#JonSecOps

Detecting Local Account Creation (T1136.001) with Atomic Red Team and Splunk

FIGURE 1: LOGICAL DIAGRAM

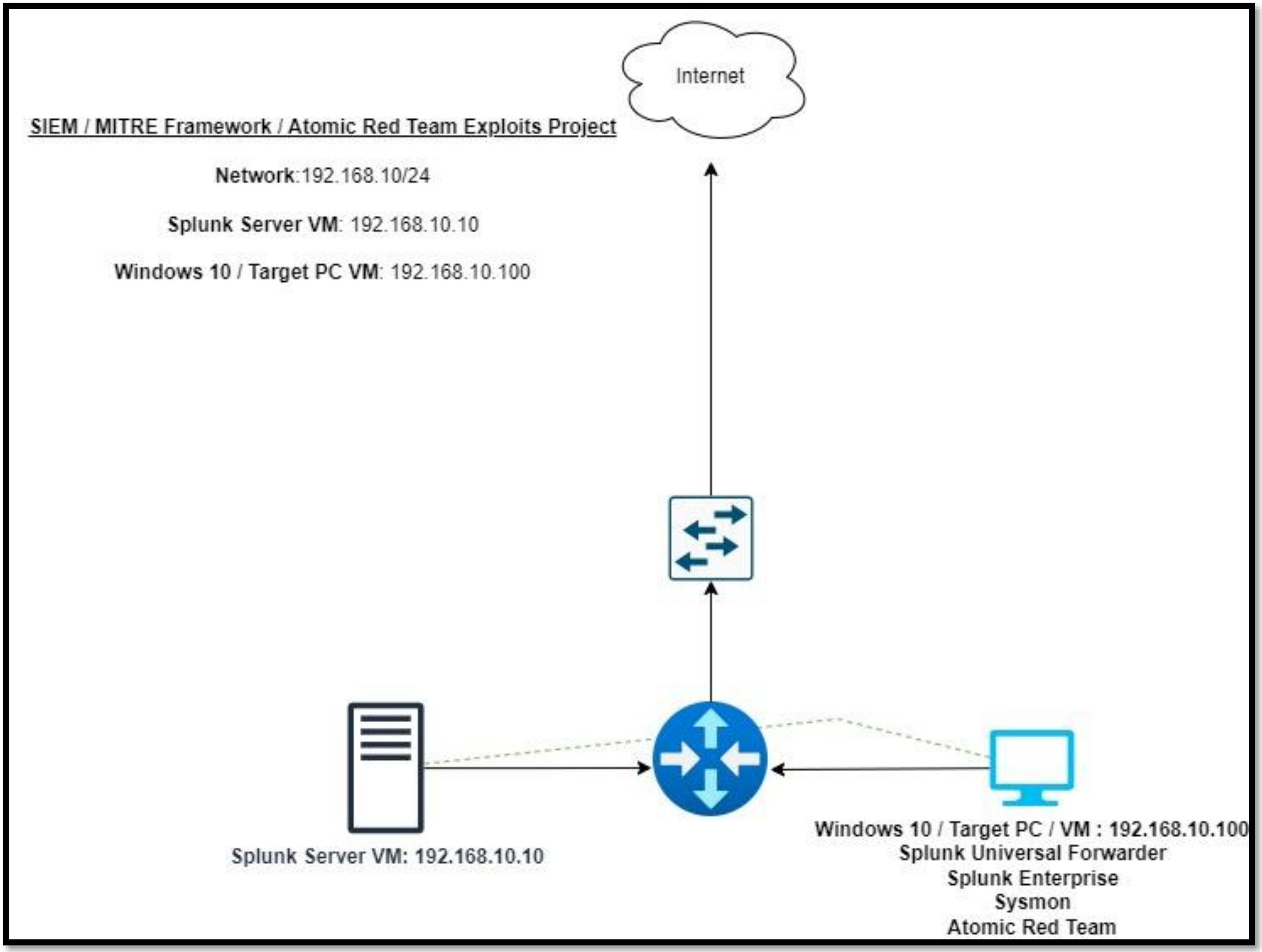
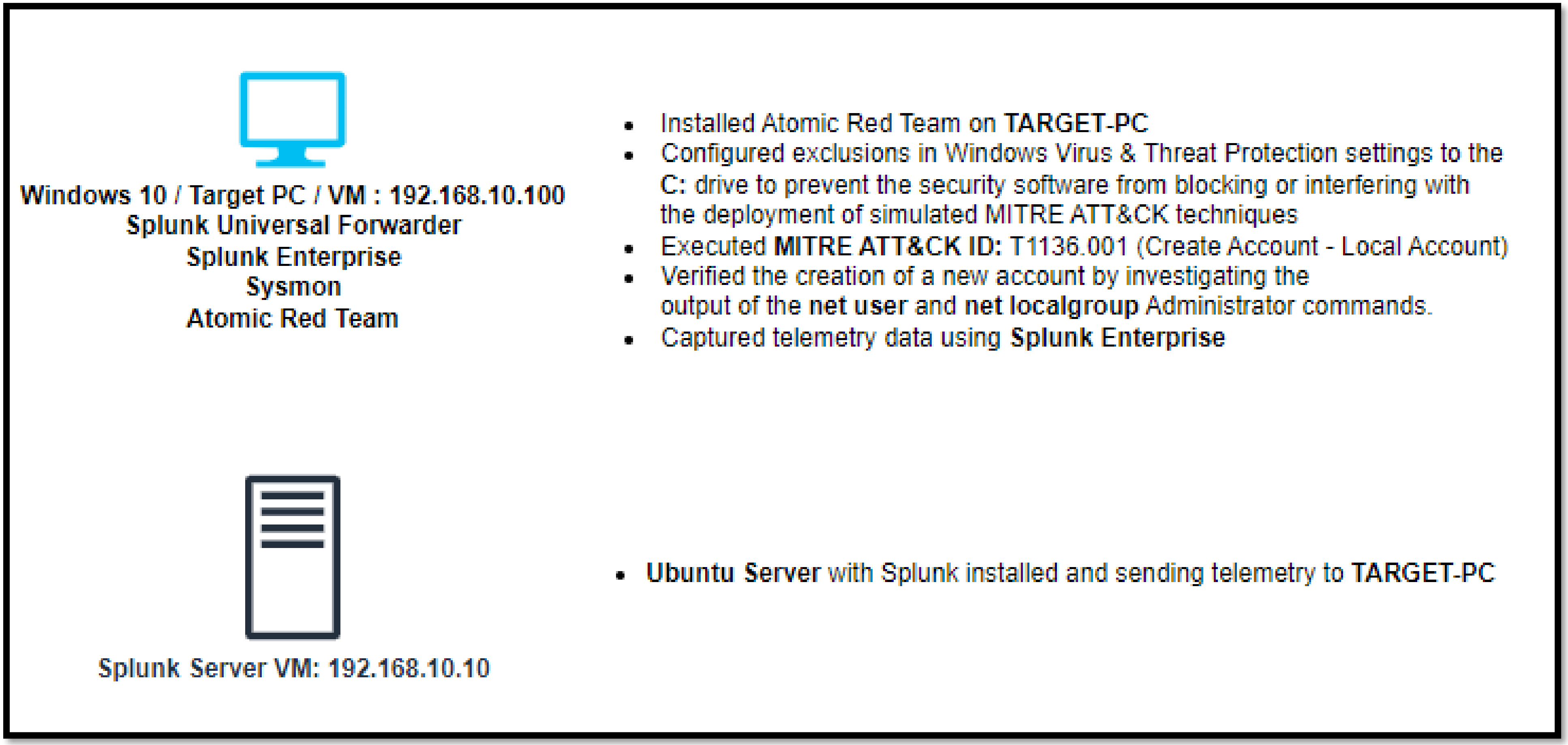

Internet
SIEM / MITRE Framework / Atomic Red Team Exploits Project
Network:192.168.10/24
Splunk Server VM: 192.168.10.10
Windows 10 / Target PC VM: 192.168.10.100
Splunk Server VM: 192.168.10.10
Windows 10 / Target PC / VM : 192.168.10.100
Splunk Universal Forwarder
Splunk Enterprise
Sysmon
Atomic Red Team

FIGURE 2: SYSTEM CONFIGURATIONS



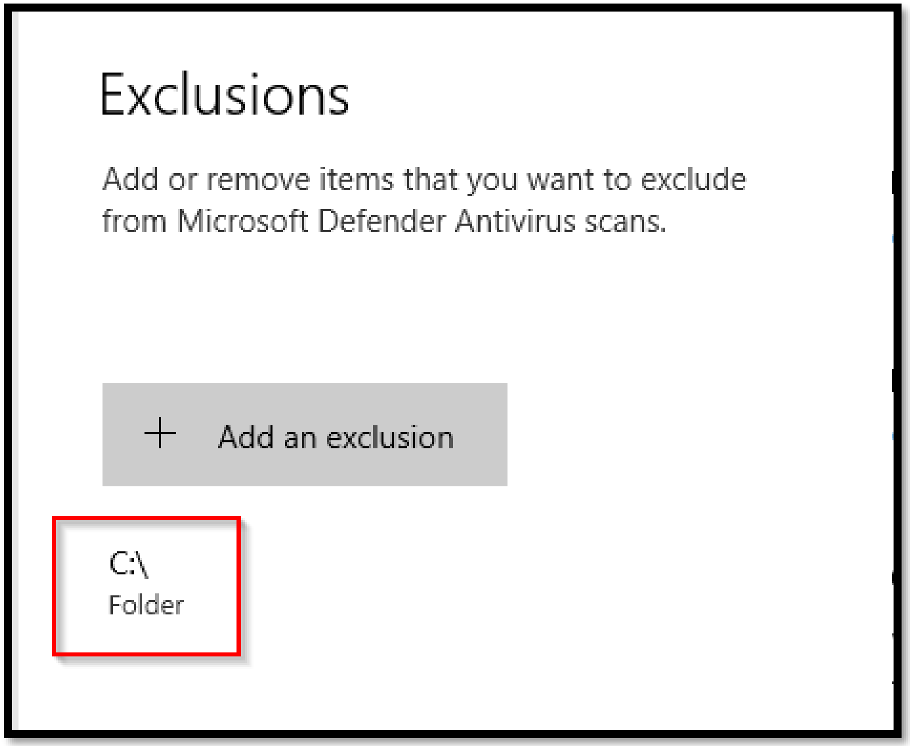
Windows 10 / Target PC / VM : 192.168.10.100
Splunk Universal Forwarder
Splunk Enterprise
Sysmon
Atomic Red Team

