# WV-ASM970
# Startup failure issue
# after
# Windows Security Update(KB3126593) is applied
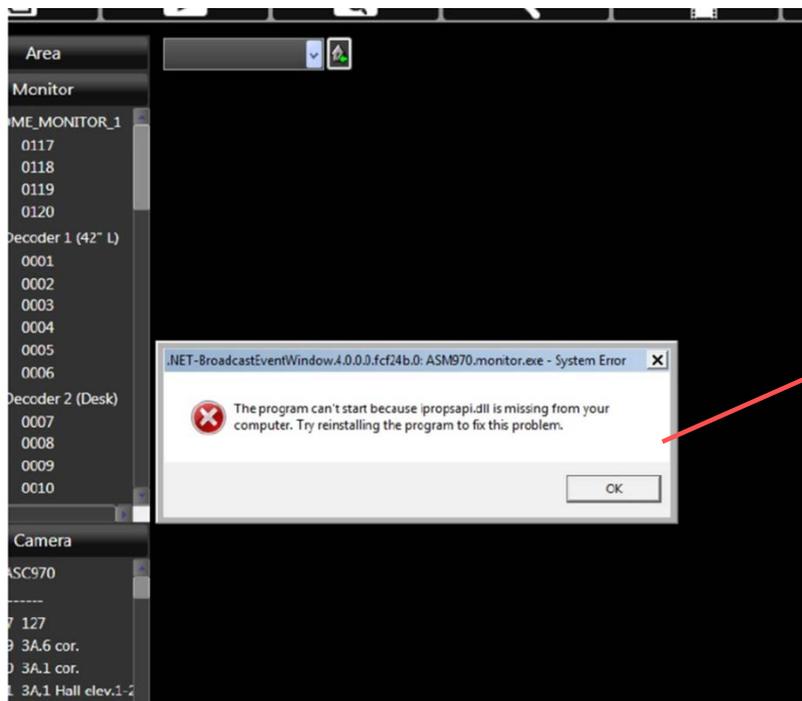
# - Summary and Treatment instruction -

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# Summary of the issue

## WV-ASM970 fails to start up after the MS Windows security update (KB3126593) is applied on the WV-ASM970 PC
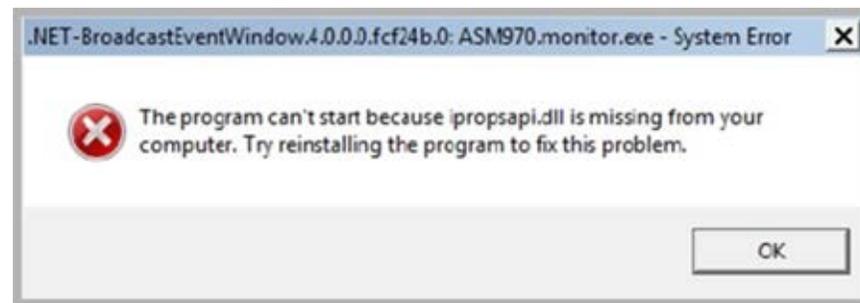
When the live window of WV-ASM970 starts up, error message dialog box appears and the software fails to proceed its operation. This symptom occurs after the security update program of MS Windows (KB3126593) is applied on the PC where WV-ASM970 is installed.

Display of WV-ASM970 at start-up

Error dialog

Error dialog says "ipropsapi.dll is missing from your computer"

.NET-BroadcastEventWindow.4.0.0.0.fcf24b.0: ASM970.monitor.exe - System Error

The program can't start because ipropsapi.dll is missing from your computer. Try reinstalling the program to fix this problem.

OK

Microsoft announce that applying the security update (KB3126593)
will change the searching rule of DLLs, on their support site.

Microsoft are aware of the behavior on some application software affected by change of searching rule.

### Description of Security update (KB3126593) (Excerpt)

This security update resolves vulnerabilities in Windows. The most severe of the vulnerabilities could allow remote code execution if an attacker is able to log on to a target system and run a specially crafted application. To learn more about the vulnerabilities, see Microsoft Security Bulletin MS16-014.

## Post-installation information

After you install this security update, the behavior of searching for DLLs to load in certain scenarios (specifically, when loading implicit dependencies of COM server DLLs) will be changed from the previous behavior in the following way: Unless a prefix of the current directory's full path is in the Safe Load List, the current directory will be skipped during the search (notice that previously, the current directory was used to search for the DLL). This new behavior may affect some legacy application behavior, and when the DLL loader notices this possible change in behavior, a warning or error message that resembles one of the messages mentioned earlier may be displayed in the Application log that is available in Event Viewer.

If the application requires the old dependency loading behavior for its correct operation for a specific directory, you can achieve this scenario by adding this directory or its trusted ancestor to the Safe Load List. To do this, follow these steps:

1. Make sure that your trusted location, together with all its descendant tree, is protected properly from unauthorized modifications by NTFS permissions.

2. Add a new string value to the following subkey in the registry in which the data is the full path of that trusted location:
   HKLM\System\CurrentControlSet\Control\Session Manager\Safe Load Prefixes
   The name of that value can be arbitrary, and the data of that value is the full path of that trusted location.

After you make these changes, as long as the CWD is under that location, the DLLs in that CWD will be trusted and loaded as before.

