



# Microsoft Defender for Endpoint

Master Class

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## Module 3

Endpoint Protection

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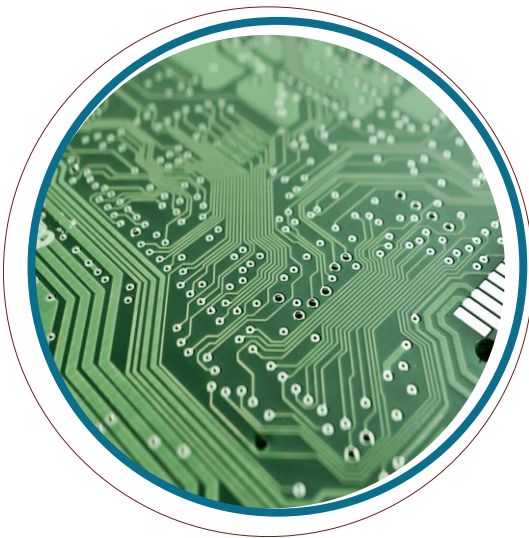
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## Module 3 Contents:

- **Attack Surface Reduction**
  - Endpoint Security Policies
  - ASR Capabilities
- **Next-generation Protection**



## Attack Surface Reduction

## Attack Surface Reduction

*'Attack surfaces are all the places where your organization is vulnerable to cyberthreats and attacks ...*

*... Defender for Endpoint includes several capabilities to help reduce your attack surfaces.'*

## ASR Capabilities



- Hardware Isolation
- ASR rules
- Application control
- Controlled folder access
- Device control
- Network protection
- Web protection
- Exploit protection

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## Enable ASR capabilities

Several methods available

- PowerShell
- Group Policy
- Microsoft Configuration Manager
- Microsoft Intune
  - for enrolled devices
  - for MDE-enrolled devices
- Endpoint Security Policies
  - for MDE-enrolled devices
  - Service-to-Service connection required

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## Service-to-Service connection

This connection offers some capabilities

- Risk Information of devices are usable in Intune and CA policies
- Each onboarded device gets device identity in Entra ID for communication with Intune
  - for already joined or hybrid joined devices the existing device ID is used
  - for new devices, a new syntactic device ID will be created
- Endpoint security policies could be used
  - Intune policies could be enforced by MDE for non-enrolled devices

# Service-to-Service connection

## Configuration

- must be done in both portals or both services (Intune and MDE)

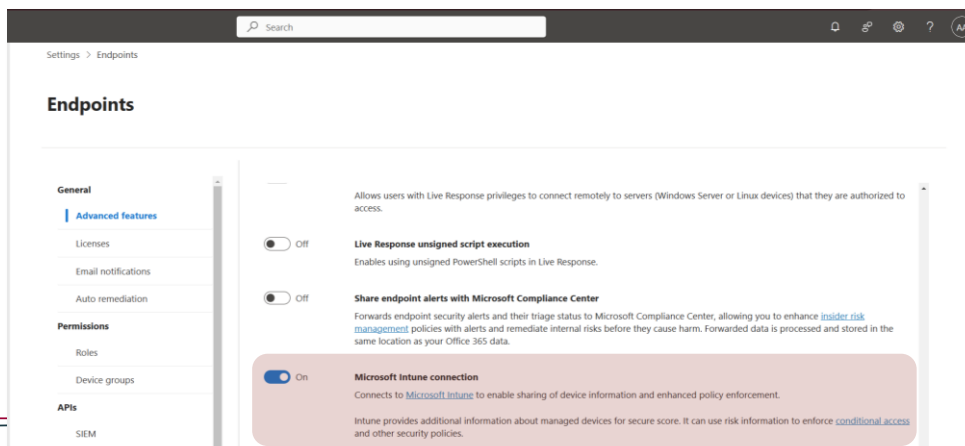
## MDE portal

- Navigate to Settings | Endpoint | Adv Features
- Search for 'Microsoft Intune Connection' and set it to 'On'
- Click 'Save preferences'

# Service-to-Service connection

## Configuration

- MDE portal



MDE Settings

# Service-to-Service connection

## Configuration - MDE portal continued

- Navigate to Settings | Endpoint | Configuration management/Enforcement scope
- Set 'Use MDE to enforce security configuration settings from Intune' to 'On'
- Under 'Enable configuration management' select all OS platforms for which you want to use MDE as authority
- Scroll down till the end of page and click 'Save'

# Service-to-Service connection

## Configuration - MDE portal continued

**Security setting management**

Allow security setting in Intune to be enforced by Microsoft Defender for Endpoint (MDE). This configuration setting will apply to devices that are not yet enrolled to Intune.

You'll need to turn on the integration in Microsoft Defender for Endpoint connector settings under Intune. For more information and pre-requisites, see [Security settings management for Microsoft Defender for Endpoint](#).

**Use MDE to enforce security configuration settings from Intune**

☒ On

**Enable configuration management**

Choose which OS platforms to apply the settings on, then select which set of devices to implement it on. To test the feature on a specific set of devices, tag them with `MDE-Management`.

