

# MS16-077: Description of the security update for WPAD: June 14, 2016

**Applies to:** Windows Server 2012 R2 Datacenter, Windows Server 2012 R2 Standard, Windows Server 2012 R2 Essentials, [More](#)

---

## Summary

---

This security update resolves vulnerabilities in Microsoft Windows. The vulnerabilities could allow elevation of privilege if the Web Proxy Auto Discovery (WPAD) protocol falls back to a vulnerable proxy discovery process on a target system.

To learn more about the vulnerability, see [Microsoft Security Bulletin MS16-077](#).

## More Information

---

### Important

- All future security and non-security updates for Windows RT 8.1, Windows 8.1, and Windows Server 2012 R2 require update [2919355](#) to be installed. We recommend that you install update [2919355](#) on your Windows RT 8.1-based, Windows 8.1-based, or Windows Server 2012 R2-based computer so that you receive future updates.
- If you install a language pack after you install this update, you must reinstall this update. Therefore, we recommend that you install any language packs that you need before you install this update. For more information, see [Add language packs to Windows](#).

### Behavior changes after installation

After you install this security update, the following changes are applied:

- NETBIOS communication outside of the local subnet is hardened. Therefore, by default, some features that depend on NETBIOS (such as SMB over NETBIOS) will not work outside the local subnet. To change this new default behavior, create the following registry entry:

SUBKEY:  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\NetBT\Parameters  
Value Name: AllowNBToInternet  
Type: Dword  
Value: 1  
Default value of the flag: 0

- By default, WPAD resolution for auto proxy detection will not use NETBIOS. Therefore, if proxy detection depends on NETBIOS alone for WPAD resolution, it may fail. We recommend that you use the DHCP option or DNS for WPAD resolution instead of NETBIOS. To change this new default behavior, create the following registry entry.

Note This registry entry only applies for Windows 8.1 and earlier versions of Windows.

SUBKEY:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\WinHttp  
Value Name: AllowOnlyDNSQueryForWPAD  
Type: DWORD  
Value: 0  
Default value of the flag: 1

- The default behavior of PAC file download is changed so that the client's domain credentials are not automatically sent in response to an NTLM or Negotiate Authentication challenge when WinHTTP requests the PAC file. This occurs regardless of the value of the fAutoLogonIfChallenged flag that is specified in WINHTTP\_AUTOPROXY\_OPTIONS. To change this new default behavior, create the following registry entry:

Note This registry entry only applies for Windows 8.1 and earlier versions of Windows.

SUBKEY:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\WinHttp  
Value Name: AutoProxyAutoLogonIfChallenged  
Type: DWORD  
Value: 1  
Default value of the flag: 0

# How to obtain and install the update

---

## Method 1: Windows Update

This update is available through Windows Update. When you turn on automatic updating, this update will be downloaded and installed automatically. For more information about how to turn on automatic updating, see

[Get security updates automatically.](#)

Note For Windows RT 8.1, this update is available through Windows Update only.

## Method 2: Microsoft Download Center

You can obtain the stand-alone update package through the Microsoft Download Center. Follow the installation instructions on the download page to install the update.

Click the download link in [Microsoft Security Bulletin MS16-077](#) that corresponds to the version of Windows that you are running.

## More Information

---

### How to obtain help and support for this security update

Help for installing updates: [Support for Microsoft Update](#)

Security solutions for IT professionals: [TechNet Security Troubleshooting and Support](#)

Help for protecting your Windows-based computer from viruses and malware: [Virus Solution and Security Center](#)

Local support according to your country: [International Support](#)

## File Information

---

✓ [File hash information](#)

✓ [File information](#)

---

Last Updated: May 10, 2017