- Installed Atomic Red Team on **TARGET-PC**
- Configured exclusions in Windows Virus & Threat Protection settings to the C: drive to prevent the security software from blocking or interfering with the deployment of simulated MITRE ATT&CK techniques
- Executed **MITRE ATT&CK ID:** T1136.001 (Create Account - Local Account)
- Verified the creation of a new account by investigating the output of the **net user** and **net localgroup** Administrator commands.
- Captured telemetry data using **Splunk Enterprise**

Splunk Server VM: 192.168.10.10

- **Ubuntu Server** with Splunk installed and sending telemetry to **TARGET-PC**

FIGURE 3: CONFIGURED EXCUSIONS IN WINDOWS VIRUS & THREAT PROTECTION SETTINGS

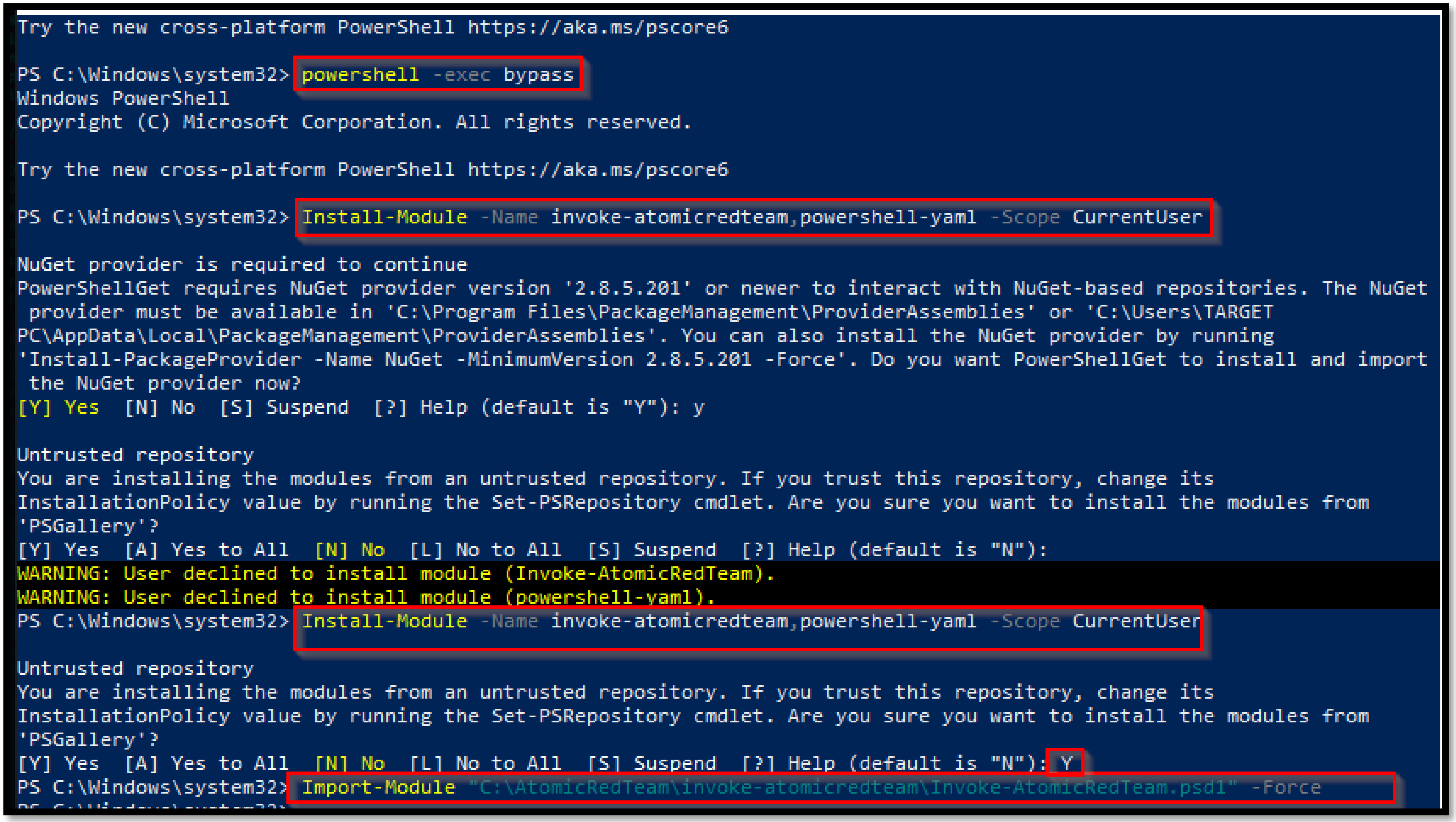


Exclusions

Add or remove items that you want to exclude from Microsoft Defender Antivirus scans.

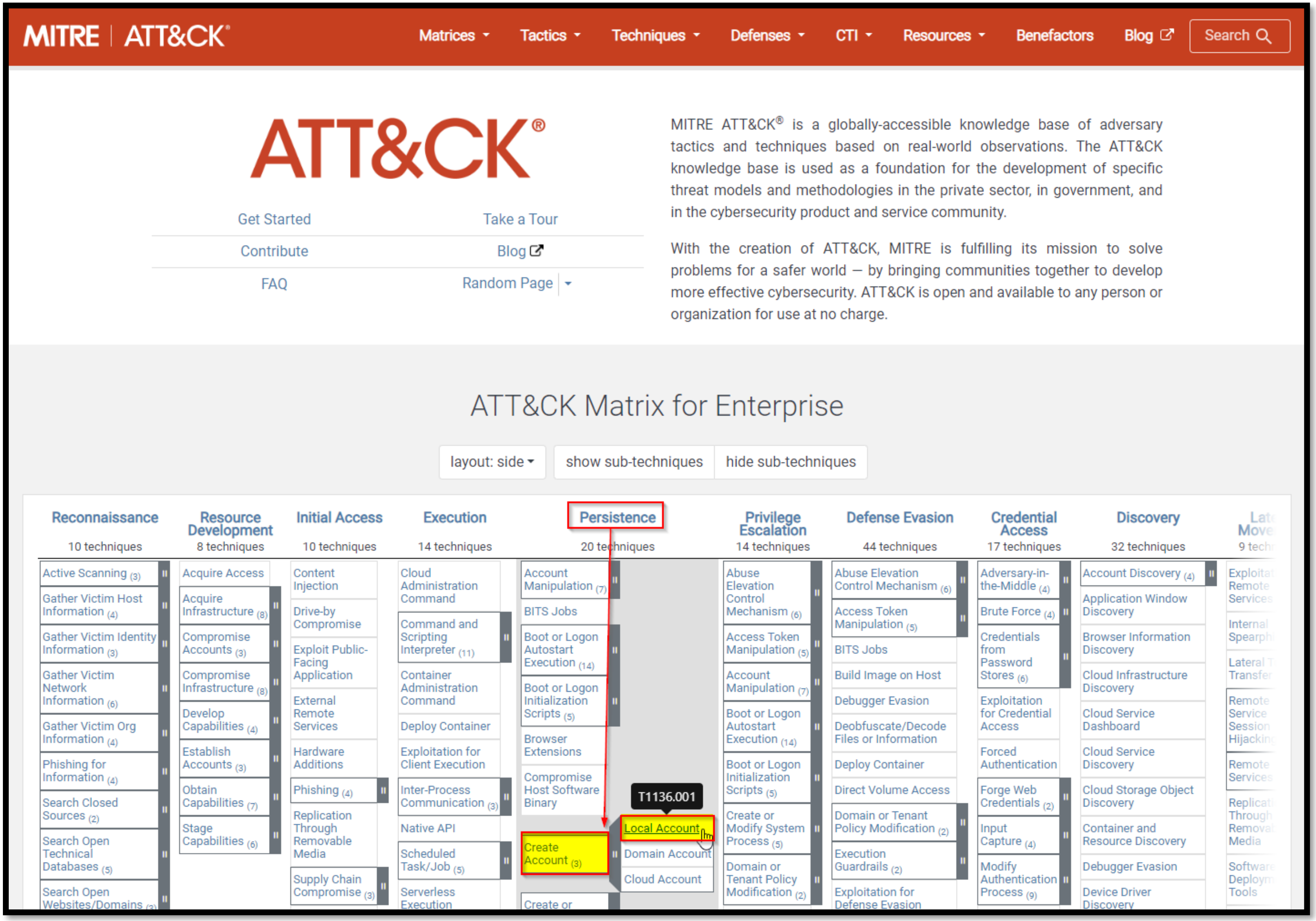
C:\
Folder

FIGURE 4: ATOMIC RED TEAM INSTALLATION ON TARGET PC



```
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Windows\system32> powershell -exec bypass
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Windows\system32> Install-Module -Name invoke-atomicredteam,powershell-yaml -Scope CurrentUser

NuGet provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories. The NuGet
 provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or 'C:\Users\TARGET
PC\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet provider by running
'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want PowerShellGet to install and import
 the NuGet provider now?
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y

Untrusted repository
You are installing the modules from an untrusted repository. If you trust this repository, change its
InstallationPolicy value by running the Set-PSRepository cmdlet. Are you sure you want to install the modules from
'PSGallery'?
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help (default is "N"):
WARNING: User declined to install module (Invoke-AtomicRedTeam).
WARNING: User declined to install module (powershell-yaml).
PS C:\Windows\system32> Install-Module -Name invoke-atomicredteam,powershell-yaml -Scope CurrentUser

Untrusted repository
You are installing the modules from an untrusted repository. If you trust this repository, change its
InstallationPolicy value by running the Set-PSRepository cmdlet. Are you sure you want to install the modules from
'PSGallery'?
[Y] Yes  [A] Yes to All  [N] No  [L] No to All  [S] Suspend  [?] Help (default is "N"): Y
PS C:\Windows\system32> Import-Module "C:\AtomicRedTeam\invoke-atomicredteam\Invoke-AtomicRedTeam.psd1" -Force
PS C:\Windows\system32>
```

