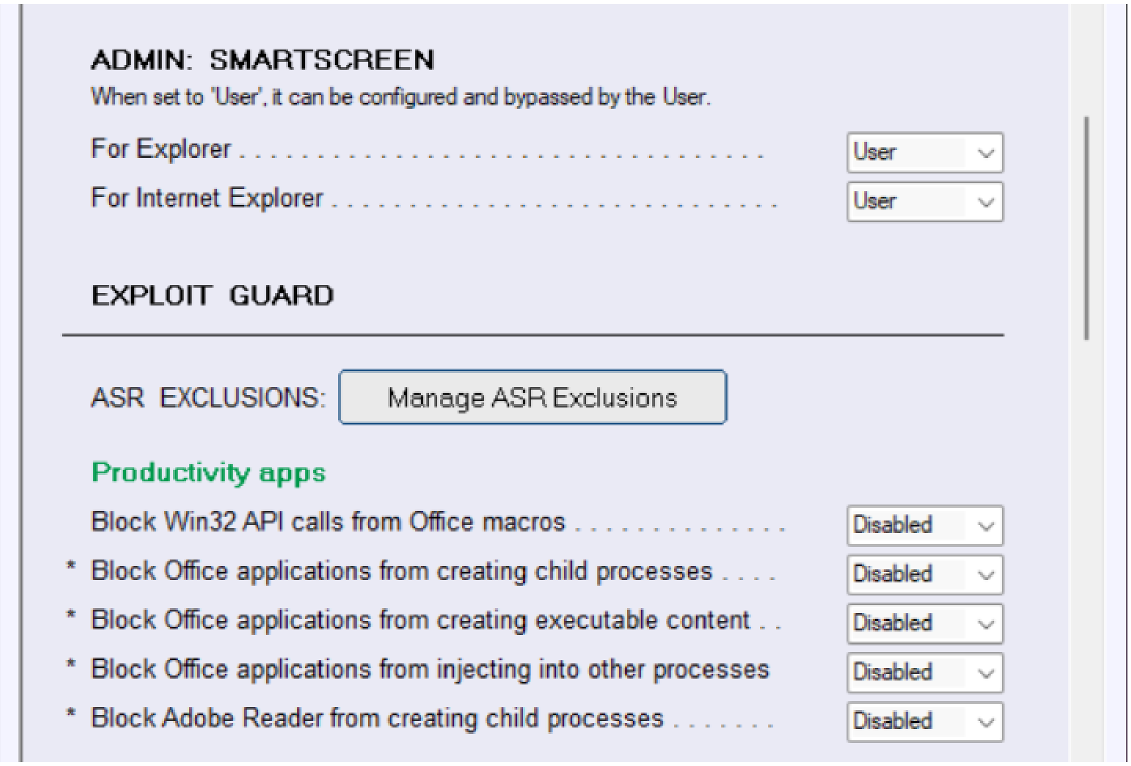
The DEFAULT Protection Level applies the other settings as follows:



PROTECTION LEVELS

BASIC DEFENDER SETTINGS

Behavior Monitoring	ON
Block At First Sight	ON
Cloud-delivered Protection	ON
Automatic Sample Submission	Send
Scan all downloaded files and attachments	ON
Script Scanning	ON
PUA Protection	Disabled
Cloud Protection Level	Default
Cloud Check Time Limit	10s
Average CPU Load while scanning	50%



ADMIN: SMARTSCREEN

When set to 'User', it can be configured and bypassed by the User.

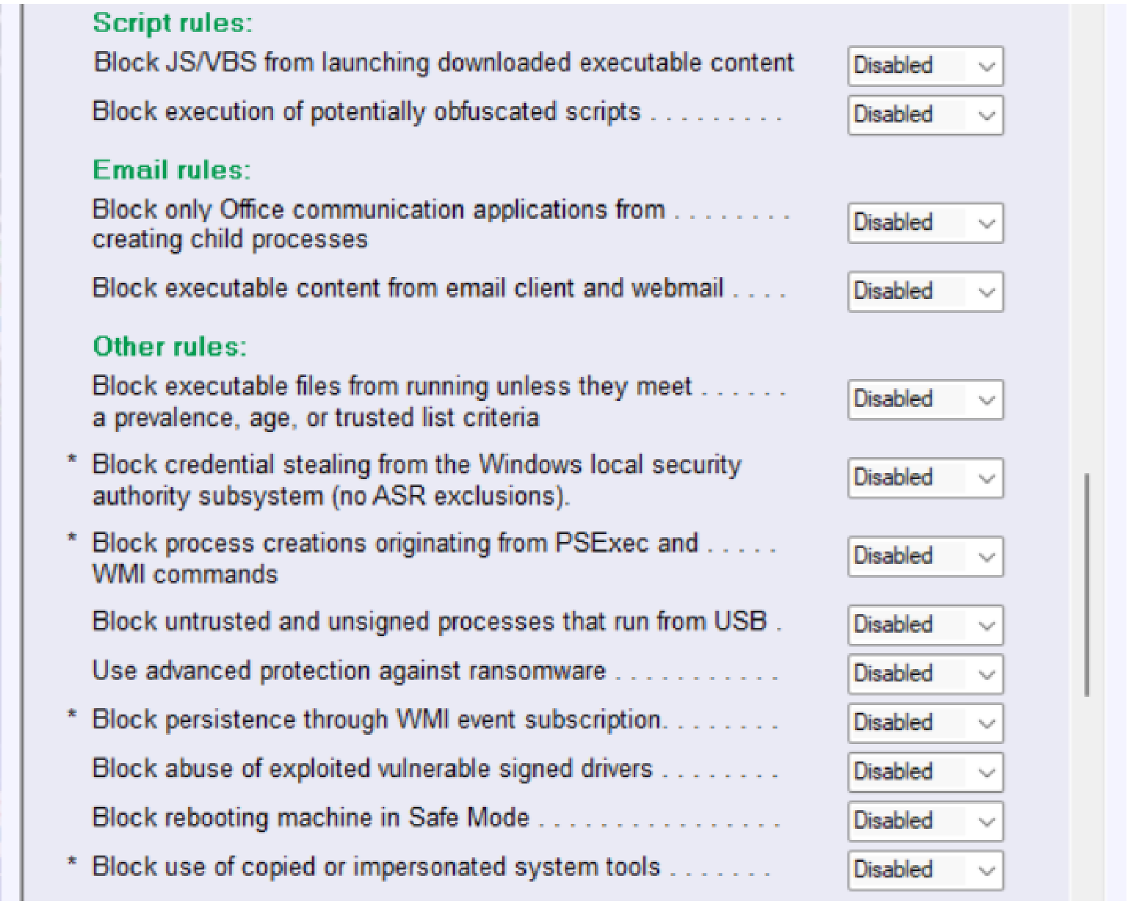
For Explorer	User
For Internet Explorer	User

EXPLOIT GUARD

ASR EXCLUSIONS:

Productivity apps

Block Win32 API calls from Office macros	Disabled
* Block Office applications from creating child processes	Disabled
* Block Office applications from creating executable content	Disabled
* Block Office applications from injecting into other processes	Disabled
* Block Adobe Reader from creating child processes	Disabled



Script rules:

Block JS/VBS from launching downloaded executable content — Disabled

Block execution of potentially obfuscated scripts . . . . — Disabled

Email rules:

Block only Office communication applications from . . . . creating child processes — Disabled

Block executable content from email client and webmail . . . . — Disabled

Other rules:

Block executable files from running unless they meet . . . . . . a prevalence, age, or trusted list criteria — Disabled

* Block credential stealing from the Windows local security authority subsystem (no ASR exclusions). — Disabled

* Block process creations originating from PSExec and . . . . . WMI commands — Disabled