☒ Windows Client devices

☐ On all devices ☒ On tagged devices

☒ Windows Server devices

☒ On all devices ☐ On tagged devices

☐ Linux devices

☐ On all devices ☐ On tagged devices

☒ macOS devices

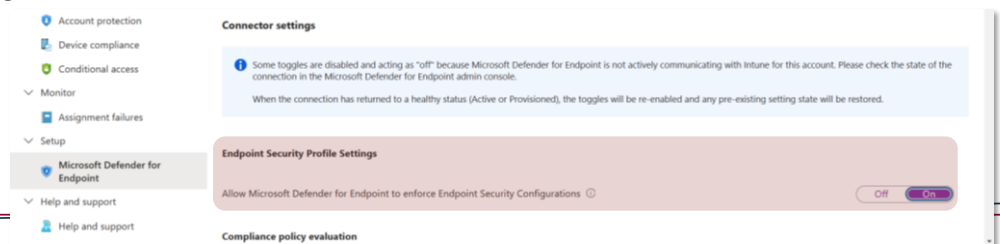
## Service-to-Service connection

Configuration

Intune portal

- Navigate to Endpoint security | Setup/Microsoft Defender for Endpoint
- Set 'Allow Microsoft Defender for Endpoint to enforce Endpoint Security Configuration' to 'On'
- Click 'Save'

Intune portal



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## Service-to-Service connection

Configuration - Intune portal continued

- For using device risk level in Intune set Compliance policy evaluation to 'On'
- Maybe you change 'Number of days until partner is unresponsive'
- Click 'Save'

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MDE settings

Search

Settings > Endpoints

## Endpoints

**Roles**

Device groups

**APIs**

SIEM

**Rules**

Alert suppression

Indicators

Process Memory Indicators

Web content filtering

Automation uploads

Automation folder exclusions

Asset rule management

**Configuration management**

Enforcement scope

Intune Permissions

**Device management**

Onboarding

Offboarding

**Network assessments**

Assessment jobs

### Security setting management

Allow security setting in Intune to be enforced by Microsoft Defender for Endpoint (MDE). This configuration setting will apply to devices that are not yet enrolled to Intune.

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☐ On all devices    ☒ On tagged devices

☐ Windows Server devices

☐ On all devices    ☐ On tagged devices

☐ Linux devices

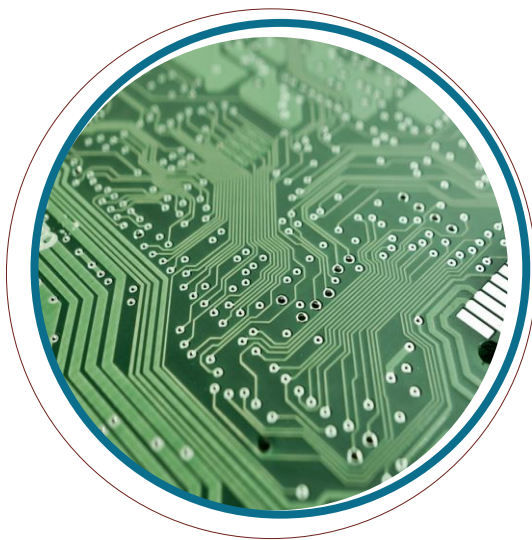
☐ On all devices    ☐ On tagged devices

☐ macOS devices

☐ On all devices    ☐ On tagged devices

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## Attack Surface Reduction

### ASR Capabilities

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## ASR Capabilities - MS Guide



Hardware Isolation  
 ASR rules  
 Application control  
 Controlled folder access  
 Device control  
 Network protection  
 Web protection  
 Exploit protection

## ASR Capabilities - Course sequence



Hardware Isolation  
 ASR rules  
 Controlled folder access  
 Device control  
 Network protection  
 Web protection  
 Application control  
 Exploit protection

## ASR Capabilities - Course sequence



### Hardware Isolation

ASR rules  
 Controlled folder access  
 Device control  
 Network protection  
 Web protection  
 Application control  
 Exploit protection

Source: <https://learn.microsoft.com/en-us/windows/security/application-security/application-isolation/microsoft-defender-application-guard/reqs-md-app-guard>

## Hardware Isolation

- Available for Microsoft Edge and Windows applications
- untrusted sites are browsed in an isolated container

### Prerequisites:

- Software and Hardware
  - refer to the source link
- Windows Feature 'Microsoft Defender Application Guard'
  - could be installed via Intune e.g.
- Administrator declares trusted sites
  - Intune portal: ASR | Policy profile: App and Browser Isolation

Source: <https://learn.microsoft.com/en-us/windows/security/application-security/application-isolation/microsoft-defender-application-guard/reqs-md-app-guard>

## Hardware Isolation

- Available for Microsoft Edge and Windows applications
- untrusted sites are browsed in a container

Prerequisites:

- Software and hardware requirements
  - refer to the [Microsoft Defender Application Guard requirements](#)
- Windows Feature 'Microsoft Defender Application Guard'
  - could be installed via e.g. [Windows Update](#)
- Administrator does not restrict sites
  - Intune portal: ASR | Policy profile: App and Browser Isolation

**DEPRICATED**  
Under Windows 11 24H2  
no longer available

## ASR Capabilities - Course sequence



Hardware Isolation

**ASR rules**

Controlled folder access

Device control

Network protection

Web protection

Application control

Exploit protection

Source: <https://learn.microsoft.com/en-us/defender-endpoint/attack-surface-reduction-rules-deployment>  
<https://learn.microsoft.com/en-us/defender-endpoint/attack-surface-reduction-rules-reference>

## ASR Rules

'ASR rules target certain unsecure software behaviors.'