FIGURE 5: MITRE FRAMEWORK T1136.001 TACTIC & TECHNIQUE INFORMATION



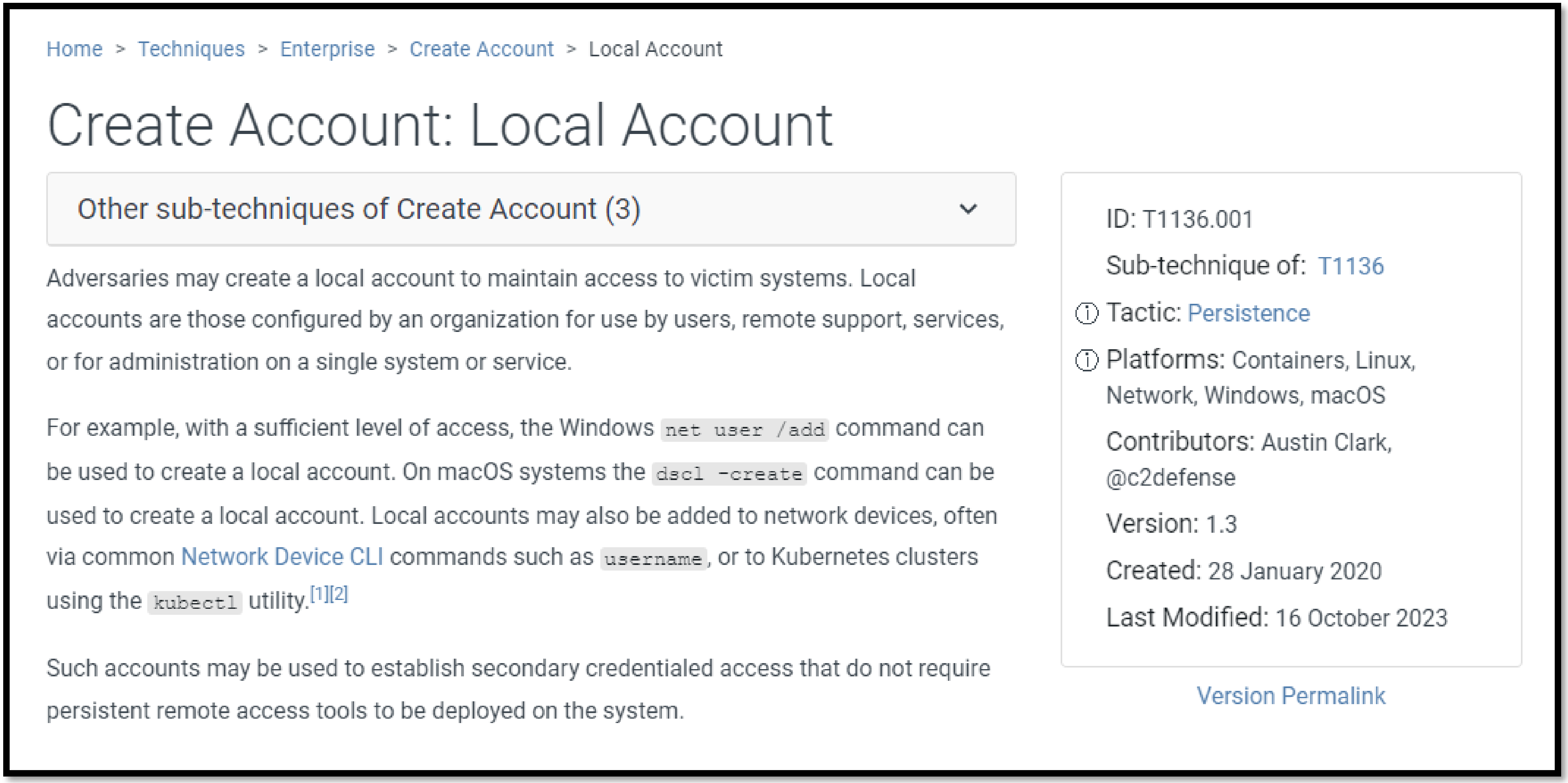
MITRE ATT&CK® is a globally-accessible knowledge base of adversary tactics and techniques based on real-world observations. The ATT&CK knowledge base is used as a foundation for the development of specific threat models and methodologies in the private sector, in government, and in the cybersecurity product and service community.

With the creation of ATT&CK, MITRE is fulfilling its mission to solve problems for a safer world — by bringing communities together to develop more effective cybersecurity. ATT&CK is open and available to any person or organization for use at no charge.

ATT&CK Matrix for Enterprise

Reconnaissance 10 techniques	Resource Development 8 techniques	Initial Access 10 techniques	Execution 14 techniques	Persistence 20 techniques	Privilege Escalation 14 techniques	Defense Evasion 44 techniques	Credential Access 17 techniques	Discovery 32 techniques	Lat Move 9 tech
Active Scanning (3)	Acquire Access	Content Injection	Cloud Administration Command	Account Manipulation (7)	Abuse Elevation Control Mechanism (6)	Abuse Elevation Control Mechanism (6)	Adversary-in-the-Middle (4)	Account Discovery (4)	Exploita Remote Services
Gather Victim Host Information (4)	Acquire Infrastructure (8)	Drive-by Compromise	Command and Scripting Interpreter (11)	BITS Jobs	Access Token Manipulation (5)	Access Token Manipulation (5)	Brute Force (4)	Application Window Discovery	Internal Spearph
Gather Victim Identity Information (3)	Compromise Accounts (3)	Exploit Public-Facing Application	Container Administration Command	Boot or Logon Autostart Execution (14)	Account Manipulation (7)	BITS Jobs	Credentials from Password Stores (6)	Browser Information Discovery	Lateral T Transfer
Gather Victim Network Information (6)	Compromise Infrastructure (8)	External Remote Services	Deploy Container	Boot or Logon Initialization Scripts (5)	Boot or Logon Autostart Execution (14)	Build Image on Host	Exploitation for Credential Access	Cloud Infrastructure Discovery	Remote Service Session Hijackin
Gather Victim Org Information (4)	Develop Capabilities (4)	Hardware Additions	Exploitation for Client Execution	Browser Extensions	Boot or Logon Initialization Scripts (5)	Debugger Evasion	Forced Authentication	Cloud Service Dashboard	Remote Services
Phishing for Information (4)	Establish Accounts (3)	Phishing (4)	Inter-Process Communication (3)	Compromise Host Software Binary	Create or Modify System Process (5)	Deobfuscate/Decode Files or Information	Forge Web Credentials (2)	Cloud Service Discovery	Replicati Through Removal Media
Search Closed Sources (2)	Obtain Capabilities (7)	Replication Through Removable Media	Native API	Create Account (3) T1136.001 Local Account Domain Account Cloud Account	Domain or Tenant Policy Modification (2)	Deploy Container	Input Capture (4)	Cloud Storage Object Discovery	Software Deploym Tools
Search Open Technical Databases (5)	Stage Capabilities (6)	Supply Chain Compromise (3)	Scheduled Task/Job (5)	Create or		Direct Volume Access	Modify Authentication Process (9)	Container and Resource Discovery	
Search Open Websites/Domains (3)			Serverless Execution			Domain or Tenant Policy Modification (2)		Debugger Evasion	
						Execution Guardrails (2)		Device Driver Discovery	
						Exploitation for Defense Evasion			

- For this attack the Persistence tactic / Create Account/ Local Account T1136.001 technique is used.



Home > Techniques > Enterprise > Create Account > Local Account

Create Account: Local Account

Other sub-techniques of Create Account (3)

Adversaries may create a local account to maintain access to victim systems. Local accounts are those configured by an organization for use by users, remote support, services, or for administration on a single system or service.

For example, with a sufficient level of access, the Windows `net user /add` command can be used to create a local account. On macOS systems the `dscl -create` command can be used to create a local account. Local accounts may also be added to network devices, often via common Network Device CLI commands such as `username`, or to Kubernetes clusters using the `kubectl` utility.[1][2]

Such accounts may be used to establish secondary credentialed access that do not require persistent remote access tools to be deployed on the system.