Block untrusted and unsigned processes that run from USB . — Disabled

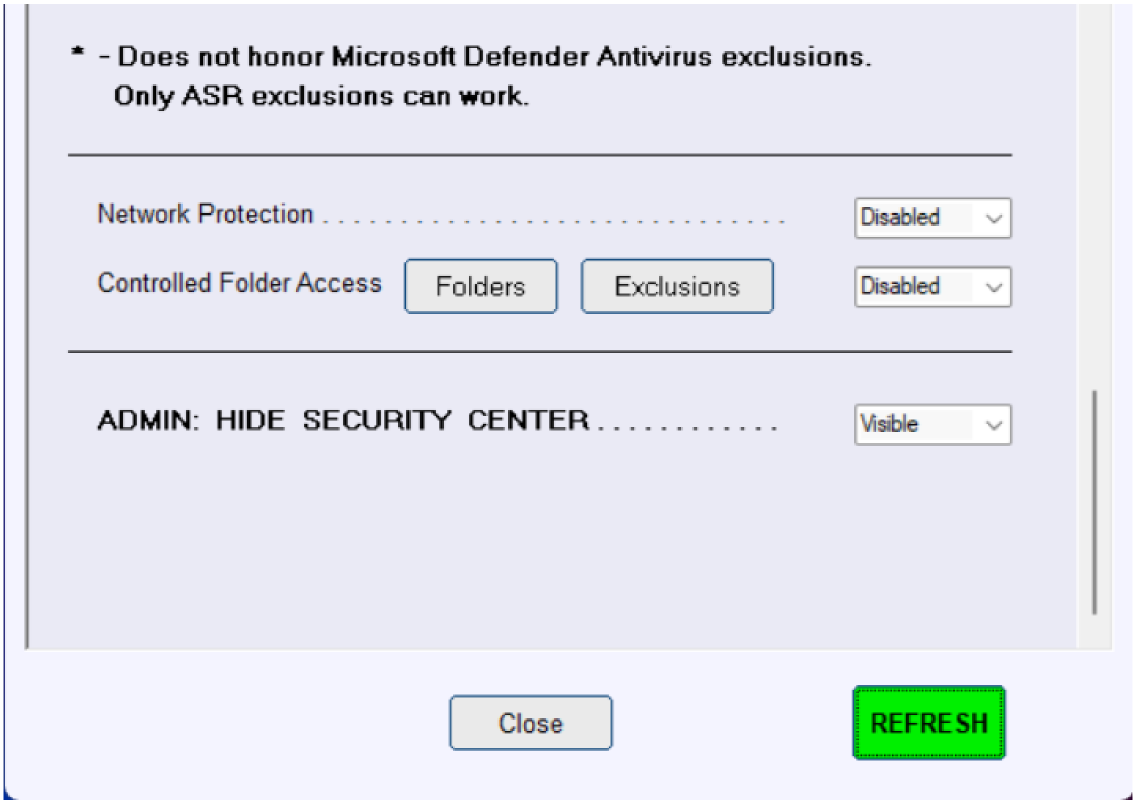
Use advanced protection against ransomware . . . . — Disabled

* Block persistence through WMI event subscription. . . . . — Disabled

Block abuse of exploited vulnerable signed drivers . . . . — Disabled

Block rebooting machine in Safe Mode . . . . — Disabled

* Block use of copied or impersonated system tools . . . . — Disabled



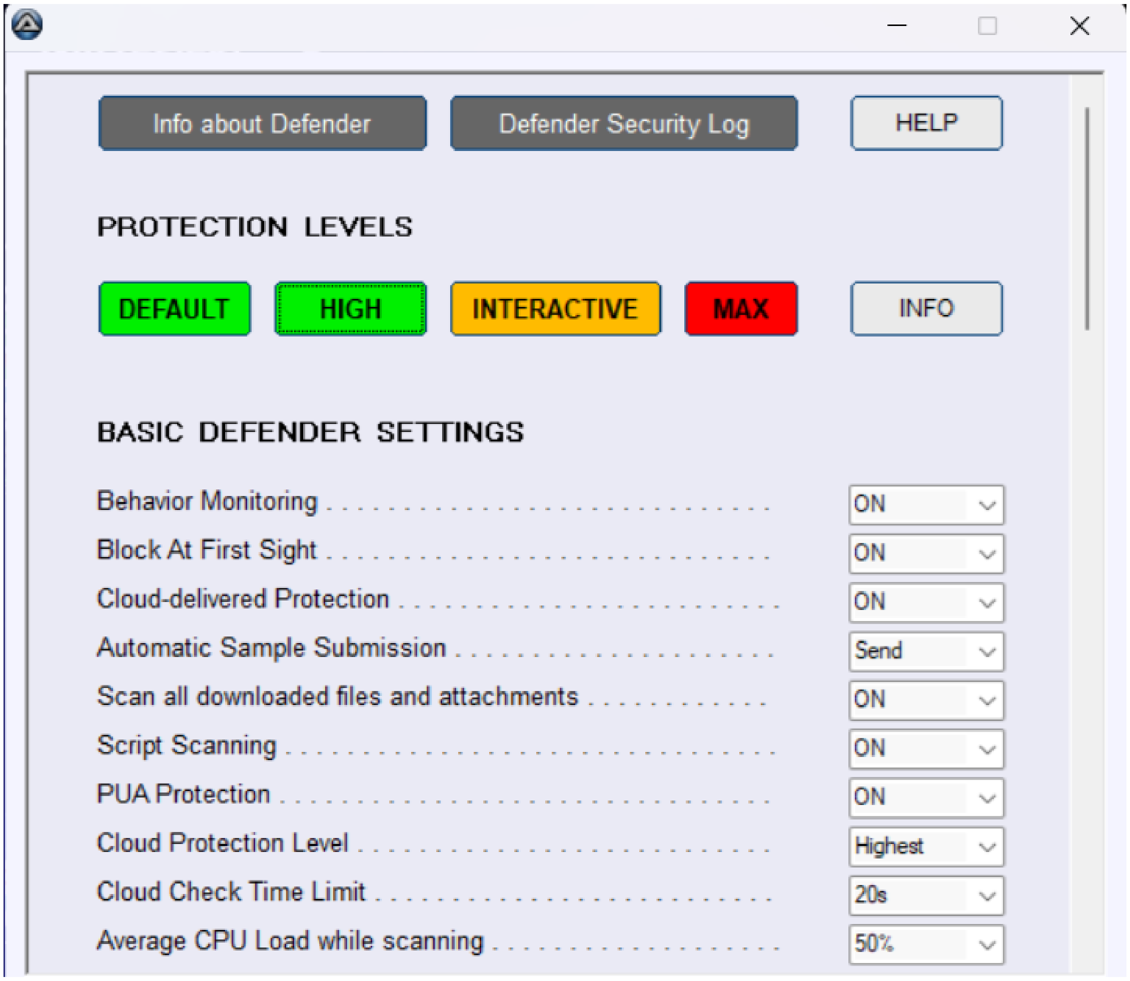
* - Does not honor Microsoft Defender Antivirus exclusions.
Only ASR exclusions can work.

Network Protection . . . . — Disabled

Controlled Folder Access — Disabled

ADMIN: HIDE SECURITY CENTER . . . . — Visible

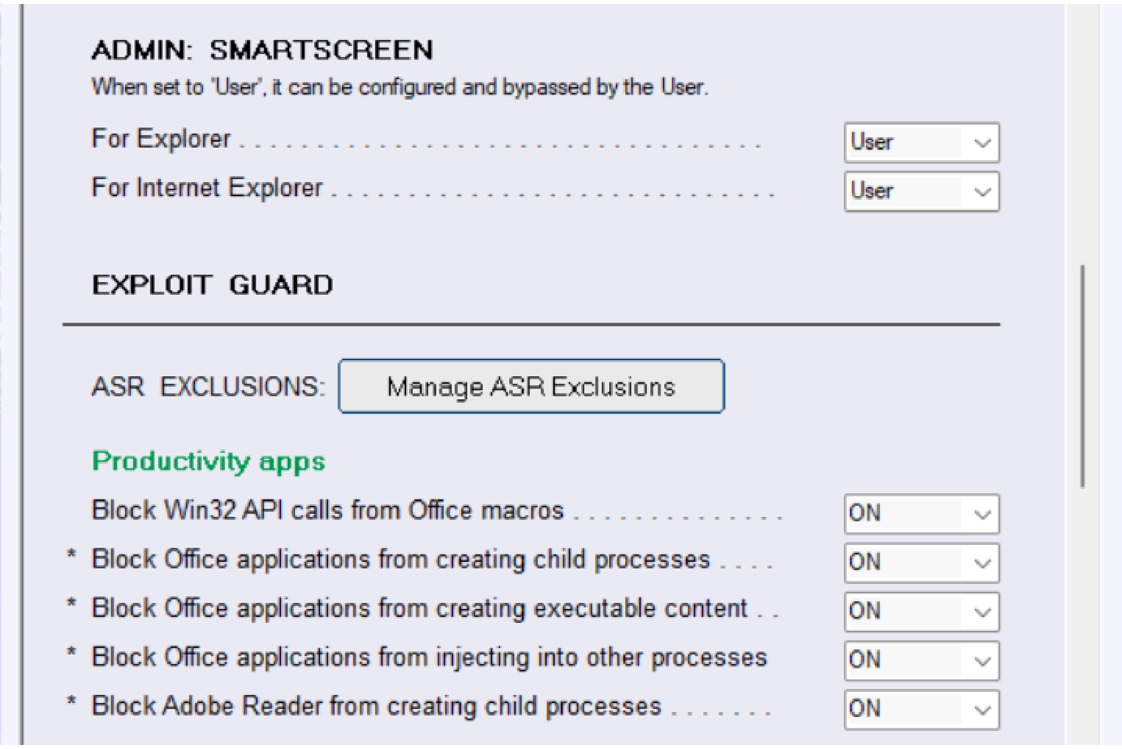
The HIGH Protection Level applies the other settings as follows:



PROTECTION LEVELS

BASIC DEFENDER SETTINGS

Behavior Monitoring	ON
Block At First Sight	ON
Cloud-delivered Protection	ON
Automatic Sample Submission	Send
Scan all downloaded files and attachments	ON
Script Scanning	ON
PUA Protection	ON
Cloud Protection Level	Highest
Cloud Check Time Limit	20s
Average CPU Load while scanning	50%



ADMIN: SMARTSCREEN

When set to 'User', it can be configured and bypassed by the User.

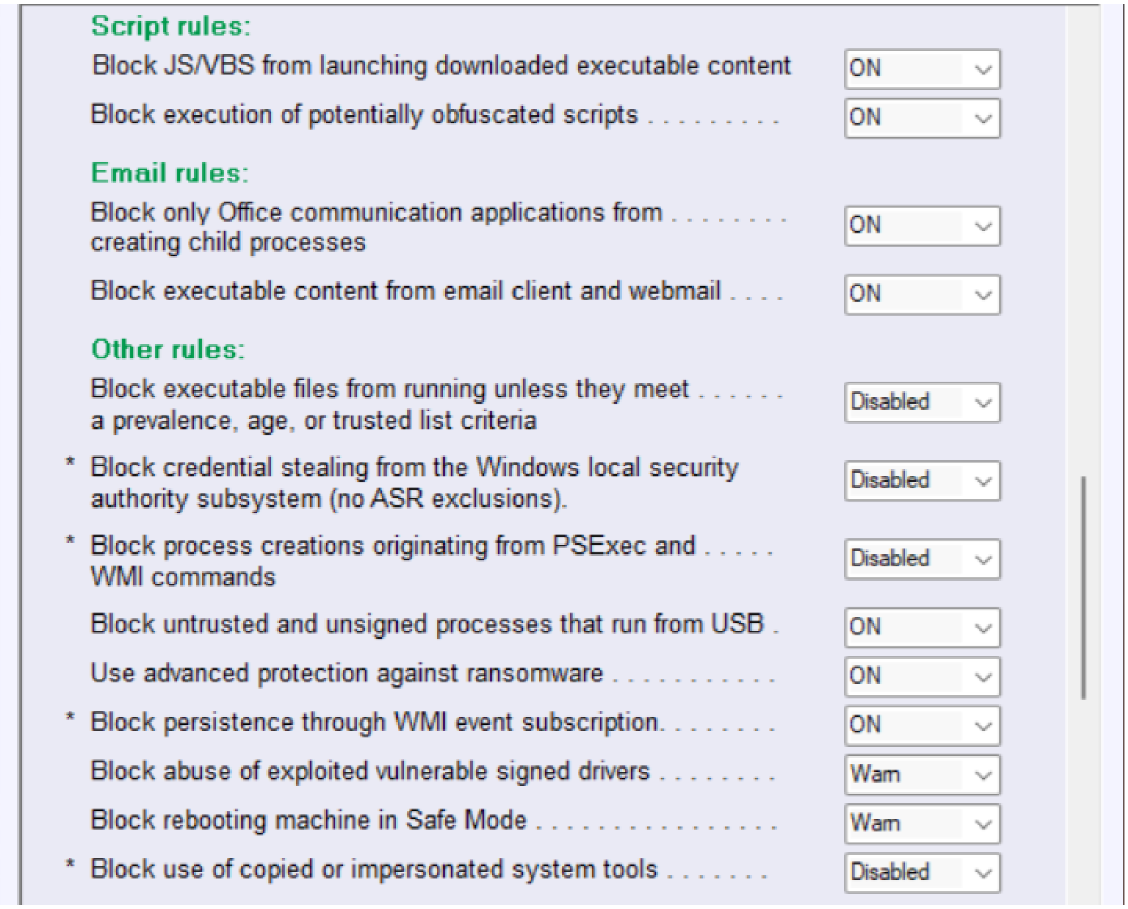
For Explorer	User
For Internet Explorer	User

EXPLOIT GUARD

ASR EXCLUSIONS:

Productivity apps

Block Win32 API calls from Office macros	ON
* Block Office applications from creating child processes	ON
* Block Office applications from creating executable content	ON
* Block Office applications from injecting into other processes	ON
* Block Adobe Reader from creating child processes	ON



Script rules:

Block JS/VBS from launching downloaded executable content ON

Block execution of potentially obfuscated scripts . . . . ON

Email rules:

Block only Office communication applications from . . . . creating child processes ON

Block executable content from email client and webmail . . . . ON

Other rules:

Block executable files from running unless they meet . . . . . . a prevalence, age, or trusted list criteria Disabled

* Block credential stealing from the Windows local security authority subsystem (no ASR exclusions). Disabled

* Block process creations originating from PSExec and . . . . . WMI commands Disabled

Block untrusted and unsigned processes that run from USB . ON

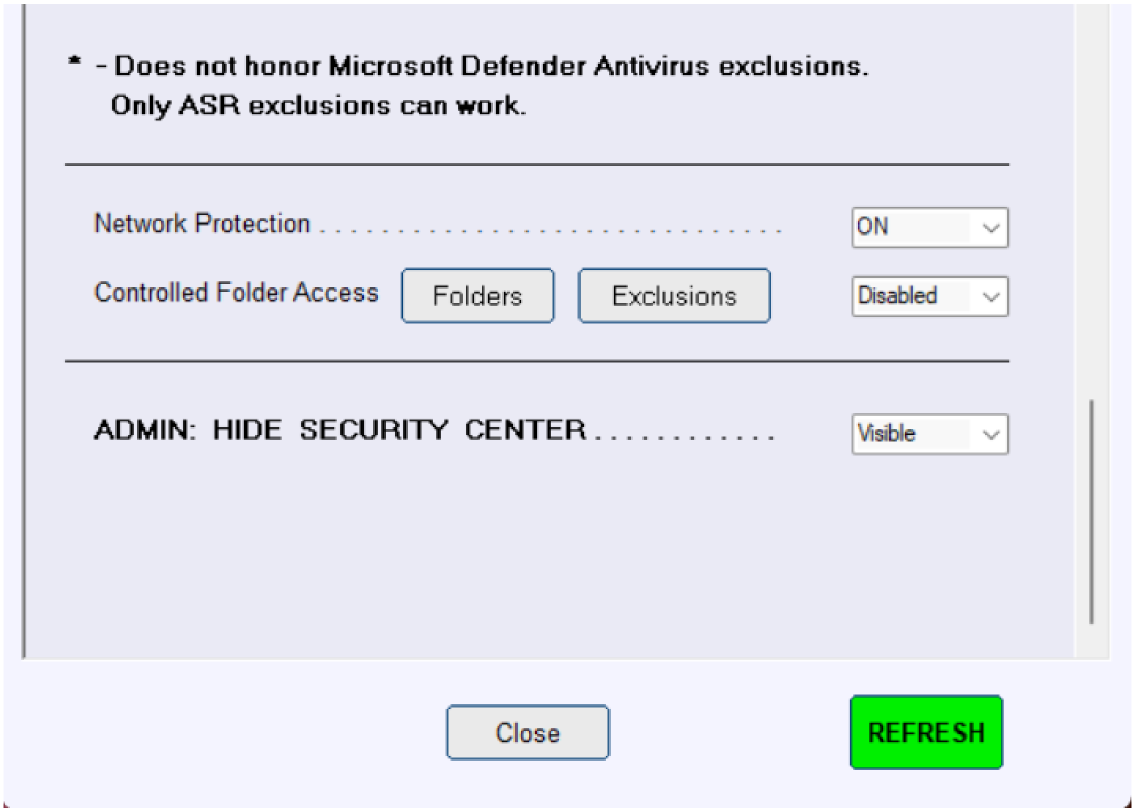
Use advanced protection against ransomware . . . . ON