### Examples

- Block Office apps from creating executable content
- Block rebooting machine in Safe Mode
- Block execution of potentially obfuscated scripts
- ...

Source: <https://learn.microsoft.com/en-us/defender-endpoint/attack-surface-reduction-rules-reference#per-asr-rule-alert-and-notification-details>

## ASR Rules

### *Modes*

#### Audit

- see how a rule would affect the user's process without blocking

#### Block

- user's process blocked

#### Warn

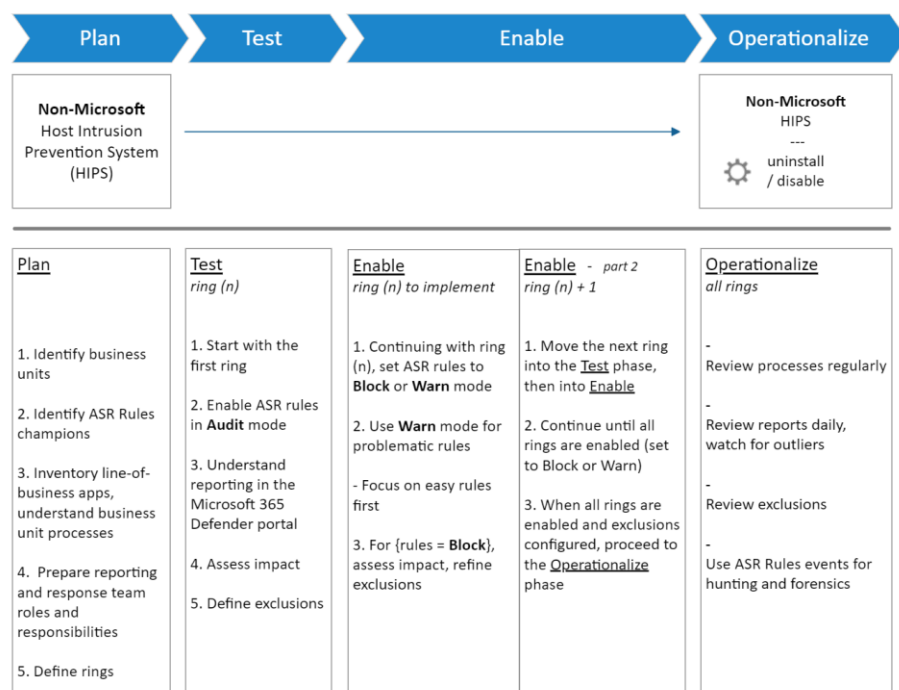
- user's process blocked, but can be overwritten by user

### *Notification & alerts*

If a rule is triggered:

- User gets a display notification
  - this could be customized
- Alert is generated
  - Shown in XDR portal
  - refer to source for reference

## ASR Rules deployment guide



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## ASR Rules Configuration

- Endpoint Security Policy
  - Template: Attack Surface Reduction Rules
- Intune
  - Attack surface reduction | Policy Profile ASR

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Source: <https://learn.microsoft.com/en-us/defender-endpoint/attack-surface-reduction-rules-reference#asr-rule-to-guid-matrix>

## ASR Rules Configuration

- PowerShell
  - Add-MpPreference
  - AttackSurfaceReductionRules\_Iids refer to [source](#)
  - ASRRuleActionTypes:
    - Disabled, Enabled, AuditMode, NotConfigured, Warn
- GPO
  - Computer Configuration > Administrative templates > Windows Components > Microsoft Defender Exploit Guard > Attack Surface Reduction
  - Value Name = GUID of Rule
  - Value = Mode as Integer

## ASR Rules Troubleshooting

- Querying active rules
  - PowerShell: Get-MpPreference
  - Properties AttackSurfaceReductionRules\_Iids and AttackSurfaceReductionRules\_Actions
- Querying events
  - Event Viewer: Microsoft-Windows-Windows Defender/Operational
- Get Antimalware logs
  - MpCmdRun.exe -getfiles (for MS Support)