ID: T1136.001

Sub-technique of: T1136

ⓘ Tactic: Persistence

ⓘ Platforms: Containers, Linux, Network, Windows, macOS

Contributors: Austin Clark, @c2defense

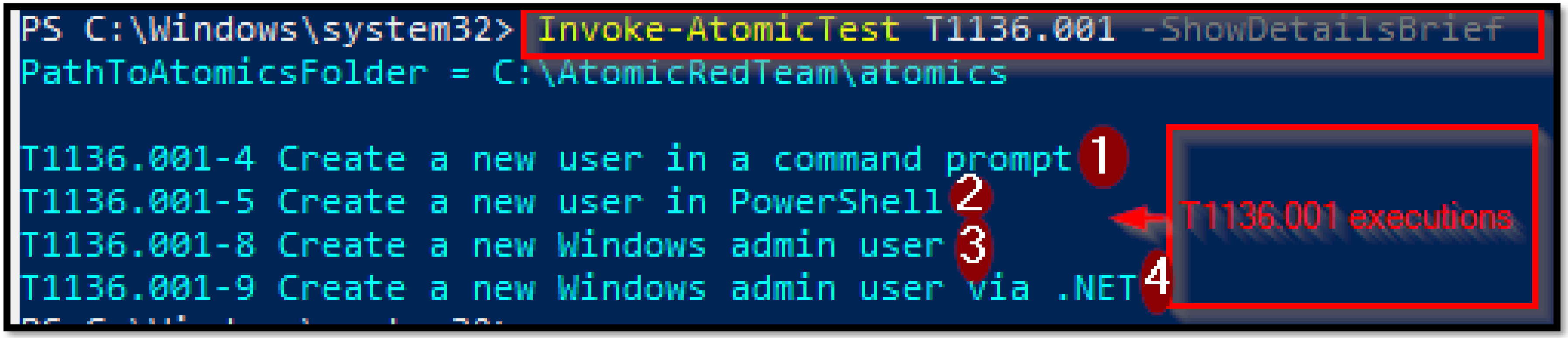
Version: 1.3

Created: 28 January 2020

Last Modified: 16 October 2023

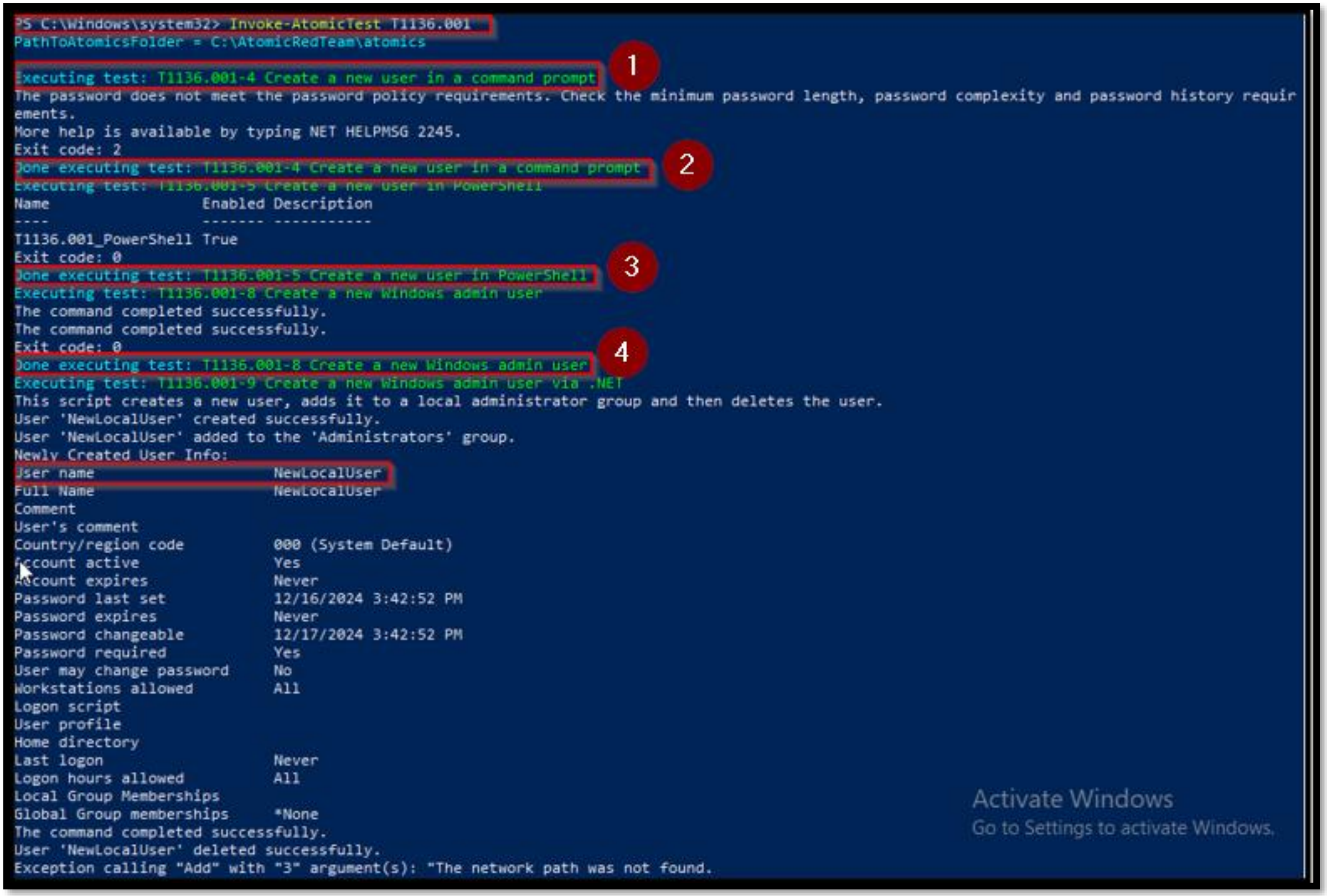
Version Permalink

FIGURE 6: AVALIABLE EXECUTIONS WITHIN T1136.001 TECHNIQUE DISPLAYED IN POWERSHELL



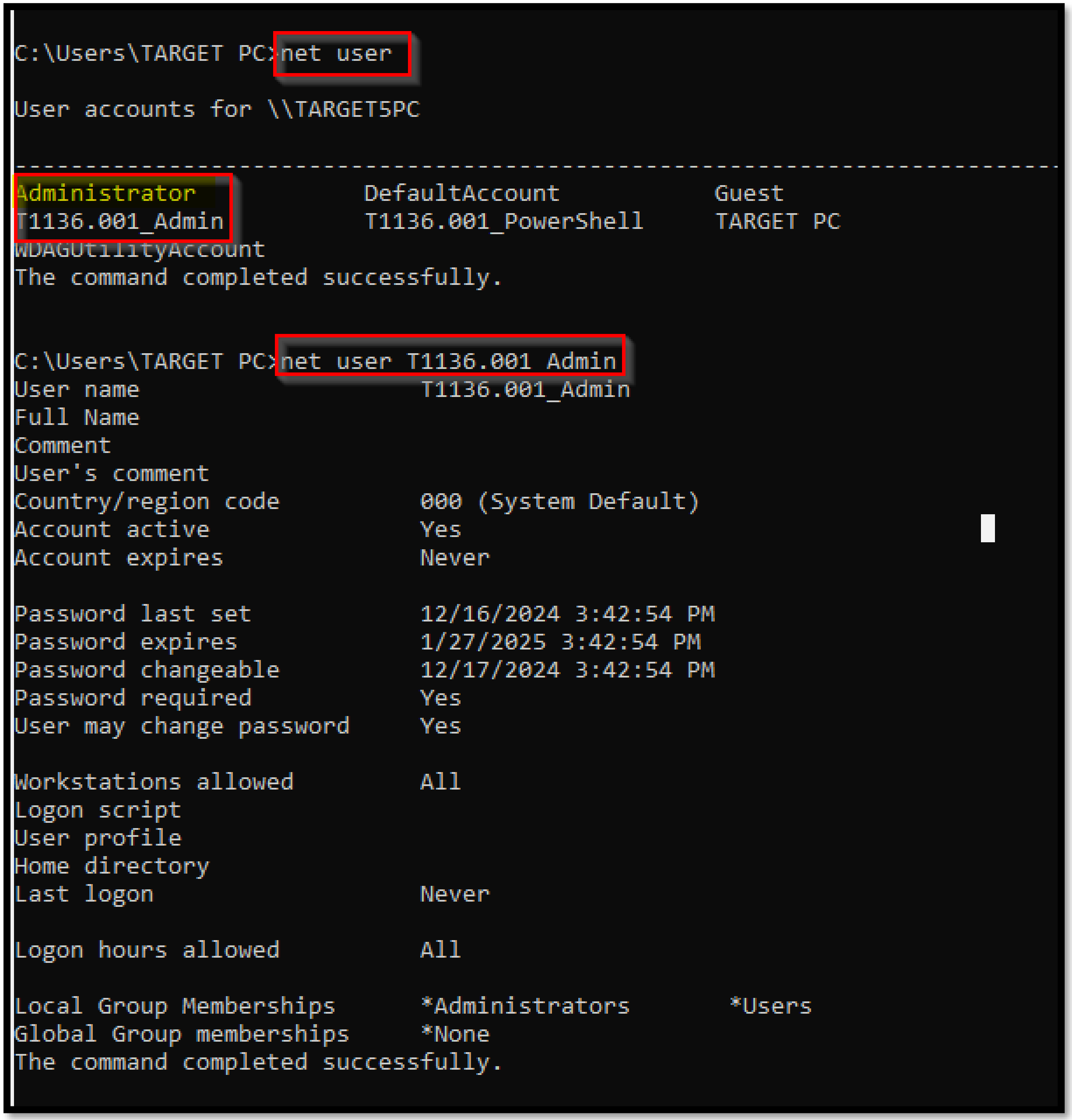
```
PS C:\Windows\system32> Invoke-AtomicTest T1136.001 -ShowDetailsBrief
PathToAtomicsFolder = C:\AtomicRedTeam\atomics

T1136.001-4 Create a new user in a command prompt
T1136.001-5 Create a new user in PowerShell
T1136.001-8 Create a new Windows admin user
T1136.001-9 Create a new Windows admin user via .NET
```