* Block persistence through WMI event subscription. . . . . ON

Block abuse of exploited vulnerable signed drivers . . . . Warn

Block rebooting machine in Safe Mode . . . . Warn

* Block use of copied or impersonated system tools . . . . Disabled



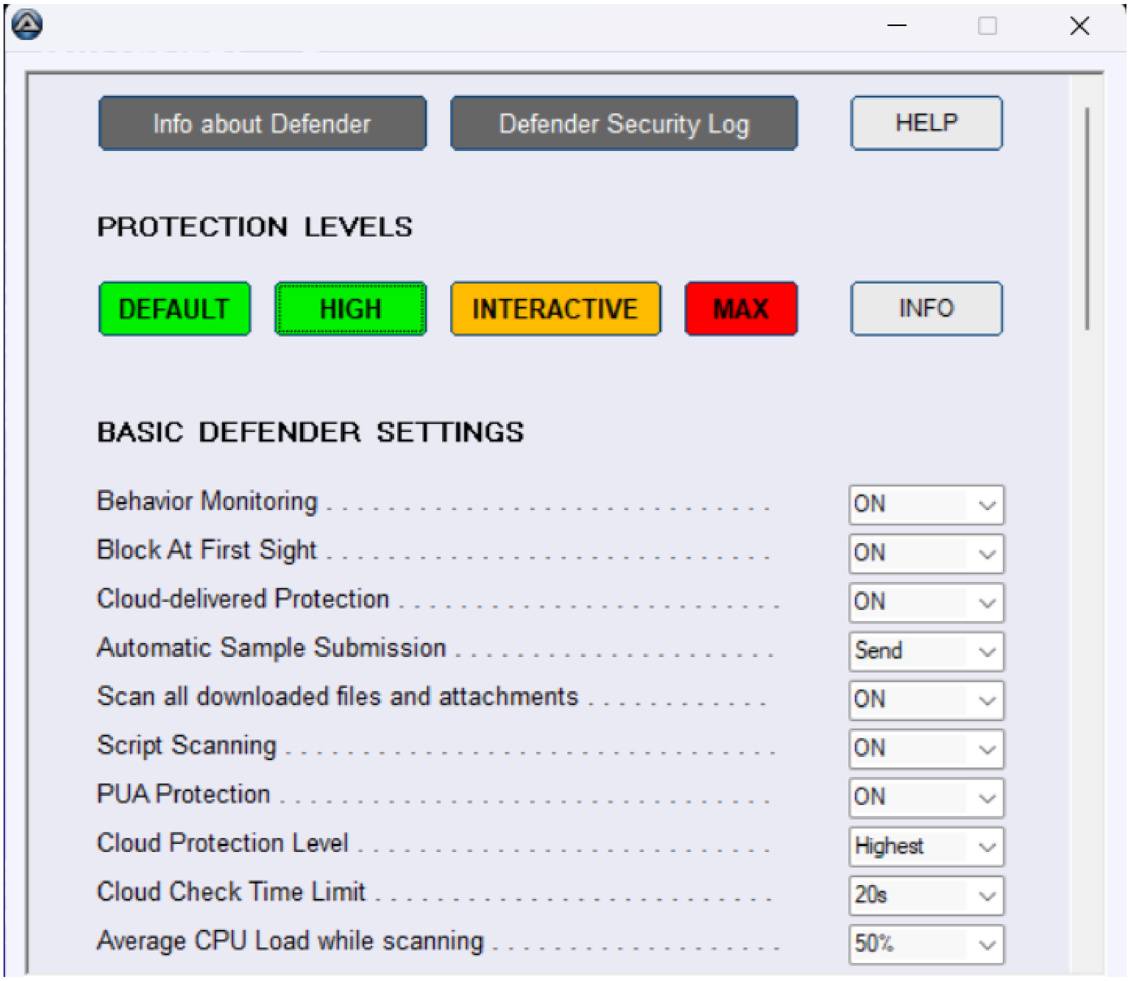
* - Does not honor Microsoft Defender Antivirus exclusions.
Only ASR exclusions can work.

Network Protection . . . . ON

Controlled Folder Access Disabled

ADMIN: HIDE SECURITY CENTER . . . . Visible

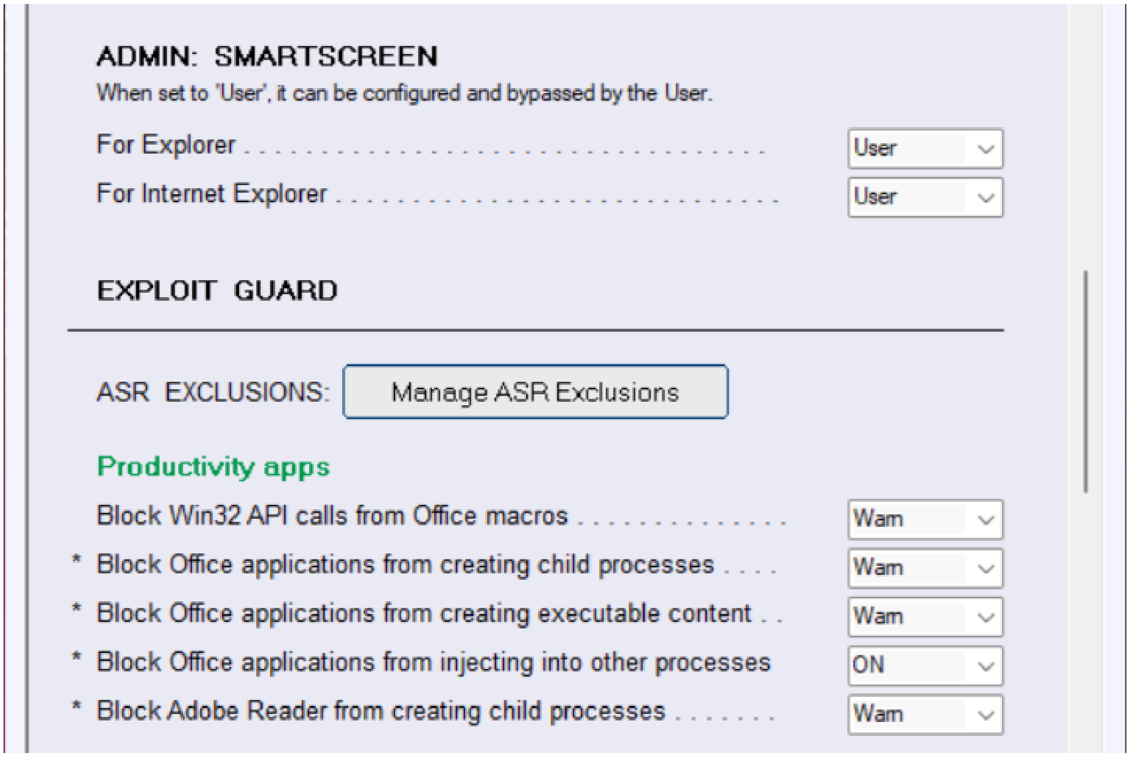
The INTERACTIVE Protection Level applies the other settings as follows:



PROTECTION LEVELS

BASIC DEFENDER SETTINGS

Behavior Monitoring	ON
Block At First Sight	ON
Cloud-delivered Protection	ON
Automatic Sample Submission	Send
Scan all downloaded files and attachments	ON
Script Scanning	ON
PUA Protection	ON
Cloud Protection Level	Highest
Cloud Check Time Limit	20s
Average CPU Load while scanning	50%



ADMIN: SMARTSCREEN

When set to 'User', it can be configured and bypassed by the User.

