STIG Implementation Report

- **Intern Credit Application For:** Bruce Thornton
  Date: 11/10/2025
  STIG Finding: WN11-CC-000020
- **SRG:** SRG-OS-000480-GPOS-00227
  Severity: medium
  Vulnerability ID: V-253353 **CCI:** CCI-000366

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1. Introduction

This report documents the process of identifying, remediating, and verifying the fix for a Windows 11 STIG compliance finding. The selected finding was: STIG ID: WN11-CC-000020 “IPv6 source routing must be configured to highest protection.”

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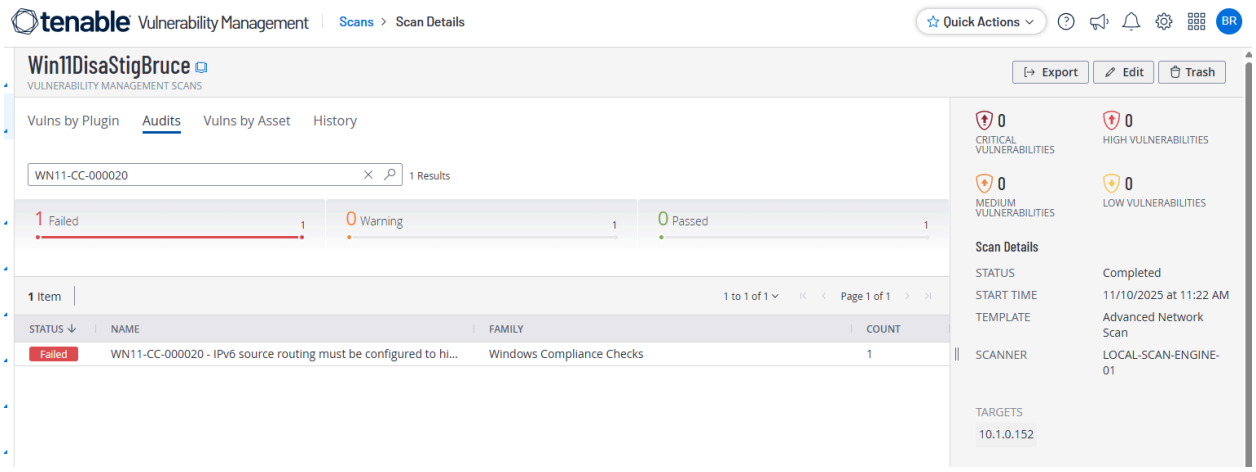
2. Initial Scan Results

- Tool: Tenable.sc / Nessus (Windows 11 STIG Audit Policy)
- Finding ID: WN11-CC-000020
- Status: **Failed** (non-compliant)

📎 **Evidence:** First identified the STIG:

https://stigaview.com/products/win11/v1r6/WN11-CC-000020/

Initial scan result:



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3. Manual Remediation Steps

*IMPORTANT

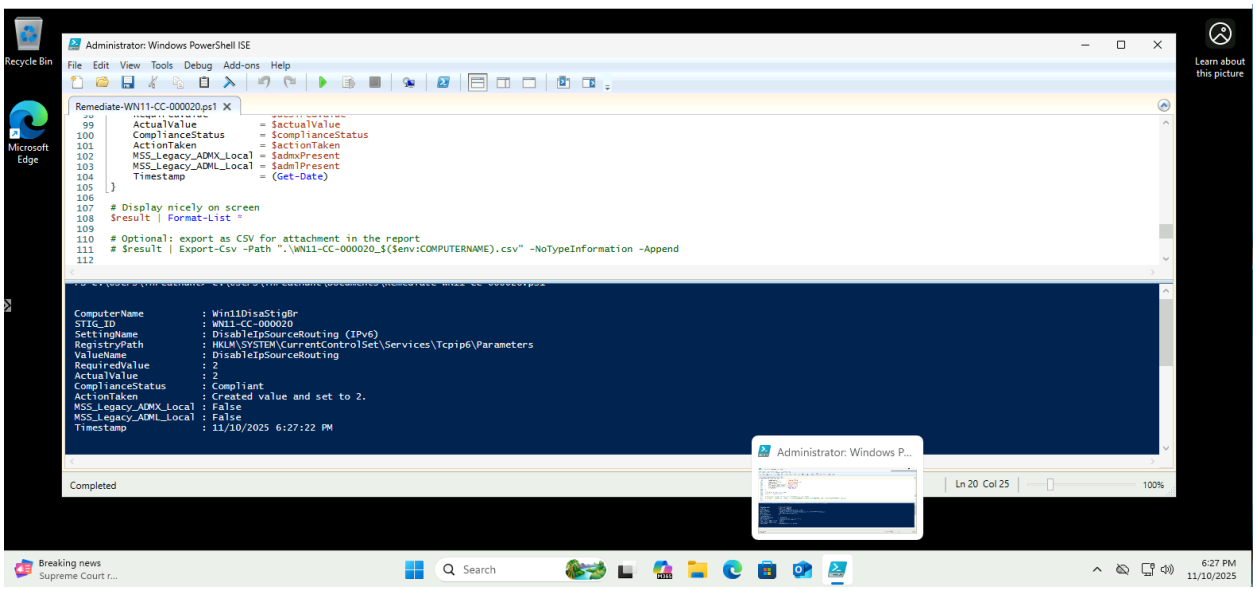
For WN11-CC-000020, the required control is implemented by configuring the registry value HKLM\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters\DisableIpSourceRouting (REG_DWORD) to 2, which represents ‘Highest protection, source routing is completely disabled.’