FIGURE 7: T1136.001 DEPLOYMENT & EXECUTIONS

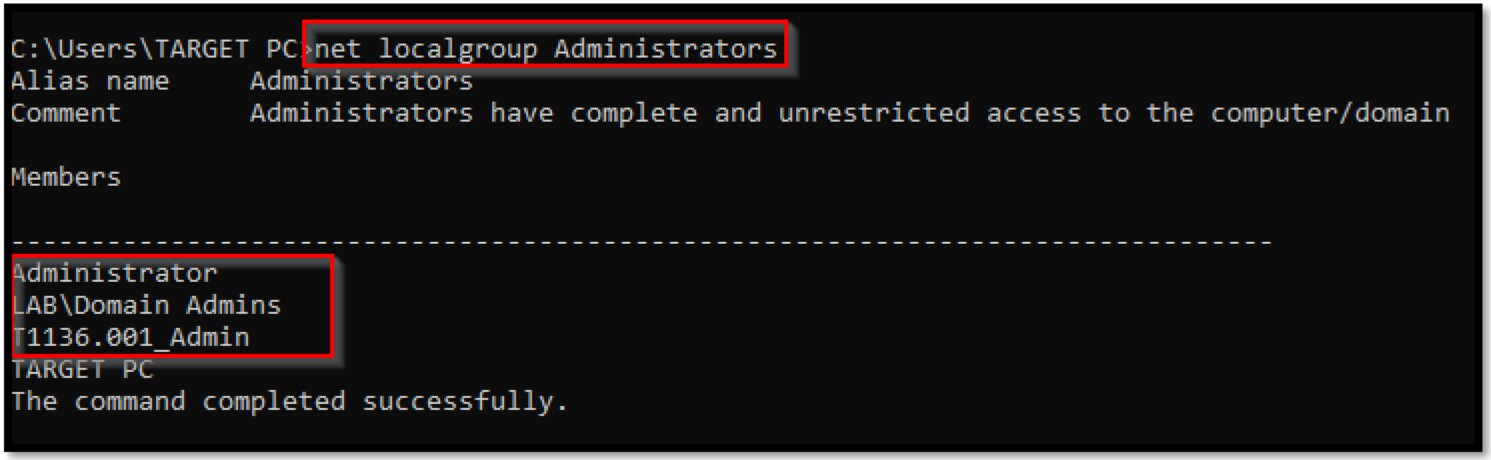


```
PS C:\Windows\system32> Invoke-AtomicTest T1136.001
PathToAtomicsFolder = C:\AtomicRedTeam\atomics

Executing test: T1136.001-4 Create a new user in a command prompt
The password does not meet the password policy requirements. Check the minimum password length, password complexity and password history requir
ements.
More help is available by typing NET HELPMSG 2245.
Exit code: 2
Done executing test: T1136.001-4 Create a new user in a command prompt
Executing test: T1136.001-5 Create a new user in PowerShell
Name                 Enabled Description
----                 ------- -----------
T1136.001_PowerShell True
Exit code: 0
Done executing test: T1136.001-5 Create a new user in PowerShell
Executing test: T1136.001-8 Create a new Windows admin user
The command completed successfully.
The command completed successfully.
Exit code: 0
Done executing test: T1136.001-8 Create a new Windows admin user
Executing test: T1136.001-9 Create a new Windows admin user via .NET
This script creates a new user, adds it to a local administrator group and then deletes the user.
User 'NewLocalUser' created successfully.
User 'NewLocalUser' added to the 'Administrators' group.
Newly Created User Info:
User name                    NewLocalUser
Full Name                    NewLocalUser
Comment
User's comment
Country/region code          000 (System Default)
Account active               Yes
Account expires              Never
Password last set            12/16/2024 3:42:52 PM
Password expires             Never
Password changeable          12/17/2024 3:42:52 PM
Password required            Yes
User may change password     No
Workstations allowed         All
Logon script
User profile
Home directory
Last logon                   Never
Logon hours allowed          All
Local Group Memberships
Global Group memberships     *None
The command completed successfully.
User 'NewLocalUser' deleted successfully.
Exception calling "Add" with "3" argument(s): "The network path was not found.
```

FIGURE 8: TARGET PC NET USER & NET LOCALGROUP INFORMATION

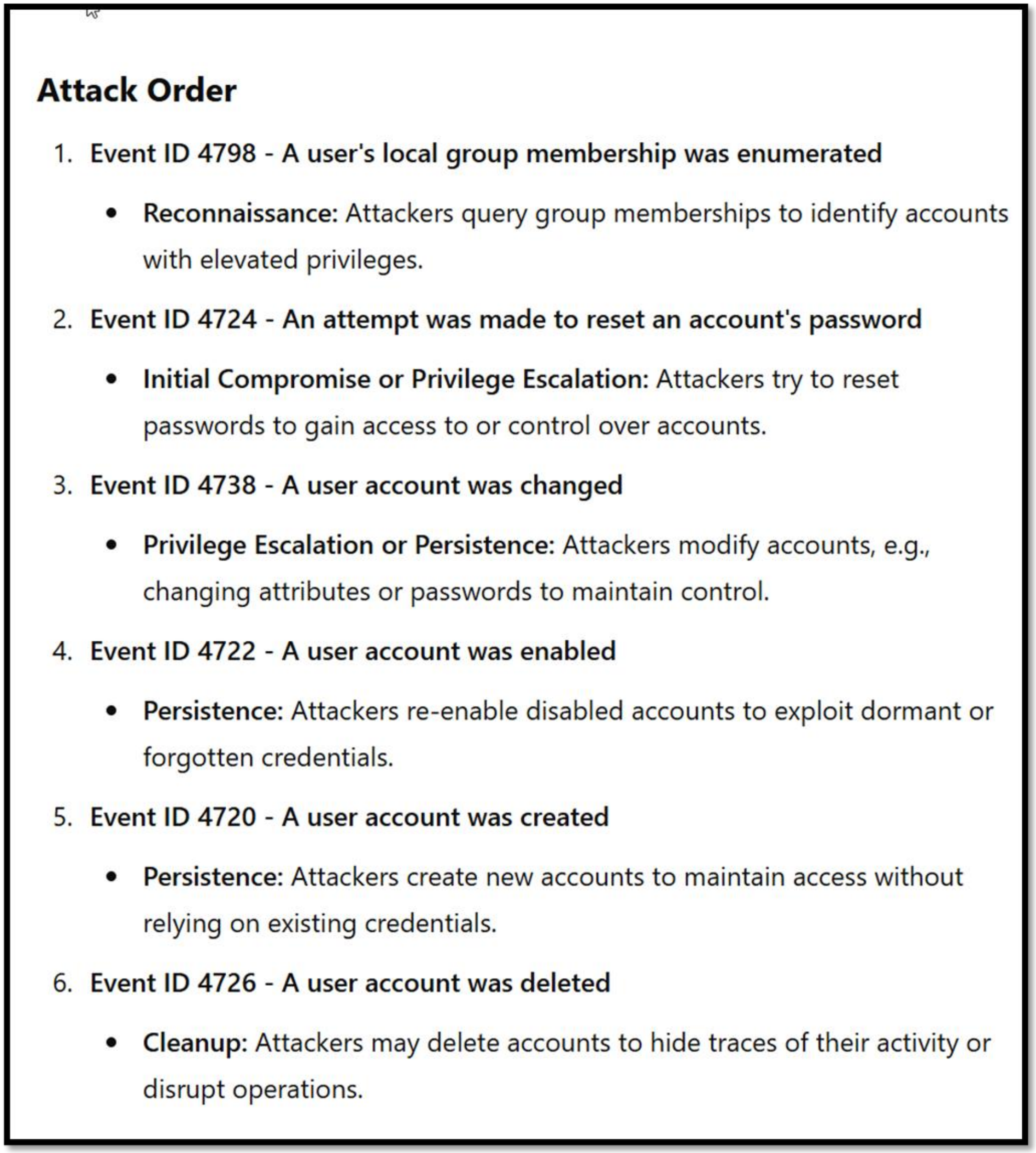


```
C:\Users\TARGET PC>net user

User accounts for \\TARGET5PC

---------------------------------------------------------------------------
Administrator            DefaultAccount           Guest
T1136.001_Admin          T1136.001_PowerShell     TARGET PC
WDAGUtilityAccount
The command completed successfully.


C:\Users\TARGET PC>net user T1136.001_Admin
User name                    T1136.001_Admin
Full Name
Comment
User's comment
Country/region code          000 (System Default)
Account active               Yes
Account expires              Never

Password last set            12/16/2024 3:42:54 PM
Password expires             1/27/2025 3:42:54 PM
Password changeable          12/17/2024 3:42:54 PM
Password required            Yes
User may change password     Yes

Workstations allowed         All
Logon script
User profile
Home directory
Last logon                   Never

Logon hours allowed          All

Local Group Memberships      *Administrators       *Users
Global Group memberships     *None
The command completed successfully.
```



```
C:\Users\TARGET PC>net localgroup Administrators
Alias name     Administrators
Comment        Administrators have complete and unrestricted access to the computer/domain

Members

-------------------------------------------------------------------------------
Administrator
LAB\Domain Admins
T1136.001_Admin
TARGET PC
The command completed successfully.
```