## ASR Capabilities - Course sequence



Hardware Isolation

ASR rules

**Controlled folder access**

Device control

Network protection

Web protection

Application control

Exploit protection

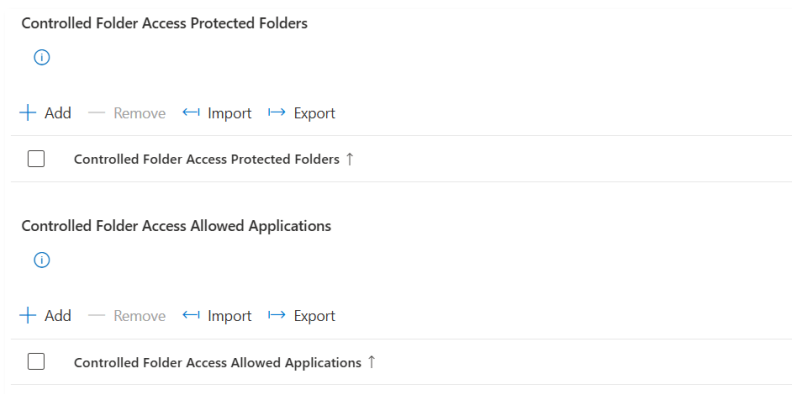
Source: <https://learn.microsoft.com/en-us/defender-endpoint/controlled-folders#what-is-controlled-folder-access>

## Controlled Folder Access

- *'Controlled folder access helps protect your valuable data from malicious apps and threats, such as ransomware. Controlled folder access protects your data by checking apps against a list of known, trusted apps.'*
- turned on by
  - Endpoint Security policy
  - Intune
  - Endpoint Config Manager
  - Windows Security App

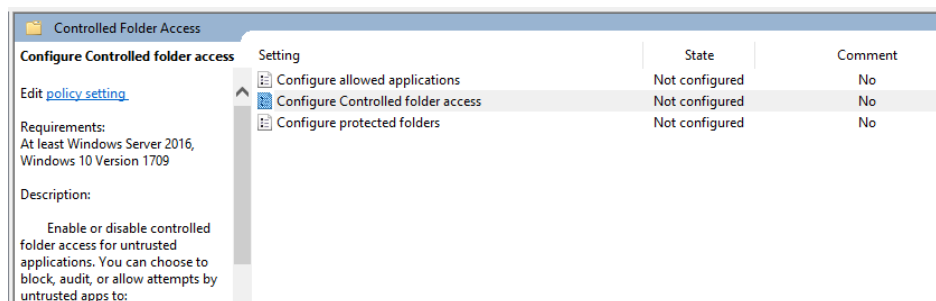
## Controlled Folder Access configuration

- Endpoint Security policy (Template ASR)
- Intune (Attack surface reduction | Policy Profile ASR)



## Controlled Folder Access configuration

- GPO
  - Computer Configuration > Administrative Templates
  - Windows Components > Microsoft Defender Antivirus > Microsoft Defender Exploit Guard > Controlled folder access





## Controlled Folder Access configuration

- PowerShell

```
Add-MpPreference -ControlledFolderAccessProtectedFolders @( 'c:\localData' )  
Add-MpPreference -ControlledFolderAccessAllowedApplications @( 'C:\windows\notepad.exe' )  
Set-MpPreference -EnableControlledFolderAccess Audit # Enalbed, Disabled
```

## ASR Capabilities - Course sequence



Hardware Isolation  
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Controlled folder access  
**Device control**  
Network protection  
Web protection  
Application control  
Exploit protection

## Device Control

*'Device control helps protect your organization from potential data loss, malware, or other cyberthreats by allowing or preventing certain devices to be connected to users' computers.'*

Capabilities in Windows OS

- Bitlocker
- Device installation

Capabilities in MDE

- Granular access control
- Reporting and advanced hunting

Also available in Endpoint data loss prevention (Endpoint DLP)

## Device Control

*Already in Windows OS*

- Bitlocker
- Device installation restriction

Managed via GPOs

*MDE*

- Granular access control
- Reporting and advanced hunting

Managed via

- Endpoint Security Policy
- Intune ASR policies
- GPO

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## Device Control Policies

Device installation restriction (examples)

- Prevent installation of removable devices
- Allow installation of devices using drivers that match these device setup classes
- Allow installation of devices that match any of these device instance IDs
- Allow installation of devices that match any of these device IDs

Take this for reference:

- [Policy CSP - DeviceInstallation](#)
- [USB device class drivers in Windows](#)

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## Device Control Policies

Removable Storage Access

- WPD Devices: Deny read access
- WPD Devices: Deny write access

Take this for reference:

- [WPDDevices DenyRead Access](#)
- [WPDDevices DenyWrite Access](#)

# Device Control Policies

## Bluetooth

Connectivity ^

Allow USB Connection ⓘ Not configured v

Allow Bluetooth ⓘ Not configured v

Bluetooth ^

Allow Advertising ⓘ Not configured v

Allow Discoverable Mode ⓘ Not configured v

Allow Preparing ⓘ Not configured v

Allow Prompted Proximal Connections ⓘ Not configured v

Services Allowed List ⓘ

+ Add - Remove ↔ Import ↔ Export

☐ Services Allowed List ↑

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Source: <https://learn.microsoft.com/en-us/defender-endpoint/device-control-deploy-manage-gpo>

## Device Control deployment

- Endpoint Security policy
  - Template Device Control
- Intune
  - Attack surface reduction | Policy Profile Device Control
- GPO
  - refer to source

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## ASR Capabilities - Course sequence



Hardware Isolation  
 ASR rules  
 Controlled folder access  
 Device control  
**Network protection**  
 Web protection  
 Application control  
 Exploit protection