On the assessed Windows 11 VM, this value was created/updated manually via Registry Editor and verified via PowerShell.

The MSS-Legacy GPO template is not present on this standalone VM; however, the registry setting reflects the required configuration specified in the STIG check text.”

4. Remediation with PowerShell Script

Save as: `Remediate-WN11-CC-000020.ps1` and run **as Administrator** utilizing PowerShell ISE:



Script:

```
<#
STIG ID : WN11-CC-000020
Title   : IPv6 source routing must be configured to highest protection.

Policy text note:
This policy setting requires the installation of the MSS-Legacy custom templates included with the STIG package. "MSS-Legacy.admx" and "MSS-Legacy.adml" must be copied to the \Windows\PolicyDefinitions and \Windows\PolicyDefinitions\en-US directories respectively.

Technical implementation:
At the host level, the effective control is the following registry value:
  HKLM\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters
  Value Name : DisableIpSourceRouting
  Type       : REG_DWORD
  Required   : 2 (Highest protection)
```

```
This script directly configures and verifies that registry value. In a
domain environment, Group Policy with MSS-Legacy templates should be used
for long-term enforcement, but this script accurately reflects the host's
compliance state.
#>

# ========================
#  Configuration
# ========================
$regPath      = 'HKLM:\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters'
$valueName    = 'DisableIpSourceRouting'
$desiredValue = 2
$stigId       = 'WN11-CC-000020'

# ========================
#  Optional: Note MSS-Legacy local template presence
#  (Domain central store templates may not appear here, so this is informational only.)
# ========================
$localAdmx  = Join-Path $env:WINDIR 'PolicyDefinitions\MSS-Legacy.admx'
$localAdml  = Join-Path $env:WINDIR 'PolicyDefinitions\en-US\MSS-Legacy.adml'
$admxPresent = Test-Path $localAdmx
$admlPresent = Test-Path $localAdml

# ========================
#  Helper: Ensure elevated
# ========================
$currId    = [Security.Principal.WindowsIdentity]::GetCurrent()
$principal = New-Object Security.Principal.WindowsPrincipal($currId)
$adminRole = [Security.Principal.WindowsBuiltInRole]::Administrator

if (-not $principal.IsInRole($adminRole)) {
   Write-Warning "This script should be run from an elevated PowerShell session (Run
as Administrator)."
}

# ========================
#  Remediation
# ========================
# Ensure the key exists (normally present, but this is defensive)
if (-not (Test-Path $regPath)) {
```

```
    New-Item -Path $regPath -Force | Out-Null
}

# Get current value (if it exists)
$current = Get-ItemProperty -Path $regPath -Name $valueName -ErrorAction
SilentlyContinue

if ($null -eq $current) {
    # Value doesn't exist - create it
    New-ItemProperty -Path $regPath -Name $valueName -Value $desiredValue
-PropertyType DWord -Force | Out-Null
    $actionTaken = "Created value and set to $desiredValue."
}
elseif ($current.$valueName -ne $desiredValue) {
    # Value exists but is incorrect - fix it
    Set-ItemProperty -Path $regPath -Name $valueName -Value $desiredValue -Type
DWord
    $actionTaken = "Updated value from $($current.$valueName) to $desiredValue."
}
else {
    $actionTaken = "No change required; value already set to $desiredValue."
}

# ========================
#  Verification
# ========================
$verified    = Get-ItemProperty -Path $regPath -Name $valueName -ErrorAction
SilentlyContinue
$actualValue = $verified.$valueName

if ($actualValue -eq $desiredValue) {
    $complianceStatus = 'Compliant'
} else {
    $complianceStatus = 'Non-Compliant'
}

# ========================
#  Report Output
# ========================
$result = [pscustomobject]@{
```