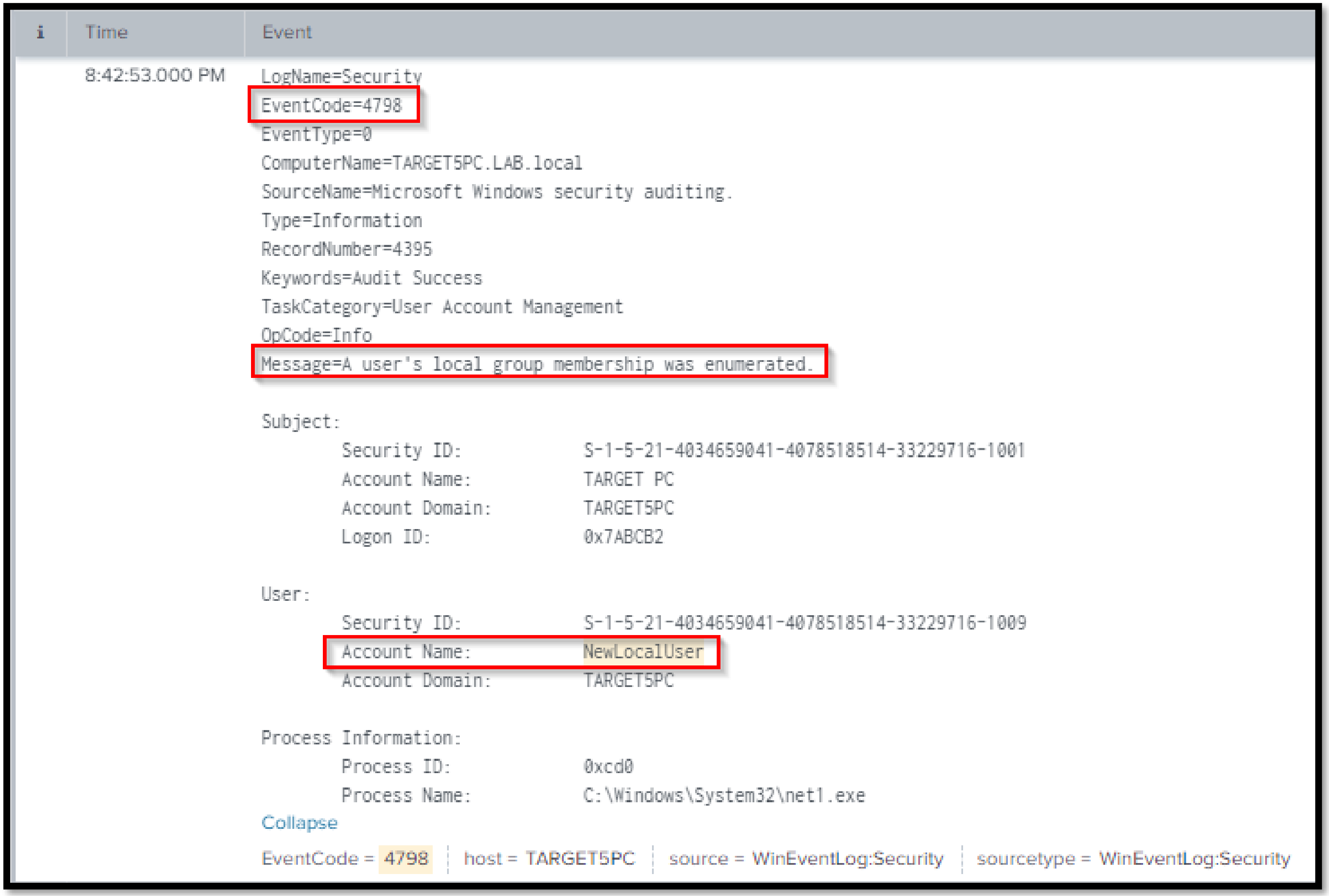
FIGURE 9: ATTACK ORDER



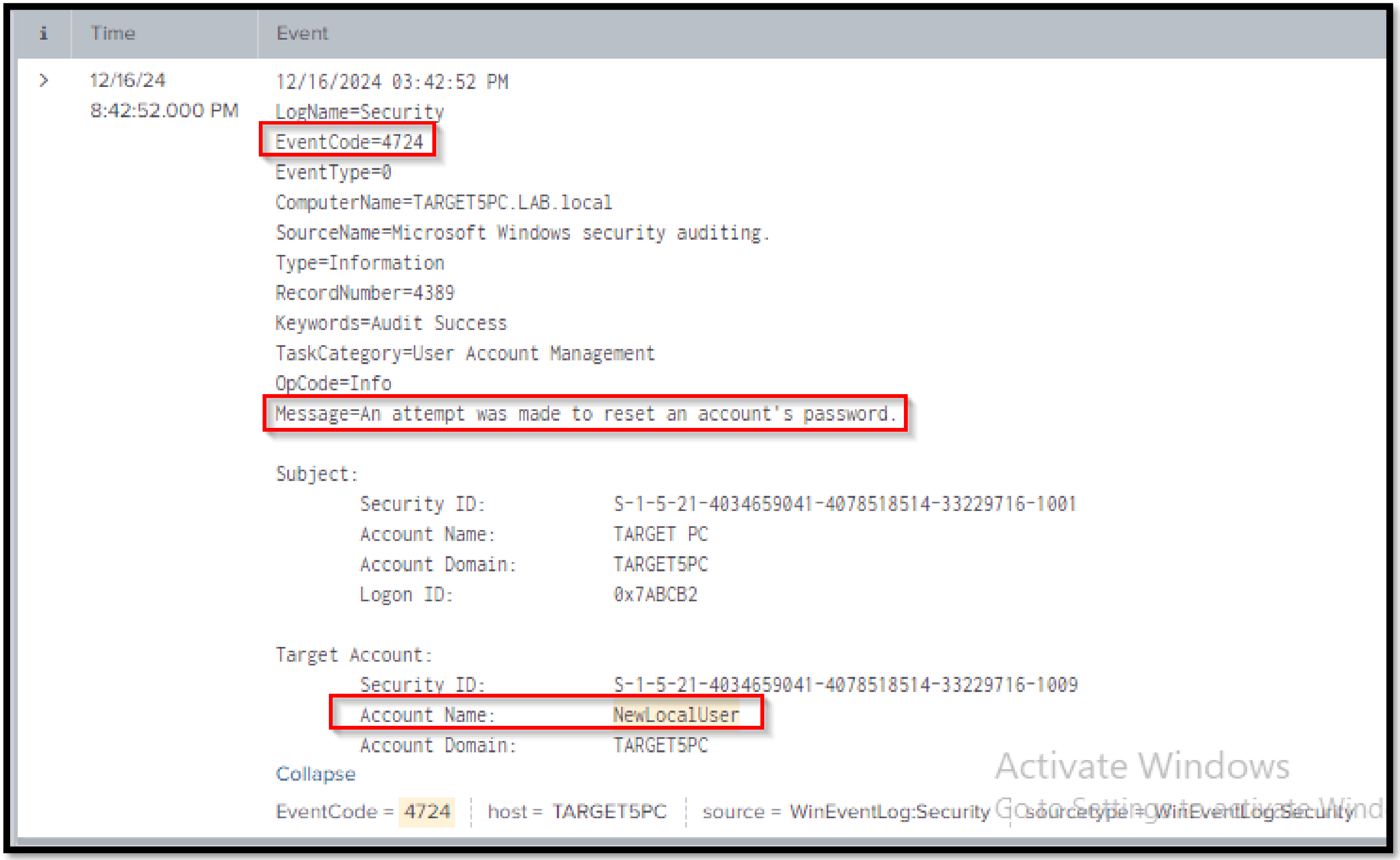
Attack Order

1. **Event ID 4798 - A user's local group membership was enumerated**
   - **Reconnaissance:** Attackers query group memberships to identify accounts with elevated privileges.
2. **Event ID 4724 - An attempt was made to reset an account's password**
   - **Initial Compromise or Privilege Escalation:** Attackers try to reset passwords to gain access to or control over accounts.
3. **Event ID 4738 - A user account was changed**
   - **Privilege Escalation or Persistence:** Attackers modify accounts, e.g., changing attributes or passwords to maintain control.
4. **Event ID 4722 - A user account was enabled**
   - **Persistence:** Attackers re-enable disabled accounts to exploit dormant or forgotten credentials.
5. **Event ID 4720 - A user account was created**
   - **Persistence:** Attackers create new accounts to maintain access without relying on existing credentials.
6. **Event ID 4726 - A user account was deleted**
   - **Cleanup:** Attackers may delete accounts to hide traces of their activity or disrupt operations.