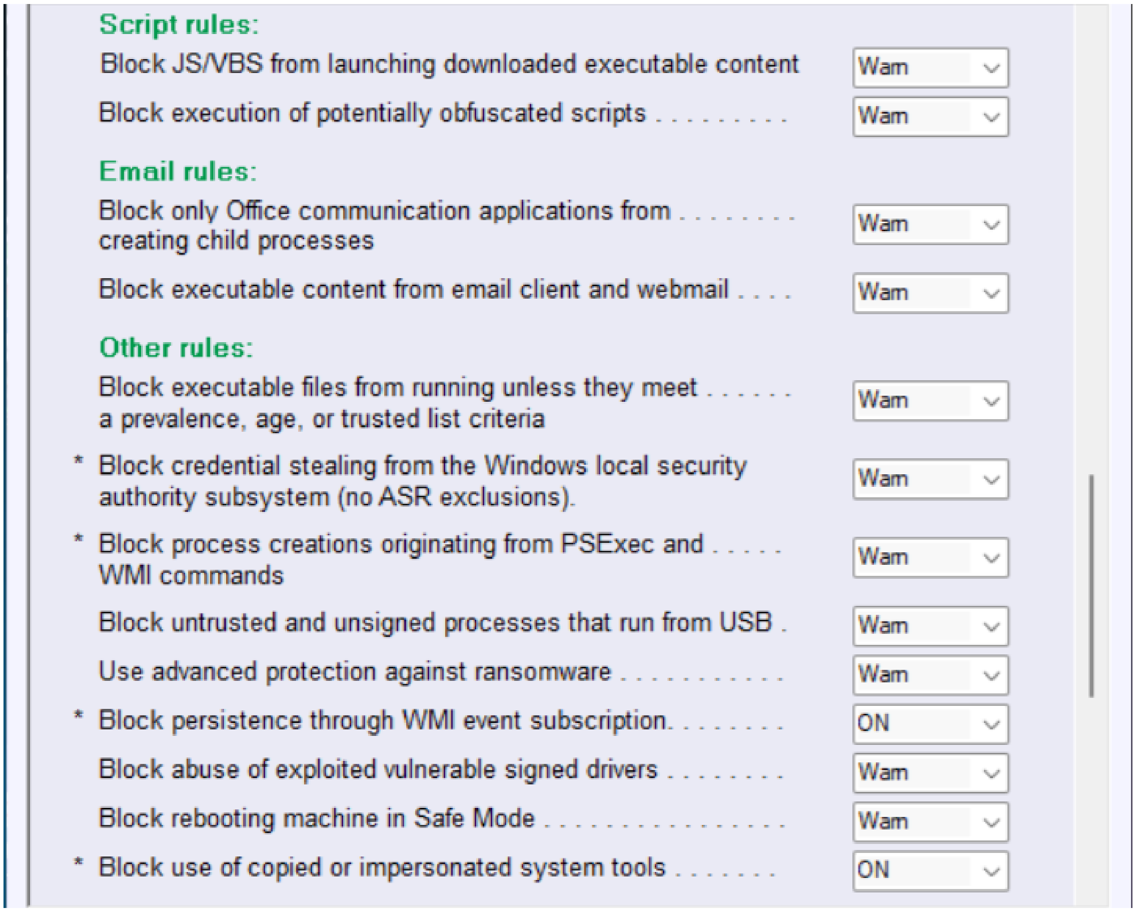
For Explorer	User
For Internet Explorer	User

EXPLOIT GUARD

ASR EXCLUSIONS:

Productivity apps

Block Win32 API calls from Office macros	Warn
* Block Office applications from creating child processes	Warn
* Block Office applications from creating executable content . .	Warn
* Block Office applications from injecting into other processes	ON
* Block Adobe Reader from creating child processes	Warn



Script rules:

Block JS/VBS from launching downloaded executable content — Warn

Block execution of potentially obfuscated scripts . . . . — Warn

Email rules:

Block only Office communication applications from . . . .
creating child processes — Warn

Block executable content from email client and webmail . . . . — Warn

Other rules:

Block executable files from running unless they meet . . . . . .
a prevalence, age, or trusted list criteria — Warn

* Block credential stealing from the Windows local security
authority subsystem (no ASR exclusions). — Warn

* Block process creations originating from PSExec and . . . . .
WMI commands — Warn

Block untrusted and unsigned processes that run from USB . — Warn

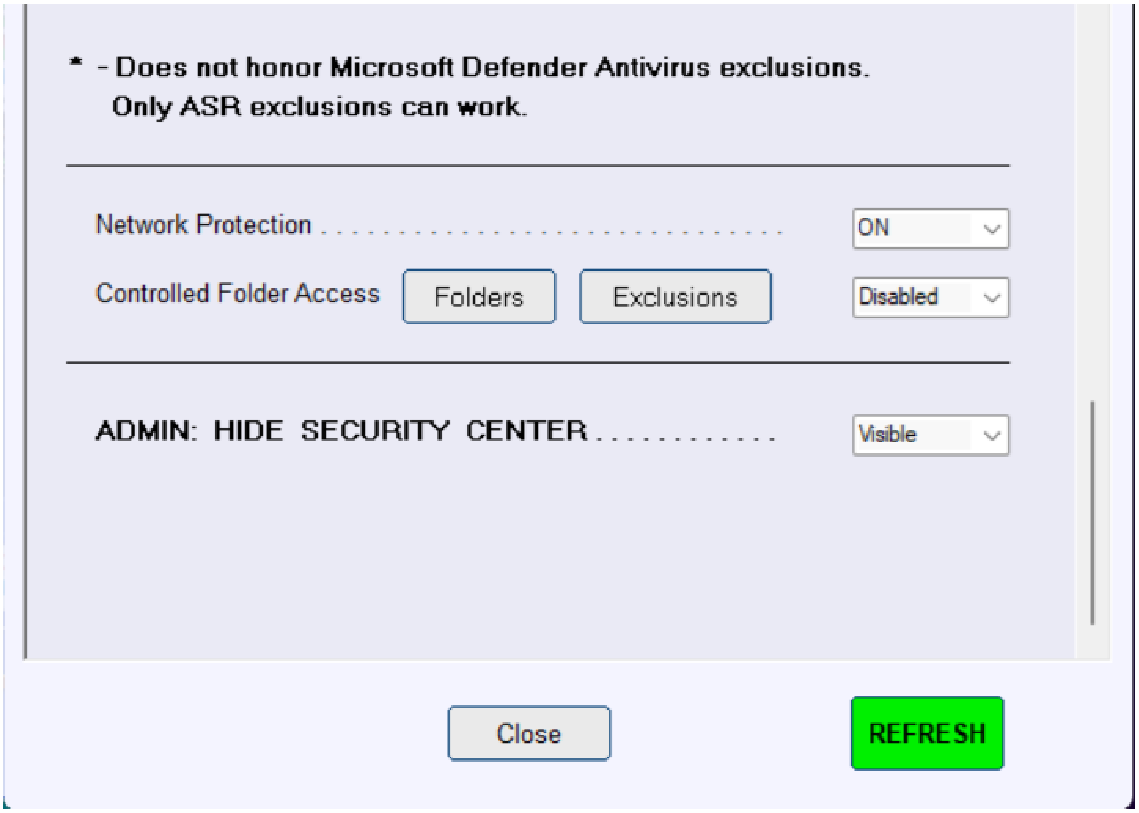
Use advanced protection against ransomware . . . . — Warn