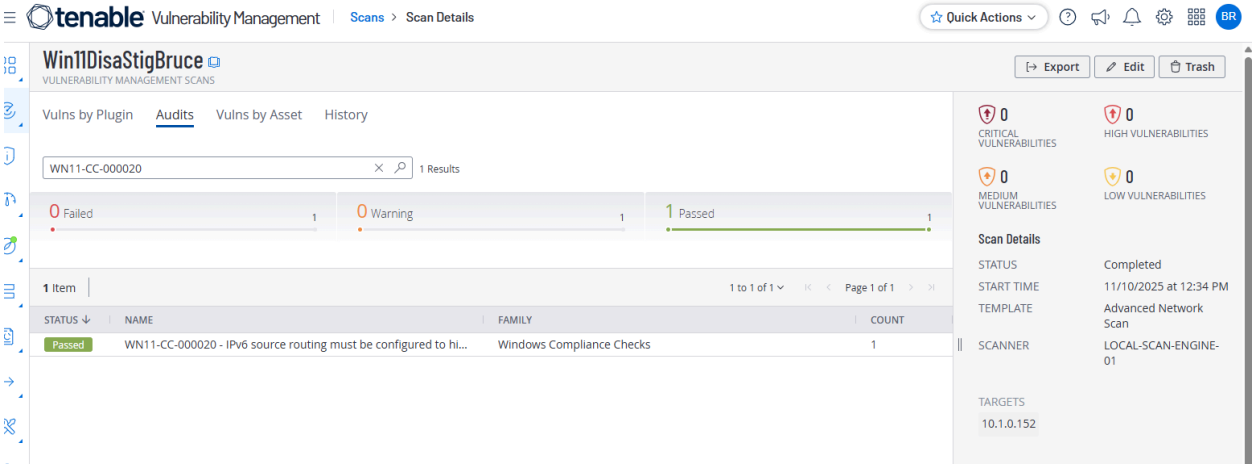
```
    ComputerName          = $env:COMPUTERNAME
    STIG_ID               = $stigId
    SettingName           = 'DisableIpSourceRouting (IPv6)'
    RegistryPath          =
'HKLM\SYSTEM\CurrentControlSet\Services\Tcpip6\Parameters'
    ValueName             = $valueName
    RequiredValue         = $desiredValue
    ActualValue           = $actualValue
    ComplianceStatus      = $complianceStatus
    ActionTaken           = $actionTaken
    MSS_Legacy_ADMX_Local = $admxPresent
    MSS_Legacy_ADML_Local = $admlPresent
    Timestamp             = (Get-Date)
}

# Display nicely on screen
$result | Format-List *

# Optional: export as CSV for attachment in the report
# $result | Export-Csv -Path ".\WN11-CC-000020_$($env:COMPUTERNAME).csv"
-NoTypeInformation -Append
```

Run “gpupdate /force” and restart.

Scan again,

- Tool: Tenable.sc / Nessus (Windows 11 STIG Audit Policy)
- Finding ID: WN11-CC-000020
- Status: **Passed**

Evidence:



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6. Conclusion:

The finding **WN11-CC-000020** was:

- Detected in the initial Tenable Windows 11 DISA STIG audit scan,
- Remediated by configuring the required registry value via **PowerShell** (without installing the MSS-Legacy ADMX/ADML templates), and
- Successfully **validated as compliant** in a subsequent Tenable scan, which reported the check as ***Passed***.

I have demonstrated that Windows STIG control **WN11-CC-000020** can be effectively implemented and verified using direct registry configuration through PowerShell, even in environments where the MSS-Legacy policy templates are not present on the system.