FIGURE : SPLUNK TELEMETRY IN ATTACK ORDER



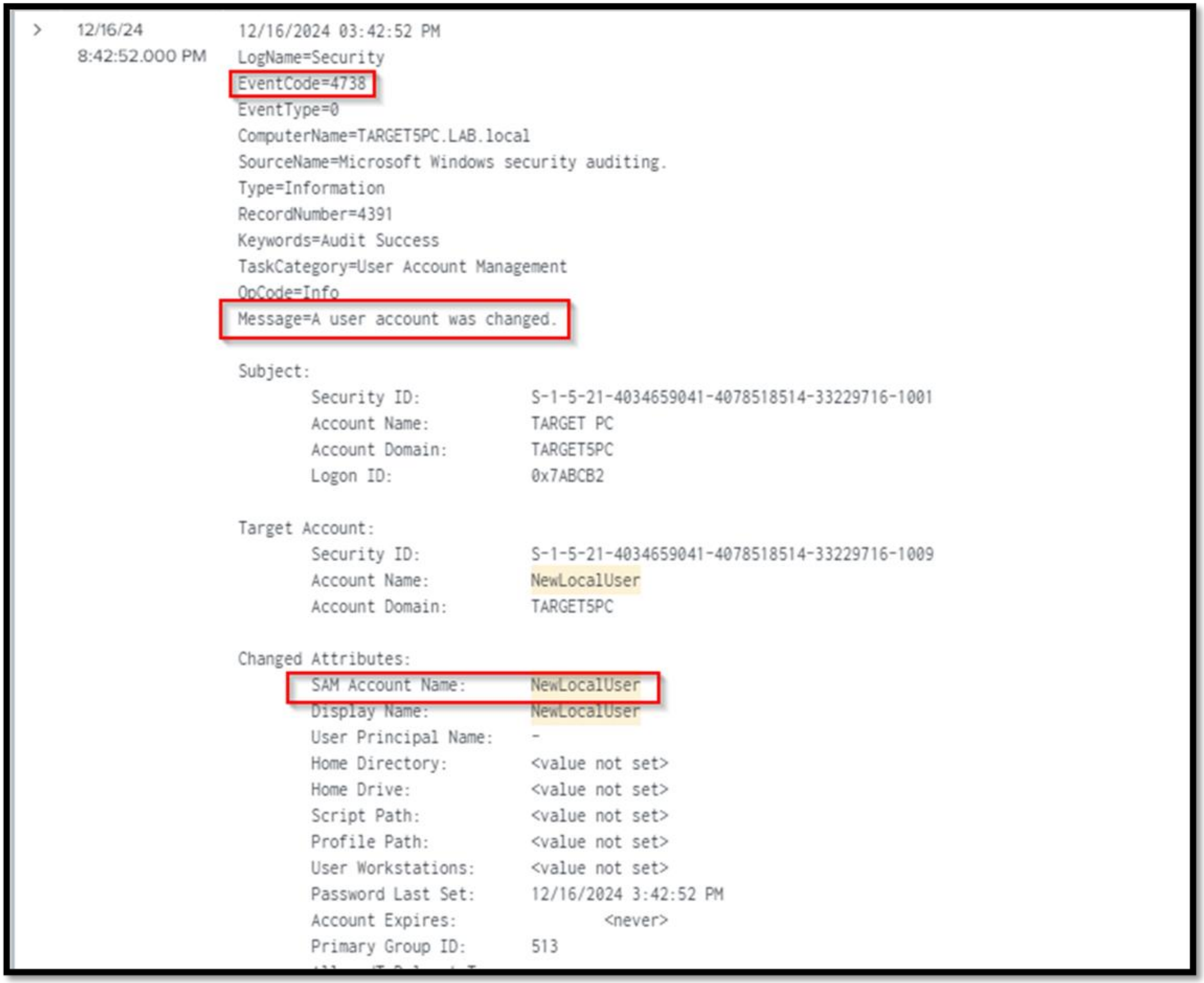
```
8:42:53.000 PM    LogName=Security
                  EventCode=4798
                  EventType=0
                  ComputerName=TARGET5PC.LAB.local
                  SourceName=Microsoft Windows security auditing.
                  Type=Information
                  RecordNumber=4395
                  Keywords=Audit Success
                  TaskCategory=User Account Management
                  OpCode=Info
                  Message=A user's local group membership was enumerated.

                  Subject:
                          Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
                          Account Name:           TARGET PC
                          Account Domain:         TARGET5PC
                          Logon ID:               0x7ABCB2

                  User:
                          Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
                          Account Name:           NewLocalUser
                          Account Domain:         TARGET5PC

                  Process Information:
                          Process ID:             0xcd0
                          Process Name:           C:\Windows\System32\net1.exe
                  Collapse
                  EventCode = 4798 | host = TARGET5PC | source = WinEventLog:Security | sourcetype = WinEventLog:Security
```



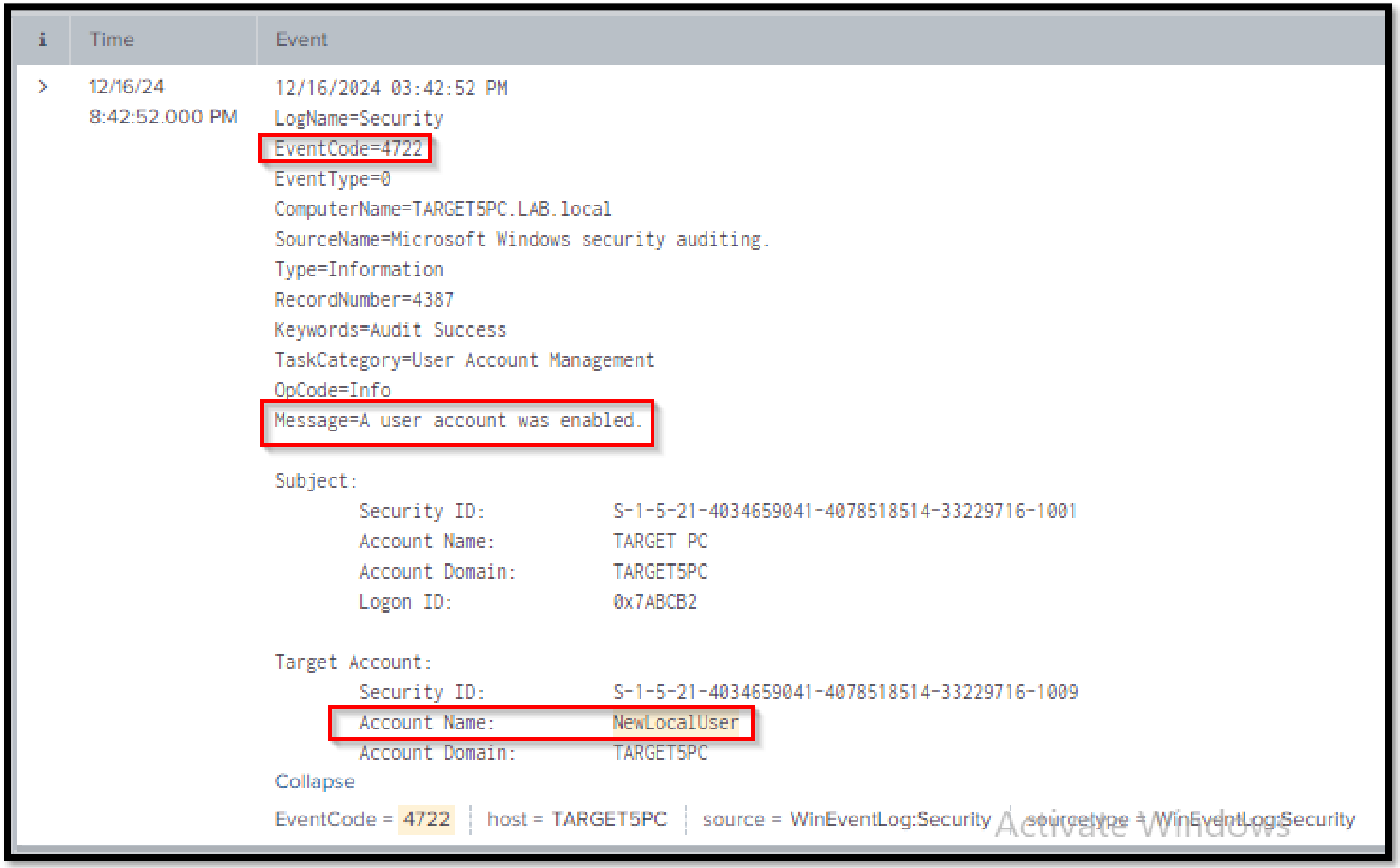
12/16/24
8:42:52.000 PM

```
12/16/2024 03:42:52 PM
LogName=Security
EventCode=4724
EventType=0
ComputerName=TARGET5PC.LAB.local
SourceName=Microsoft Windows security auditing.
Type=Information
RecordNumber=4389
Keywords=Audit Success
TaskCategory=User Account Management
OpCode=Info
Message=An attempt was made to reset an account's password.

Subject:
        Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
        Account Name:           TARGET PC
        Account Domain:         TARGET5PC
        Logon ID:               0x7ABCB2

Target Account:
        Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
        Account Name:           NewLocalUser
        Account Domain:         TARGET5PC
```

EventCode = 4724 | host = TARGET5PC | source = WinEventLog:Security | sourcetype = WinEventLog:Security