* Block persistence through WMI event subscription. . . . . — ON

Block abuse of exploited vulnerable signed drivers . . . . — Warn

Block rebooting machine in Safe Mode . . . . — Warn

* Block use of copied or impersonated system tools . . . . — ON



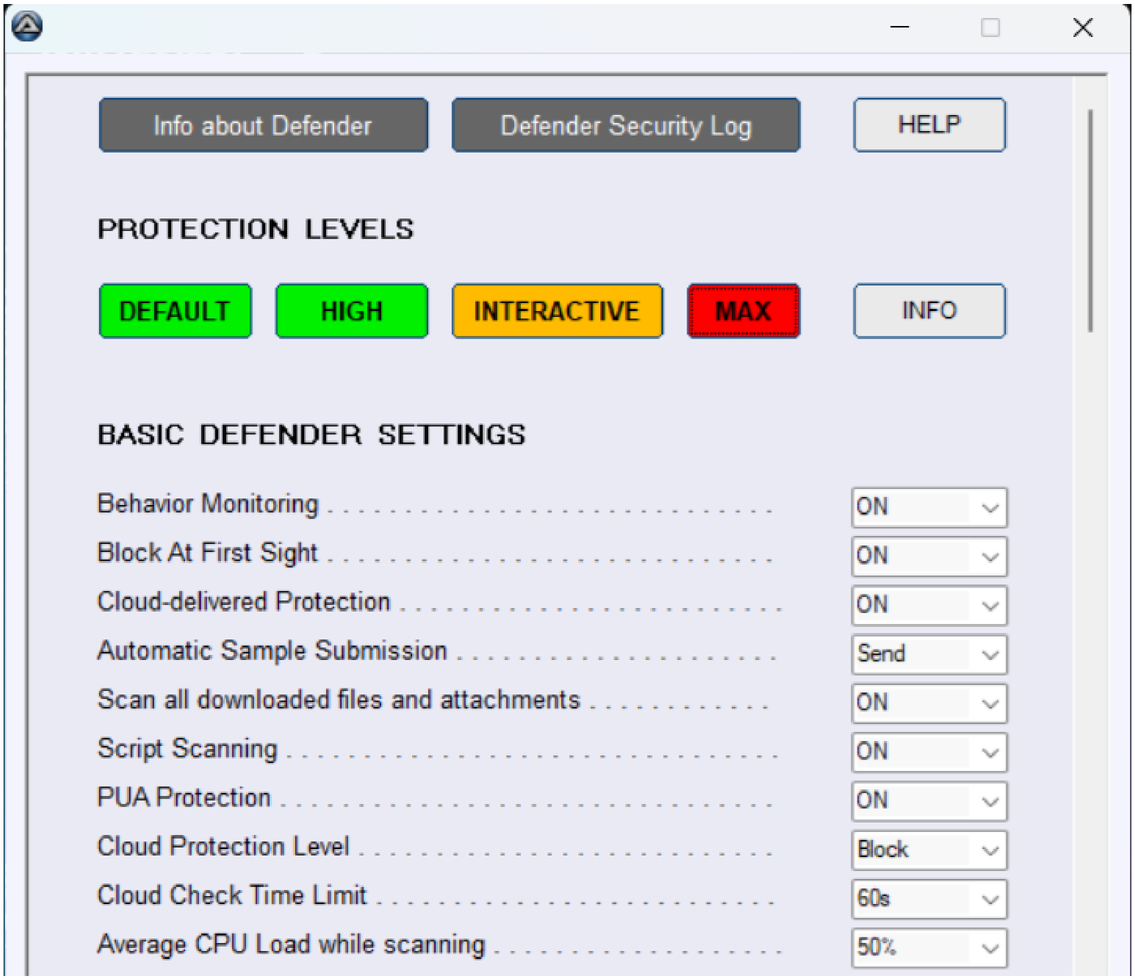
*** - Does not honor Microsoft Defender Antivirus exclusions.
Only ASR exclusions can work.**

Network Protection . . . . — ON

Controlled Folder Access — Disabled

ADMIN: HIDE SECURITY CENTER . . . . — Visible

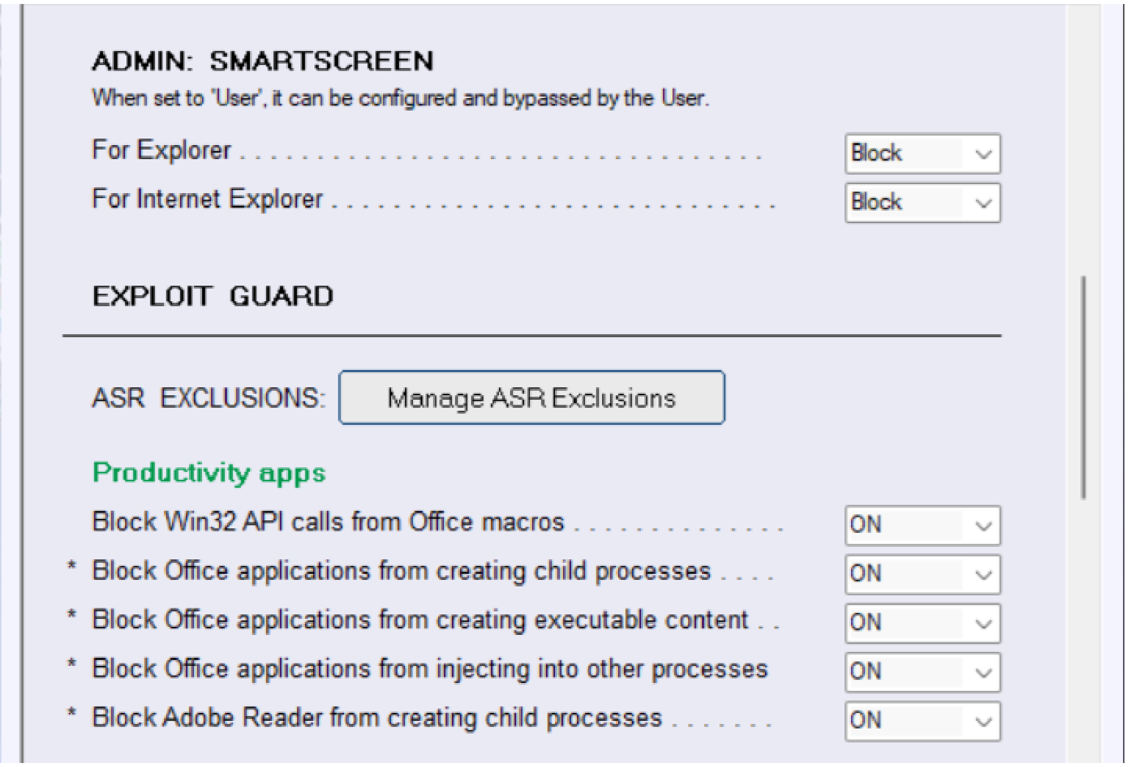
The MAX Protection Level applies the other settings as follows:



PROTECTION LEVELS

BASIC DEFENDER SETTINGS

Behavior Monitoring	ON
Block At First Sight	ON
Cloud-delivered Protection	ON
Automatic Sample Submission	Send
Scan all downloaded files and attachments	ON
Script Scanning	ON
PUA Protection	ON
Cloud Protection Level	Block
Cloud Check Time Limit	60s
Average CPU Load while scanning	50%



ADMIN: SMARTSCREEN

When set to 'User', it can be configured and bypassed by the User.

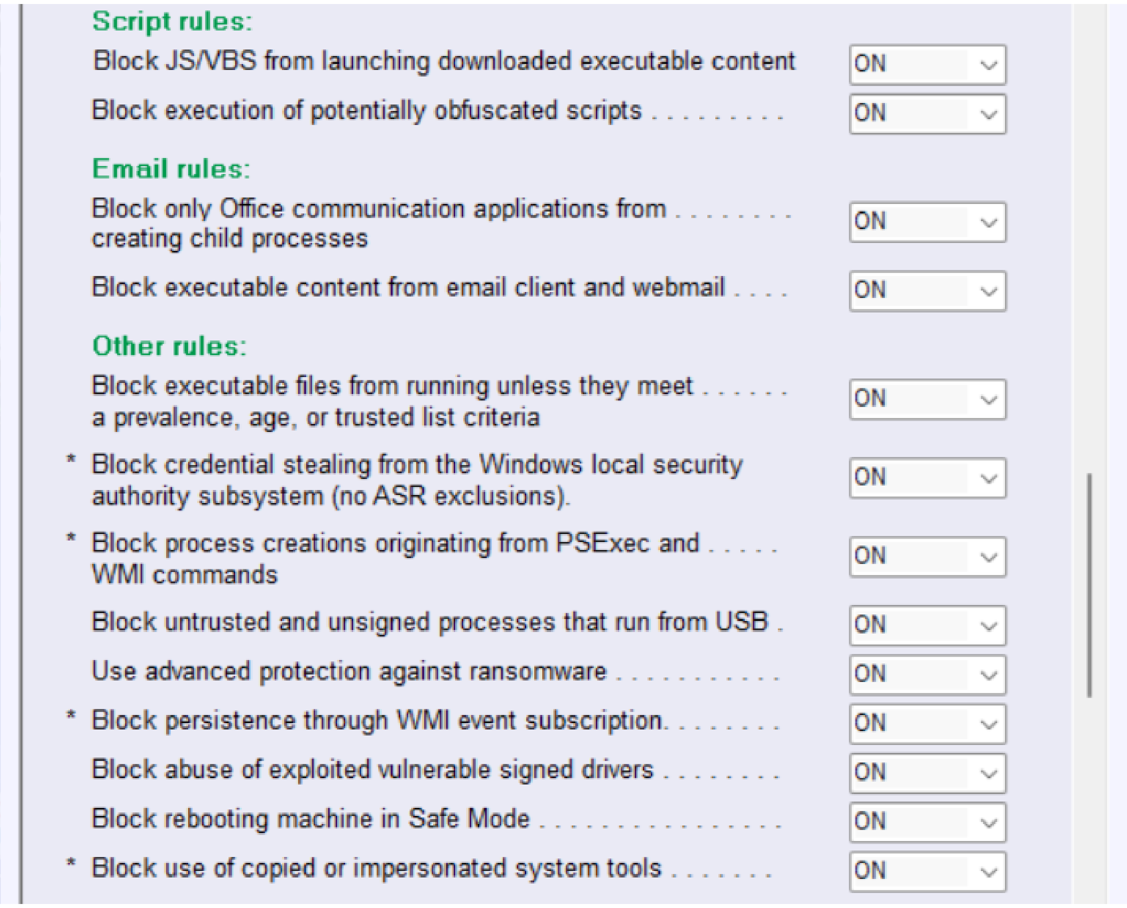
For Explorer	Block
For Internet Explorer	Block