## Network Protection

*'Network protection is an attack surface reduction capability that helps prevent people in your organization from accessing domains that are considered dangerous through applications.'*

Foundation for

- Web Threat in 3<sup>rd</sup> party Browsers
- Web Content Filtering
- Custom Indicators

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## Network Protection

### Prerequisites

- MDAV is in active mode
- Behavior Monitoring is enabled
- Cloud Protection is enabled
  - and network connectivity is functional

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## Network Protection

### Enabling

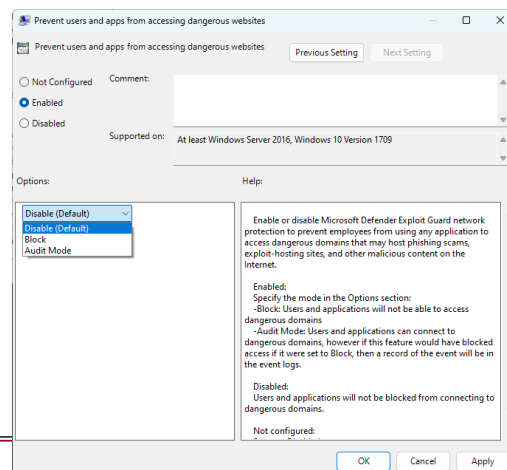
- Endpoint Security Policy
  - Template: Microsoft Defender Antivirus
  - Policy: Enable Network Protection
  - Setting: Enabled - Audit - Disabled
- PowerShell

```
Set-MpPreference -EnableNetworkProtection AuditMode  
# parameter values: Enabled or AuditMode or Disabled
```

# Network Protection

## Enabling

- GPO
  - Computer configuration
    - > Administrativ templates
  - Windows components
    - > Microsoft Defender Antivirus
    - > Microsoft Defender Exploit Guard
    - > Network protection



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# Network Protection

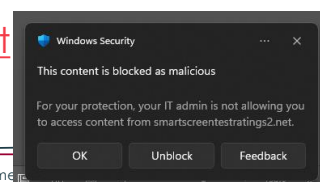
## Evaluation

- PowerShell

```
Get-MpPreference | Format-List -Property EnableNetworkProtection
# 0: Disabled
# 1: Enabled
# 2: AuditMode
```

```
Invoke-WebRequest -Uri 'https://smartscreentestratings2.net'
```

- Browser
  - Navigate to <https://smartscreentestratings2.net>



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## ASR Capabilities - Course sequence



Hardware Isolation  
ASR rules  
Controlled folder access  
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Network protection  
**Web protection**  
Application control  
Exploit protection

Source: <https://learn.microsoft.com/en-us/defender-endpoint/web-protection-overview>

## Web Protection

- 'Web protection lets you secure your devices against web threats and helps you regulate unwanted content.'
- made up of
  - Web threat protection
  - Web content filtering
  - Custom indicators
- discussed later



## ASR Capabilities - Course sequence



Hardware Isolation  
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**Application control**  
 Exploit protection

## Application Control

- *'[...] allows organizations to control which drivers and applications are allowed to run on their Windows clients.'*
- Policies used for configuration
- based on
  - Path from which app or file is launched
  - Attributes of app (Filename, version, hash)
  - Reputation of apps (MS Intelligent Security Graph)
  - Attributes of code signing certificate
  - ...
- Policies are applied to all users of a managed machine

Source: <https://learn.microsoft.com/en-us/windows/security/application-security/application-control/app-control-for-business/design/appcontrol-design-guide>  
<https://learn.microsoft.com/en-us/windows/security/application-security/application-control/app-control-for-business/design/appcontrol-wizard>

# Application Control

- Design Guide
  - refer to source
- Deployment - Higher steps
  - Prepare an endpoint as reference
  - Download [App Control for Business Wizard](#)
  - Create a policy file (\*.xml)
  - Convert the policy to a binary file
  - Deploy binary file

Source: <https://learn.microsoft.com/en-us/windows/security/application-security/application-control/app-control-for-business/deployment/appcontrol-deployment-guide>

# Application Control

## Deployment Methods

- Intune
- Config Manager
- GPO
  - save binary file on network share first
- Script

```
CiTool.exe --update-policy path-to-binary-file.cip
```

## ASR Capabilities - Course sequence



Hardware Isolation  
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**Exploit protection**

## Exploit Protection

*'Exploit protection automatically applies many exploit mitigation techniques to operating system processes and apps.'*

- Features of EMET (Enhanced Mitigation Experience Toolkit) included

### Configuration

- Enabled by default
- System and app settings could be set by
  - PowerShell, GPO, Intune (for enrolled devices), Config Manager
  - *not by Endpoint Security Policies*

Source: <https://learn.microsoft.com/en-us/defender-endpoint/exploit-protection-reference>