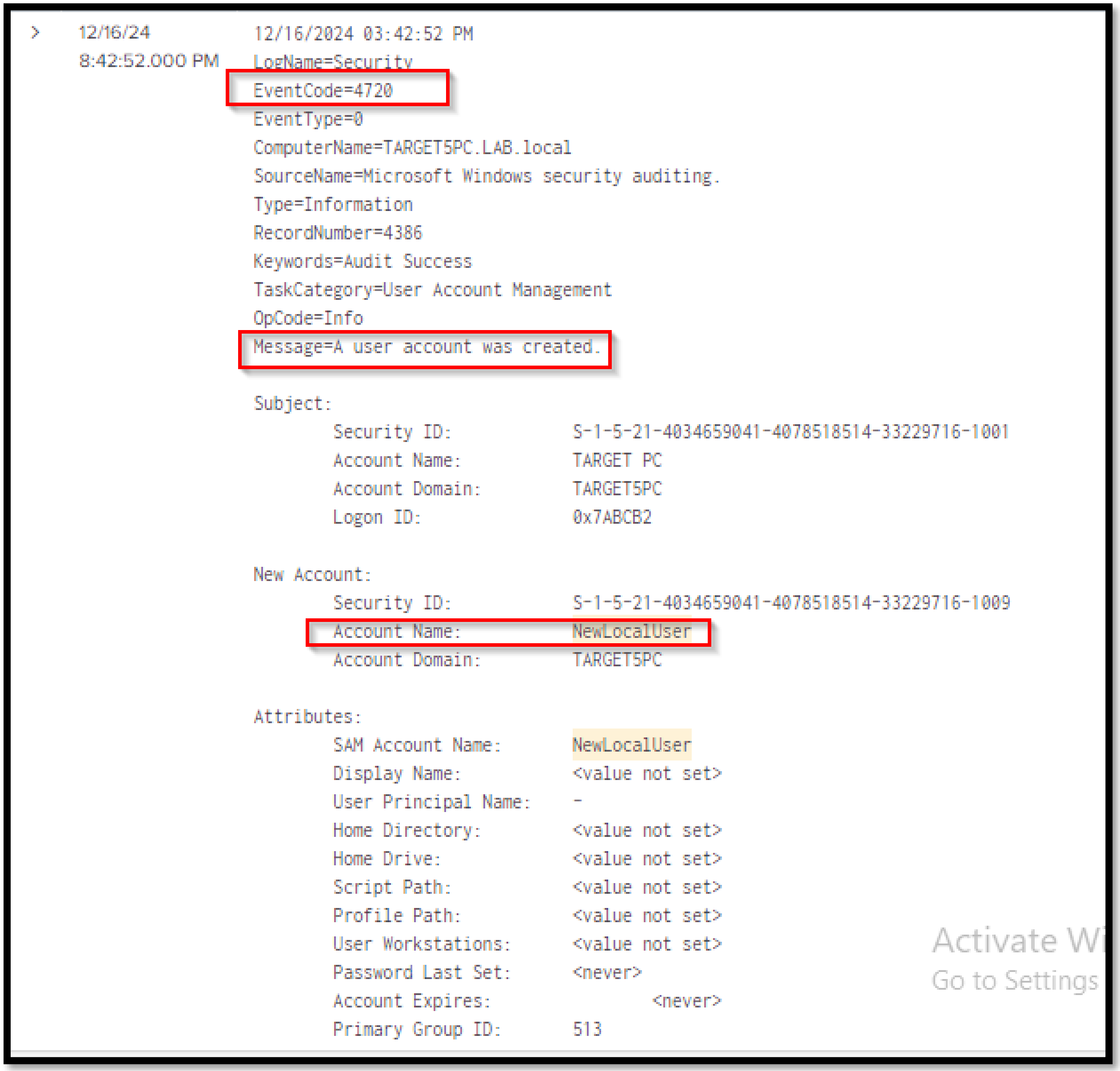
```
>   12/16/24            12/16/2024 03:42:52 PM
    8:42:52.000 PM      LogName=Security
                        EventCode=4738
                        EventType=0
                        ComputerName=TARGET5PC.LAB.local
                        SourceName=Microsoft Windows security auditing.
                        Type=Information
                        RecordNumber=4391
                        Keywords=Audit Success
                        TaskCategory=User Account Management
                        OpCode=Info
                        Message=A user account was changed.

                        Subject:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
                                Account Name:           TARGET PC
                                Account Domain:         TARGET5PC
                                Logon ID:               0x7ABCB2

                        Target Account:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
                                Account Name:           NewLocalUser
                                Account Domain:         TARGET5PC

                        Changed Attributes:
                                SAM Account Name:       NewLocalUser
                                Display Name:           NewLocalUser
                                User Principal Name:    -
                                Home Directory:         <value not set>
                                Home Drive:             <value not set>
                                Script Path:            <value not set>
                                Profile Path:           <value not set>
                                User Workstations:      <value not set>
                                Password Last Set:      12/16/2024 3:42:52 PM
                                Account Expires:                <never>
                                Primary Group ID:       513
```



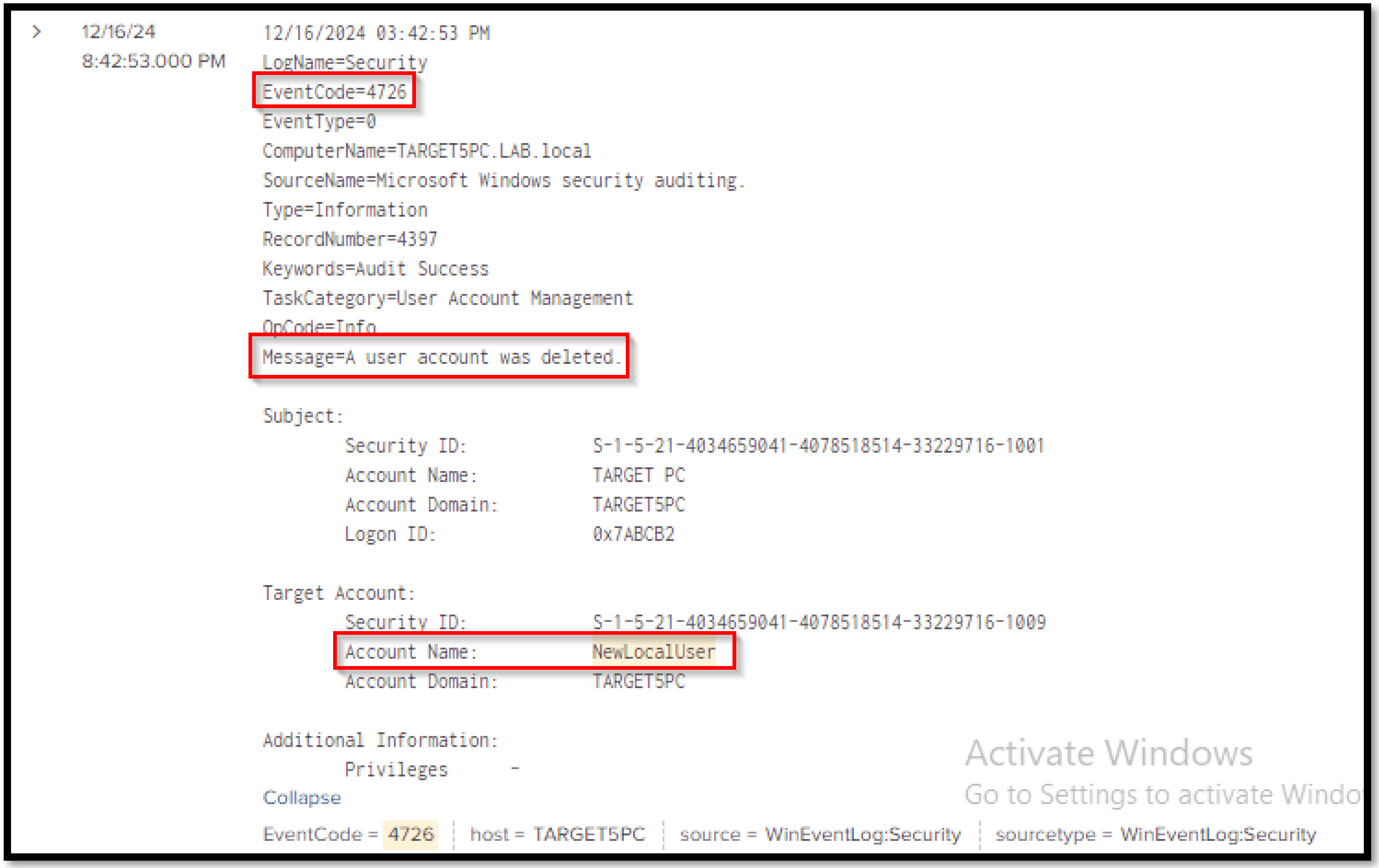
12/16/24
8:42:52.000 PM

```
12/16/2024 03:42:52 PM
LogName=Security
EventCode=4722
EventType=0
ComputerName=TARGET5PC.LAB.local
SourceName=Microsoft Windows security auditing.
Type=Information
RecordNumber=4387
Keywords=Audit Success
TaskCategory=User Account Management
OpCode=Info
Message=A user account was enabled.

Subject:
        Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
        Account Name:           TARGET PC
        Account Domain:         TARGET5PC
        Logon ID:               0x7ABCB2

Target Account:
        Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
        Account Name:           NewLocalUser
        Account Domain:         TARGET5PC
```

EventCode = 4722 | host = TARGET5PC | source = WinEventLog:Security | sourcetype = WinEventLog:Security



```
>   12/16/24            12/16/2024 03:42:52 PM
    8:42:52.000 PM      LogName=Security
                        EventCode=4720
                        EventType=0
                        ComputerName=TARGET5PC.LAB.local
                        SourceName=Microsoft Windows security auditing.
                        Type=Information
                        RecordNumber=4386
                        Keywords=Audit Success
                        TaskCategory=User Account Management
                        OpCode=Info
                        Message=A user account was created.

                        Subject:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
                                Account Name:           TARGET PC
                                Account Domain:         TARGET5PC
                                Logon ID:               0x7ABCB2

                        New Account:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
                                Account Name:           NewLocalUser
                                Account Domain:         TARGET5PC

                        Attributes:
                                SAM Account Name:       NewLocalUser
                                Display Name:           <value not set>
                                User Principal Name:    -
                                Home Directory:         <value not set>
                                Home Drive:             <value not set>
                                Script Path:            <value not set>
                                Profile Path:           <value not set>
                                User Workstations:      <value not set>
                                Password Last Set:      <never>
                                Account Expires:                <never>
                                Primary Group ID:       513
```



```
>   12/16/24            12/16/2024 03:42:53 PM
    8:42:53.000 PM      LogName=Security
                        EventCode=4726
                        EventType=0
                        ComputerName=TARGET5PC.LAB.local
                        SourceName=Microsoft Windows security auditing.
                        Type=Information
                        RecordNumber=4397
                        Keywords=Audit Success
                        TaskCategory=User Account Management
                        OpCode=Info
                        Message=A user account was deleted.

                        Subject:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1001
                                Account Name:           TARGET PC
                                Account Domain:         TARGET5PC
                                Logon ID:               0x7ABCB2

                        Target Account:
                                Security ID:            S-1-5-21-4034659041-4078518514-33229716-1009
                                Account Name:           NewLocalUser
                                Account Domain:         TARGET5PC

                        Additional Information:
                                Privileges      -
                        Collapse
                        EventCode = 4726 | host = TARGET5PC | source = WinEventLog:Security | sourcetype = WinEventLog:Security
```