EXPLOIT GUARD

ASR EXCLUSIONS:

Productivity apps

Block Win32 API calls from Office macros	ON
* Block Office applications from creating child processes	ON
* Block Office applications from creating executable content	ON
* Block Office applications from injecting into other processes	ON
* Block Adobe Reader from creating child processes	ON



Script rules:

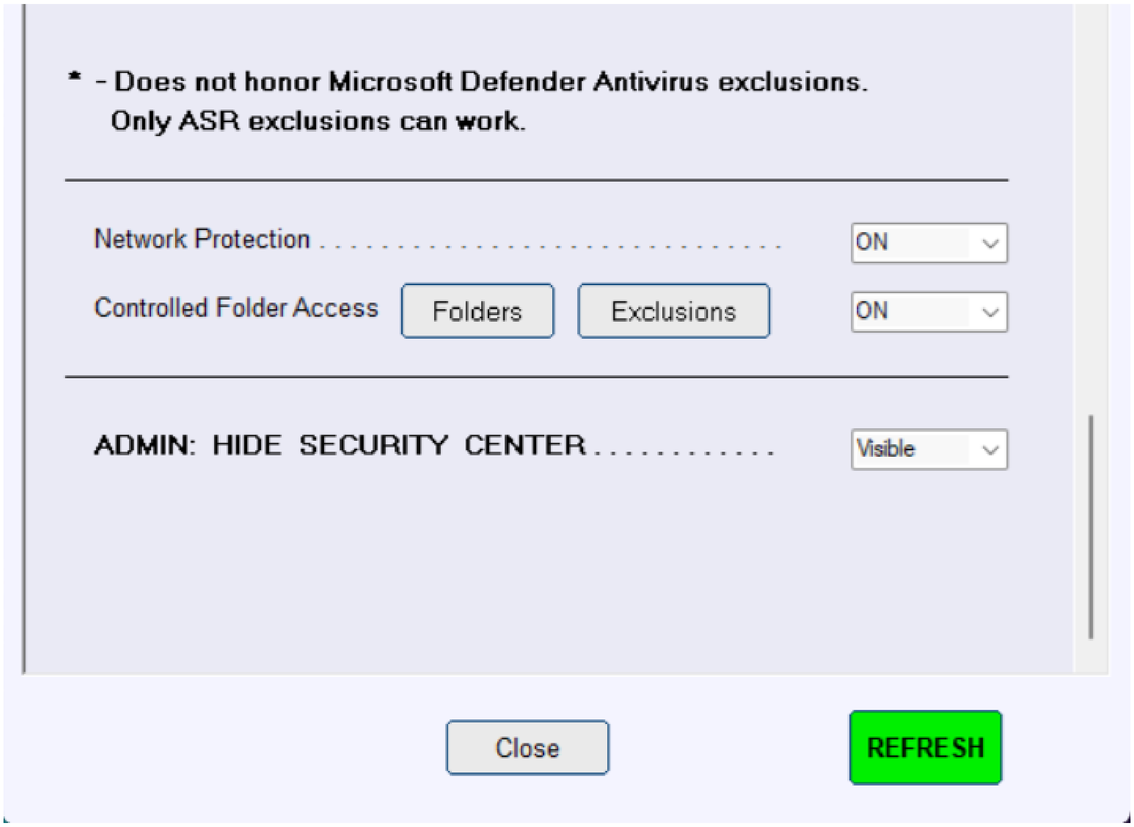
Block JS/VBS from launching downloaded executable content	ON
Block execution of potentially obfuscated scripts	ON

Email rules:

Block only Office communication applications from . . . . creating child processes	ON
Block executable content from email client and webmail	ON

Other rules:

Block executable files from running unless they meet . . . . . . a prevalence, age, or trusted list criteria	ON
* Block credential stealing from the Windows local security authority subsystem (no ASR exclusions).	ON
* Block process creations originating from PSExec and . . . . . WMI commands	ON
Block untrusted and unsigned processes that run from USB .	ON
Use advanced protection against ransomware	ON
* Block persistence through WMI event subscription.	ON
Block abuse of exploited vulnerable signed drivers	ON
Block rebooting machine in Safe Mode	ON
* Block use of copied or impersonated system tools	ON



*** - Does not honor Microsoft Defender Antivirus exclusions.**
Only ASR exclusions can work.

Network Protection	ON
Controlled Folder Access	ON
ADMIN: HIDE SECURITY CENTER	Visible

IV. NOTES ABOUT ASR RULES AND CFA

Block credential stealing from the Windows local security

This ASR rule can make a lot of noise in the Defender Security Log. Most of the blocked events are usually false positives when the legal application tries to enumerate running processes and attempts to open them with exhaustive permissions. These applications cannot be excluded by using <Manage ASR Exclusions>.

Block executable files from running unless they meet a prevalence, age, or trusted list criteria

This rule is strong prevention against Polymorphic malware (EXE, DLL, etc.), but one has to accept the higher rate of false positives for application installers/updaters.
The prevalence is related to 1000 machines and age to 24 hours. The trusted list criteria are managed by Microsoft. The rule can recognize executables as suspicious only when Defender can connect to the Microsoft cloud. From my experience, most executable files blocked by this rule (application installers/updaters) are allowed after 48 hours. Anyway, some applications with a very low prevalence can be blocked for several days, and the users usually do not know how to unblock them.
Please note: It is not necessary to add exclusions for this rule. When it is used with the "ON" setting, the proper procedure to unblock files is as follows:

1. Set the rule temporarily to Audit - for simple installations, one can also use the Warn setting.
2. Run the installer/updater >> install/update the application.
3. Set the rule to Warn >> run the application >> use Unblock option in Defender's prompt (a few times times if required).
4. If the application works without blocks, set the rule to ON.

Block process creations originating from PSExec and WMI commands

This rule is important because malware can try to bypass the parent-child checking by using WMI. So, other ASR rules based on checking child processes will fail. On some computers, the WMI can be used by the computer's firmware so it is better to initially set this ASR rule to Audit.

Block abuse of exploited vulnerable signed drivers

This rule is important for protecting Windows kernel against exploits related to legal but vulnerable drivers. Such drivers can be used to perform dangerous attacks. The drivers already installed on the computer are not blocked. It is recommended to initially set this rule to Audit or Warn.

Controlled Folder Access (CFA)

ConfigureDefender can set CFA via four settings:

- ON - malicious and suspicious apps won't be allowed to make changes to files in protected **folders** (Id = 1123) and to write to protected **disk sectors** (Id = 1127),
- BDMO = Block Disk Modifications Only - malicious and suspicious apps won't be allowed to write only to protected **disk sectors** (Id = 1127),
- Disabled - CFA protection is disabled,
- Audit - Changes will be allowed, but they will be recorded in the Windows event log (Id = 1124 and Id = 1128).

