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DATE(S) ISSUED:

7/17/2010

7/20/2010 – UPDATED

7/21/2010 – UPDATED

SUBJECT:

Vulnerability in Windows Shell Could Allow Automatic File Execution

ORIGINAL OVERVIEW:

A vulnerability has been discovered in Windows Shell, component of Microsoft Windows Operating System, that could allow automatic file execution. Specifically this vulnerability exists because Microsoft Windows incorrectly parses shortcuts (LNK files) in such a way that malicious code may be executed when the user views the displayed icon of a specially crafted shortcut. Successful exploitation may result in an attacker gaining at least the same user privileges as the logged on user. Depending on the privileges associated with the user, an attacker could then install programs; view, change, or delete data; or create new accounts with full user rights.

It has been confirmed that this vulnerability is being exploited in limited targeted attacks, however, we should anticipate more widespread exploitation in the short term.

There is currently no patch available for this vulnerability.

July 20 UPDATED OVERVIEW:

Exploit code is publicly available. The exploit code has also been added to the Metasploit exploitation framework. We have tested the exploit code in our lab and confirmed that the exploit allows for code execution.

July 21 UPDATED OVERVIEW:

Microsoft Knowledge Base Article 2286198 has been updated to reflect that Program Information Files (PIF) are also affected by this vulnerability. The Microsoft Knowledge Base Article includes a FixIt tool that will disable LNK and PIF file functionality (<http://support.microsoft.com/kb/2286198>). This workaround only applies to systems affected listed below.

Microsoft has also updated Security Advisory 2286198 to include additional attack vectors for this vulnerability which increases the possibility of exploitation. An attacker could embed an exploit in a document that supports embedded shortcuts or hosted browser controls, such as, Microsoft Office documents, e-mail attachments, or web sites.

SYSTEMS AFFECTED:

Windows XP

Windows Vista

Windows 7

Windows Server 2003

Windows Server 2008

RISK:

Government:

Large and medium government entities: **High**

Small government entities: **High**

Businesses:

Large and medium business entities: **High**

Small business entities: **High**

Home users: High

ORIGINAL DESCRIPTION:

A vulnerability has been discovered in Windows Shell in the way it processes shortcut 'LNK' files that could allow automatic file execution. Exploitation may occur when the user views the displayed icon of a specially crafted shortcut. **No user interaction is required other than viewing a folder while the specially crafted shortcut is displayed.** Successful exploitation may result in an attacker gaining the same user privileges as the logged on user. Depending on the privileges associated with the user, an attacker could then install programs; view, change, or delete data; or create new accounts with full user rights.

Current reports indicate that this vulnerability is being exploited with USB and other removable media. It is possible for this vulnerability to be exploited through network shares.

This vulnerability is being exploited in limited targeted attacks and currently being detected as W32.temphid (Symantec), Troj/Stuxnet-A (Sophos), or Rootkit.TmpHider (VirusBlokAda). The malware created to exploit this vulnerability appears to be targeting Siemens WinCC SCADA systems at this time according to independent researcher Frank Boldewin.

It should be noted that having AutoPlay disabled will prevent automatic file execution on removable disks. However, the attack could still be successful if the user browses to the root folder of the removable disk. Windows 7 has AutoPlay functionality for removable disks disabled by default.

There is currently no patch available for this vulnerability.

Microsoft has not released a patch for this vulnerability at this time, and is currently provided a workaround for disabling the displaying of icons for shortcuts and disabling the use of WebDAV which are known current attack vectors.

To disable the displaying of icons perform the following steps:

1. Click **Start**, click **Run**, type **Regedit** in the **Open** box, and then click **OK**
2. Locate and then click the following registry key:
HKEY_CLASSES_ROOT\lnkfile\shellex\IconHandler
3. Select the value (Default) on the right hand window in the Registry Editor. Press Enter to edit the value of the key. Remove the value, so that the value is blank, and press Enter.
4. Restart explorer.exe or restart the computer.

To disable the WebClient service perform the following steps:

1. Click **Start**, click **Run**, type **Services.msc** and then click **OK**.
2. Right-click **WebClient** service and select **Properties**.
3. Change the Startup type to **Disabled**. If the service is running, click **Stop**.
4. Click **OK** and exit the management application.