## Exploits Protection - System and Apps

Mitigation	Description
Control flow guard (CFG)	... mitigates the risk of attackers using memory corruption vulnerabilities by protecting indirect function calls. For example, an attacker may use a buffer overflow vulnerability to overwrite memory containing a function pointer, and replace that function pointer with a pointer to executable code of their choice.
Data Execution Prevention (DEP)	... helps protect against an attacker injecting malicious code into the process, such as through a buffer overflow, and then executing that code.
Force randomization of images (Mandatory ASLR)	Address Space Layout Randomization (ASLR) mitigates the risk of an attacker using their knowledge of the memory layout of the system in order to execute code that is already present in process memory and already marked as executable.
Randomize memory allocations (Bottom-up ASLR)	... adds entropy to relocations, so their location is randomized and therefore less predictable.
Validate exception chains (SEHOP)	... is a mitigation against the <i>Structured Exception Handler (SEH) overwrite</i> exploitation technique.
Validate heap integrity	... mitigation increases the protection level of heap mitigations in Windows, by causing the application to terminate if a heap corruption is detected. (Heap = dynamic memory for processes)

Source: <https://learn.microsoft.com/en-us/defender-endpoint/exploit-protection-reference>

## Exploits Protection - Apps only

Mitigation	Description
Arbitrary code guard (ACG)	Prevents the introduction of non-image-backed executable code and prevents code pages from being modified. Can optionally allow thread opt-out and allow remote downgrade (configurable only with PowerShell).
Block remote images	Prevents loading of images from remote devices.
Block untrusted fonts	Prevents loading any GDI-based fonts not installed in the system fonts directory, notably fonts from the web.
Code integrity guard	Restricts loading of images signed by Microsoft, WHQL, or higher. Can optionally allow Microsoft Store signed images.
Disable extension points	Disables various extensibility mechanisms that allow DLL injection into all processes, such as AppInit DLLs, window hooks, and Winsock service providers.
Disable Win32k system calls	Prevents an app from using the Win32k system call table.
Don't allow child processes	Prevents an app from creating child processes.
and some more ...	refer to source

# Exploit Protection

## Configuration with PowerShell

- System level

```
# Enalbes DEP for the system level
Set-ProcessMitigation -System -Enable DEP
# Disables DEP for the system level
Set-ProcessMitigation -System -Disable DEP
# Reset DEP for the system level
Set-ProcessMitigation -System -Remove -Disable DEP
# Reset the system level
Set-ProcessMitigation -System -Reset
```

- possible values for Enable/Disable parameter:
  - use Ctrl + Space

# Exploit Protection

## Configuration with PowerShell

- App level

```
# Enalbes CFG only for a single app
Set-ProcessMitigation -Name C:\Windows\notepad.exe -Enable CFG
```

- multiple mitigations must be separated by commas
- possible values for Enable/Disable parameter:
  - use Ctrl + Space
- Export all settings

```
Get-ProcessMitigation -RegistryConfigFilePath c:\Temp\myExploitPolicy.xml|
```

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## Exploit Protection

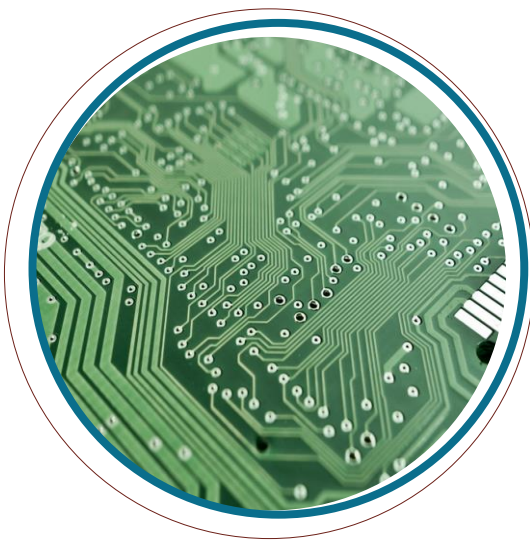
Configuration with PowerShell

- configfile

```
# Export all settings
Get-ProcessMitigation -RegistryConfigFilePath c:\Temp\myPolicy.xml

# Import all settings
Set-ProcessMitigation -PolicyFilePath C:\Temp\myPolicy.xml
```

- This file could be used for a GPO or an Intune Device configuration policy

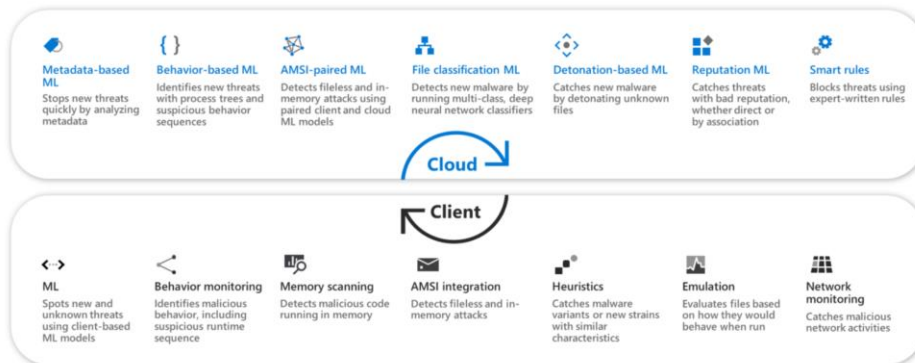


## Next-generation Protection

Source: <https://learn.microsoft.com/en-us/defender-endpoint/next-generation-protection>  
<https://learn.microsoft.com/en-us/defender-endpoint/adv-tech-of-mdav>

## Next-generation Protection

'Next-generation protections, such as Microsoft Defender Antivirus blocks malware using local and cloud-based machine learning models, behavior analysis, and heuristics. Microsoft Defender Antivirus uses predictive technologies, machine learning, applied science, and artificial intelligence to detect and block malware at the first sign of abnormal behavior.'