When CFA is set to ON, BDMO, or Audit, the events are logged in the Window Event Log (Ids = 1123, 1124, 1127, 1128). These events can be also seen by using the button <Defender Security Log> in ConfigureDefender. When events 1127 or 1128 are logged, the Defender alerts about **memory modifications,** but these are disk memory modifications (disk sector writes) - not related to RAM.
CFA can be very useful as anti-ransomware protection, but only after excluding the applications that need to access protected **folders** and applications that need to access protected **disk sectors**. The second group can include backup applications, disk management applications, disk optimization programs, etc. It is recommended to set initially this rule to Audit.

Making ASR exclusions for files in hidden locations.

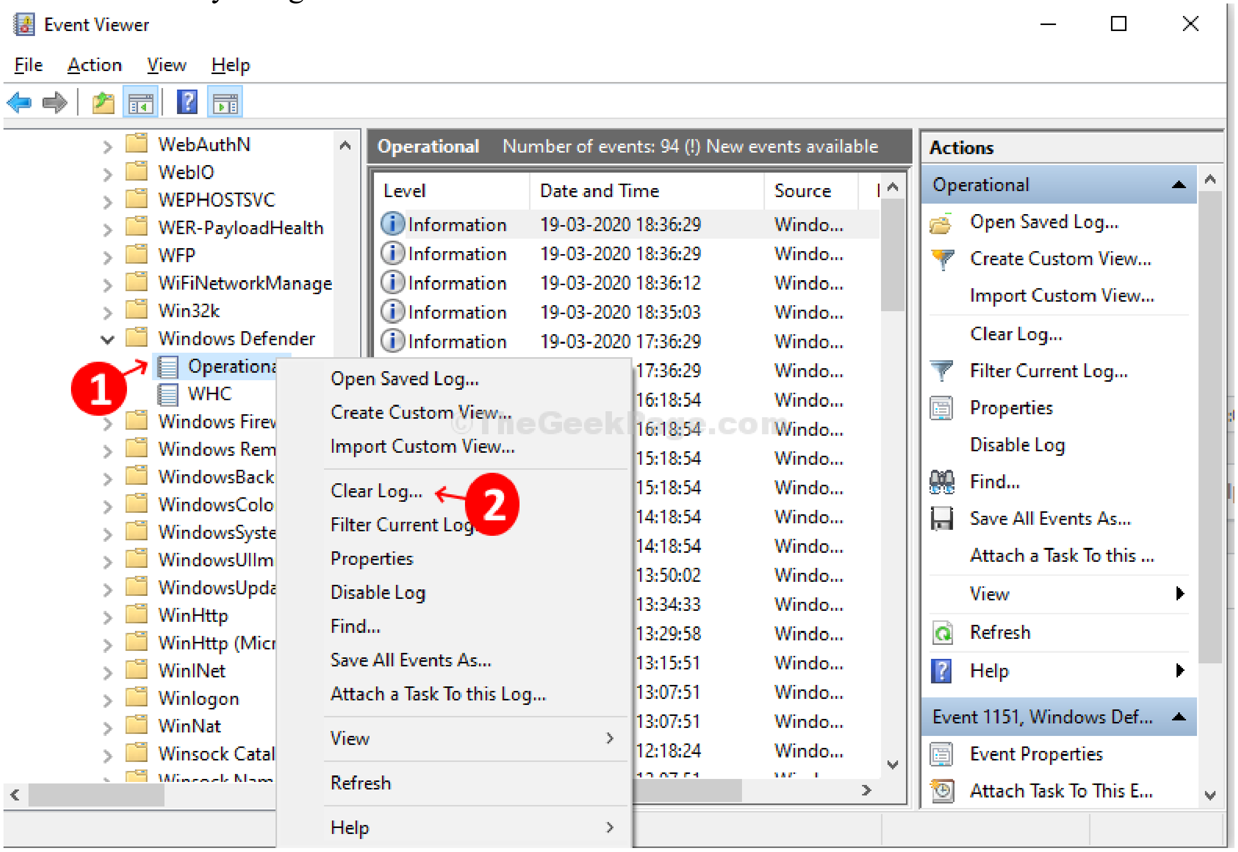
Folders like **%ProgramData%**, user **AppData**, or **%Program Files%\WindowsApps** have hidden attributes. To make exclusions in hidden locations, one has to change the default Explorer settings on the **Administrator account**:
View >> Show >> tick the "Hidden items" option.
When working on the Standard User Account (SUA), the Explorer **"Hidden items" option** must still be configured on the Administrator account. ConfigureDefender runs on the Administrator account even if started from SUA.

An alternative way (on default settings) is using the full path:

1. Copy the full path of the blocked file.
2. Use <Manage ASR Exclusions> in ConfigureDefender and choose <Add File> to open Exclusions File Explorer.
3. Paste that path to the Exclusions File Explorer in the place of "File name".
4. Press the <Open> button.

V. Clearing the <Defender Security Log>

ConfigureDefender uses Windows Event Log to show events related to Microsoft Defender. So, the log can be cleared by using Event Viewer:



Operational Number of events: 94 (!) New events available

Level	Date and Time	Source
Information	19-03-2020 18:36:29	Windo...
Information	19-03-2020 18:36:29	Windo...
Information	19-03-2020 18:36:12	Windo...
Information	19-03-2020 18:35:03	Windo...
Information	19-03-2020 17:36:29	Windo...
	17:36:29	Windo...
	16:18:54	Windo...
	16:18:54	Windo...
	15:18:54	Windo...
	15:18:54	Windo...
	14:18:54	Windo...
	14:18:54	Windo...
	13:50:02	Windo...
	13:34:33	Windo...
	13:29:58	Windo...
	13:15:51	Windo...
	13:07:51	Windo...
	13:07:51	Windo...
	12:18:24	Windo...

Instead of using Event Viewer to delete the Defender Operational events, one can run Wevtutil tool from the Administrator PowerShell console or Administrator CMD console with command-line:

```
wevtutil cl "Microsoft-Windows-Windows Defender/Operational"
```

VII. Info for Administrators.

Defender stores its native settings under the registry key (owned by SYSTEM):
HKLM\SOFTWARE\Microsoft\Windows Defender
These can be changed when using PowerShell cmdlets. A few settings can be also changed from Windows Security Center.

Administrators can use Group Policy Management Console to apply the Defender policy settings. They are stored under another registry key (policy key owned by ADMINISTRATORS):
HKLM\SOFTWARE\Policies\Microsoft\Windows Defender
Group Policy settings can override but do not change native Defender settings. The native settings **are automatically recovered when removing** Group Policy settings.

ConfigureDefender removes the settings made via direct registry editing under the policy key:
HKLM\SOFTWARE\Policies\Microsoft\Windows Defender
This is required because those settings would override ConfigureDefender settings.

ConfigureDefender may be used on all Windows 10 versions. **But, on Windows Professional and Enterprise editions it can work properly only if your Administrator did not applied Defender policies by using another management tool, for example, Group Policy Management Console.**
These policies are set to "Not configured" by default. **If they have been changed by the Administrator, then they should be reset to "Not configured"**.
Group Policy settings may be found in Group Policy Management Console:
Computer Configuration > Policies > Administrative Templates > Windows Components > Microsoft Defender Antivirus
The settings under the tabs: MAPS, MpEngine, Real-time Protection, Reporting Scan, Spynet, and Windows Defender Exploit Guard should be examined.

Please note: Group Policy Refresh feature will override ConfigureDefender settings if Defender Group Policy settings are not reset to "Not configured"!
ConfigureDefender should not be used alongside other management tools deployed in Enterprises, like Intune or MDM CSPs.

Useful links:

GitHub - AndyFul/ConfigureDefender: Utility for configuring Windows 10 built-in Defender antivirus settings.

Microsoft Defender Attack Surface Reduction recommendations | Palantir Blog

Use attack surface reduction rules to prevent malware infection - Windows security | Microsoft Docs

Attack surface reduction frequently asked questions (FAQ) | Microsoft Docs

Microsoft Defender for Endpoint - Microsoft Tech Community

Update - ConfigureDefender utility for Windows 10 | MalwareTips Community

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