July 20 UPDATED DESCRIPTION:

Exploit code is publicly available. The exploit code has also been added to the Metasploit exploitation framework. We have tested the exploit code in our lab and confirmed that the exploit allows for code execution.

July 21 UPDATED DESCRIPTION:

Microsoft Knowledge Base Article 2286198 has been updated to reflect that Program Information Files (PIF) are also affected by this vulnerability. The Microsoft Knowledge Base Article includes a FixIt tool that will disable LNK and PIF file functionality

(<http://support.microsoft.com/kb/2286198>). This workaround only applies to affected systems

listed above. Please note, if the Fixit tool is employed, be sure to consider how to return systems to their original state when the patch for this vulnerability is released.

Microsoft has also updated Security Advisory 2286198 to include additional attack vectors for this vulnerability which increases the possibility of exploitation. An attacker could embed an exploit in a document that supports embedded shortcuts or hosted browser controls, such as, Microsoft Office documents, e-mail attachments, or web sites.

To manually disable the displaying of icons for PIF files perform the following steps:

1. *Click Start, click Run, type Regedit in the Open box, and then click OK*
2. *Locate and then click the following registry key:
HKEY_CLASSES_ROOT\piffile\shell\iconHandler*
3. *Select the value (Default) on the right hand window in the Registry Editor. Press Enter to edit the value of the key. Remove the value, so that the value is blank, and press Enter.*
4. *Restart explorer.exe or restart the computer.*

ORIGINAL RECOMMENDATIONS:

We recommend the following actions be taken:

- Ensure that all anti-virus software is up to date with the latest signatures.
- Blocking outbound SMB connections on the perimeter firewall will reduce the risk of remote exploitation using file shares.
- Consider disabling the displaying of icons for shortcuts
- Consider disabling the WebClient service where possible
- Install the appropriate vendor patch as soon as it becomes available after appropriate testing.
- Establish policies for the use of removable media on all enterprise and control system networks.

July 21 UPDATED RECOMMENDATIONS:

The following actions should be taken:

Consider blocking LNK and PIF files at the network perimeter.

Consider disabling LNK and PIF file functionality by using the "FixIt" tool found in Knowledge Base Article 2286198 (<http://support.microsoft.com/kb/2286198>).

ORIGINAL REFERENCES:

Security Focus:

<http://www.securityfocus.com/bid/41732>

US-CERT:

<http://www.kb.cert.org/vuls/id/940193>

Krebs on Security Blog:

<http://krebsonsecurity.com/2010/07/experts-warn-of-new-windows-shortcut-flaw/>

F-Secure:

<http://www.f-secure.com/weblog/archives/00001986.html>

http://www.f-secure.com/weblog/archives/new_rootkit_en.pdf

VirusBlokAda:

<http://www.anti-virus.by/en/tempo.shtml>

Microsoft:

<http://support.microsoft.com/kb/2286198>

<http://www.microsoft.com/technet/security/advisory/2286198.mspx>

CVE:

<http://www.cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2010-2568>

July 20 UPDATED REFERENCES:

SANS:

<http://isc.sans.edu/diary.html?storyid=9199>

<http://isc.sans.edu/diary.html?storyid=9181>

July 21 UPDATED REFERENCES:

F-Secure:

<http://www.f-secure.com/weblog/archives/00001987.html>

<http://www.f-secure.com/weblog/archives/00001989.html>

<http://www.f-secure.com/weblog/archives/00001991.html>

<http://www.f-secure.com/weblog/archives/00001992.html>

<http://www.f-secure.com/weblog/archives/00001993.html>

<http://www.f-secure.com/weblog/archives/00001994.html>

Sophos:

<http://www.sophos.com/blogs/chetw/g/2010/07/15/windows-day-vulnerability-shortcut-files-usb/>

<http://www.sophos.com/blogs/chetw/g/2010/07/20/shortcut-mitigation-certificate-revocation/>

<http://www.sophos.com/blogs/chetw/g/2010/07/20/certified-uncertainty/>