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## Next-generation Protection

Capabilities

- Cloud protection
- Tamper protection
- Behavioral, heuristic and real-time protection

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## Next-generation Protection

Microsoft Defender for Antivirus

Capabilities

- Anomaly detection
  - detects not only known malware
  - through ML and cloud protection
- works on- and offline
- stops threats based on behaviours and process trees
- compatible with other antivirus/antimalware solutions

Source: <https://learn.microsoft.com/en-us/defender-endpoint/microsoft-defender-antivirus-windows#microsoft-defender-antivirus-processes-and-services>

## Next-generation Protection

Microsoft Defender for Antivirus - Services

Process or service	Where to view its status
<b>Microsoft Defender Antivirus Core service</b> (MdCoreSvc)	<ul style="list-style-type: none"> <li>- <b>Processes</b> tab: Antimalware Core Service</li> <li>- <b>Details</b> tab: MpDefenderCoreService.exe</li> <li>- <b>Services</b> tab: Microsoft Defender Core Service</li> </ul>
<b>Microsoft Defender Antivirus service</b> (WinDefend)	<ul style="list-style-type: none"> <li>- <b>Processes</b> tab: Antimalware Service Executable</li> <li>- <b>Details</b> tab: MsMpEng.exe</li> <li>- <b>Services</b> tab: Microsoft Defender Antivirus</li> </ul>
<b>Microsoft Defender Antivirus Network Realtime Inspection service</b> (WdNisSvc)	<ul style="list-style-type: none"> <li>- <b>Processes</b> tab: Microsoft Network Realtime Inspection Service</li> <li>- <b>Details</b> tab: NisSrv.exe</li> <li>- <b>Services</b> tab: Microsoft Defender Antivirus Network Inspection Service</li> </ul>
<b>Microsoft Defender Antivirus command-line utility</b>	<ul style="list-style-type: none"> <li>- <b>Processes</b> tab: N/A</li> <li>- <b>Details</b> tab: MpCmdRun.exe</li> <li>- <b>Services</b> tab: N/A</li> </ul>
<b>Microsoft Security Client Policy Configuration Tool</b>	<ul style="list-style-type: none"> <li>- <b>Processes</b> tab: N/A</li> <li>- <b>Details</b> tab: ConfigSecurityPolicy.exe</li> <li>- <b>Services</b> tab: N/A</li> </ul>



Source: <https://learn.microsoft.com/en-us/defender-endpoint/microsoft-defender-antivirus-windows#comparing-active-mode-passive-mode-and-disabled-mode>

# Next-generation Protection

## Microsoft Defender for Antivirus - Modes

Mode	What happens
Active mode	In active mode, Microsoft Defender Antivirus is used as the primary antivirus app on the device. Files are scanned, threats are remediated, and detected threats are listed in your organization's security reports and in your Windows Security app.
Passive mode	In passive mode, Microsoft Defender Antivirus isn't used as the primary antivirus app on the device. Files are scanned, and detected threats are reported, but threats aren't remediated by Microsoft Defender Antivirus.  <b>IMPORTANT:</b> Microsoft Defender Antivirus can run in passive mode only on endpoints that are onboarded to Microsoft Defender for Endpoint. See <a href="#">Requirements for Microsoft Defender Antivirus to run in passive mode</a> .
Disabled or uninstalled	When disabled or uninstalled, Microsoft Defender Antivirus isn't used. Files aren't scanned, and threats aren't remediated. In general, we don't recommend disabling or uninstalling Microsoft Defender Antivirus.

```
Get-MpComputerStatus | Format-List -Property AMRunningMode
```

Source: <https://learn.microsoft.com/en-us/defender-endpoint/microsoft-defender-antivirus-windows#comparing-active-mode-passive-mode-and-disabled-mode>

# Next-generation Protection

## Microsoft Defender for Antivirus - Configuration

- MDE Endpoint Security Policy Management
- Microsoft Intune
- Microsoft Configuration Manager
- Group Policy
- PowerShell cmdlets
- WMI

## Next-generation Protection

### Cloud protection

- *'To identify new threats dynamically, next-generation technologies work with large sets of interconnected data in the Microsoft Intelligent Security Graph and powerful artificial intelligence (AI) systems driven by advanced machine learning models. Cloud protection works together with Microsoft Defender Antivirus to deliver accurate, real-time, and intelligent protection.'*

### Foundation for

- Checking against metadata
- Sample submission
- Tamper protection
- ...

Source: <https://learn.microsoft.com/en-us/defender-endpoint/specify-cloud-protection-level-microsoft-defender-antivirus>

## Next-generation Protection

### Cloud protection level

- Not configured: Default state.
- High: Applies a strong level of detection.
- High plus: Uses the High level and applies extra protection measures (might affect client performance)
- Zero tolerance: Blocks all unknown executables.

## Next-generation Protection

### Cloud protection timeout

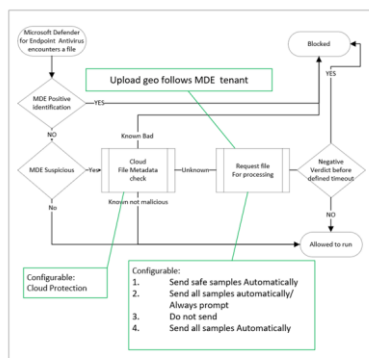
- While investigating a file it is block
- default 10 seconds
- timeout could be extended

Source: <https://learn.microsoft.com/en-us/defender-endpoint/cloud-protection-microsoft-antivirus-sample-submission>

## Next-generation Protection

### Cloud protection Sample submission

#### Microsoft Defender For Endpoint Cloud-delivered Protection



Setting	Description
<b>Send safe samples automatically</b>	<ul style="list-style-type: none"> <li>- Safe samples are samples considered to not commonly contain PII data. Examples include .bat, .scr, .dll, and .exe.</li> <li>- If file is likely to contain PII, the user gets a request to allow file sample submission.</li> <li>- This option is the default configuration on Windows, macOS, and Linux.</li> </ul>
<b>Always Prompt</b>	<ul style="list-style-type: none"> <li>- If configured, the user is always prompted for consent before file submission</li> <li>- This setting isn't available in macOS and Linux cloud protection</li> </ul>
<b>Send all samples automatically</b>	<ul style="list-style-type: none"> <li>- If configured, all samples are sent automatically</li> <li>- If you would like sample submission to include macros embedded in Word docs, you must choose <b>Send all samples automatically</b></li> <li>- This setting isn't available on macOS cloud protection</li> </ul>
<b>Do not send</b>	<ul style="list-style-type: none"> <li>- Prevents "block at first sight" based on file sample analysis</li> <li>- "Don't send" is the equivalent to the "Disabled" setting in macOS policy and "None" setting in Linux policy.</li> <li>- Metadata is sent for detections even when sample submission is disabled</li> </ul>

---

## Next-generation Protection

### Cloud protection - Configuration

- Endpoint security policy | Template Defender AV
- Policies:
  - Allow Cloud Protection
  - Cloud Block level
  - Cloud extended timeout
  - Submit Samples Consent

---

## Next-generation Protection

### Cloud protection - Configuration

- PowerShell

```
Set-MpPreference -MAPSReporting Advanced  
Set-MpPreference -SubmitSamplesConsent SendAllSamples
```

- only Cloud protection (MAPSReporting) and SubmitSampleConsent is available
- GPO
  - for all settings possible
  - refer to the [documentation](#)

Source: <https://learn.microsoft.com/en-us/defender-endpoint/prevent-changes-to-security-settings-with-tamper-protection>

## Next-generation Protection

### Tamper protection

- *'Tamper protection is a capability in Microsoft Defender for Endpoint that helps protect certain security settings, such as virus and threat protection, from being disabled or changed.'*
- Configurable in MDE Settings | Endpoint | Advanced Features
- Turned on by default
- to exclude single devices, use Intune or troubleshooting mode

Source: <https://learn.microsoft.com/en-us/defender-endpoint/behavior-monitor>

## Next-generation Protection

### Behavior monitoring

*'Monitors process behavior to detect and analyze potential threats based on the behavior of applications, services, and files. Rather than relying solely on signature-based detection (which identifies known malware patterns), behavior monitoring focuses on observing how software behaves in real-time.'*

- Benefits
  - defending against fileless malware
  - Real-Time threat detection
  - Dynamic Approach

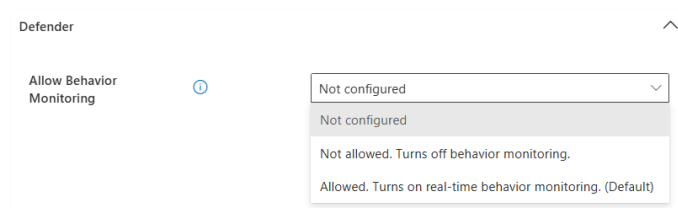
Source: <https://learn.microsoft.com/en-us/defender-endpoint/behavior-monitor>

# Next-generation Protection

Behavior monitoring

Configuration

- Endpoint Security Settings



- PowerShell
 

```
Set-MpPreference -DisableBehaviorMonitoring $false
Get-MpPreference | Format-List -Property DisableBehaviorMonitoring
```
- GPO
- ...

Source: <https://learn.microsoft.com/en-us/defender-endpoint/edr-in-block-mode?view=o365-worldwide>

# Next-generation Protection

EDR in block mode

'[...] allows Microsoft Defender Antivirus to take actions on **post-breach**, behavioral EDR detections.'

- Benefits
  - MDAV in active or passive mode
  - artifacts are classified as malicious in cloud and
  - remediated on endpoint

Configuration

- Settings | Endpoints | Adv Features: EDR in block mode: On



## End of Module 3