This behavior is likely caused because "the current directory" has been excluded from the search path sequence on the security updated (KB3126593)

When the security update program of MS Windows (KB3126593) is applied, it is assumed that "the current directory" (the second priority path) in the previous DLL searching sequence has been excluded to avoid the security vulnerability.
(The description down below, coming from MSDN, shows the searching sequence path before applying the update )

https://msdn.microsoft.com/en-us/us-en/library/7d83bc18(v=vs.120).aspx
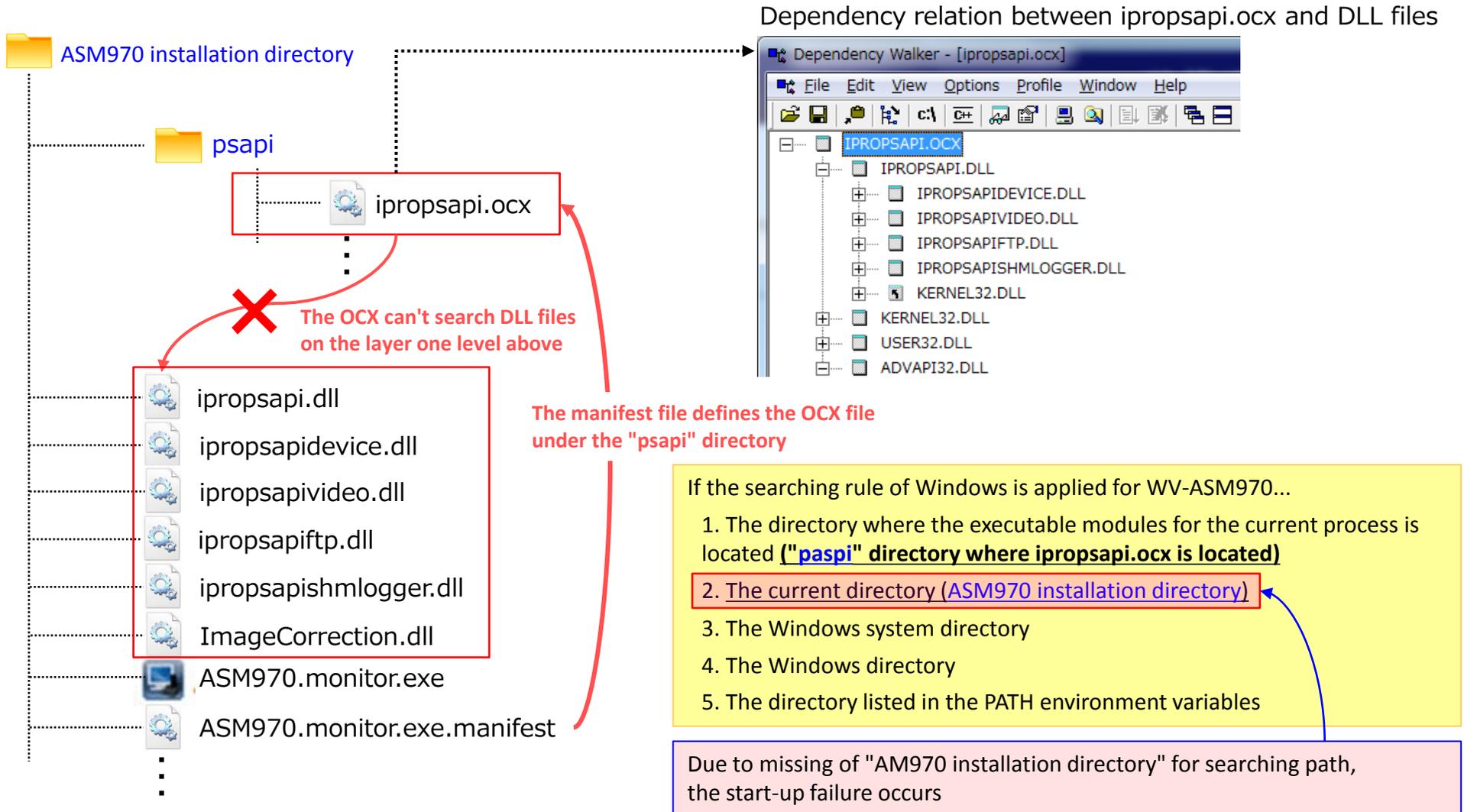
# Search Path Used by Windows to Locate a DLL

With both implicit and explicit linking, Windows first searches for "known DLLs", such as Kernel32.dll and User32.dll. Windows then searches for the DLLs in the following sequence:

1. The directory where the executable module for the current process is located.

2. The current directory.     ⬅ **"The current directory" likely has been excluded after the update**

3. The Windows system directory. The **GetSystemDirectory** function retrieves the path of this directory.

4. The Windows directory. The **GetWindowsDirectory** function retrieves the path of this directory.

5. The directories listed in the PATH environment variable.

☒ System_CAPS_note
              Note

The LIBPATH environment variable is not used.

The issue is caused because WJ-ASM970 fails to find DLL files dependent on the OCX file since "the current folder" has been excluded from the DLL searching path,

ASM970 installation directory

psapi

ipropsapi.ocx

❌ **The OCX can't search DLL files on the layer one level above**

iropsapi.dll
iropsapidevice.dll
iropsapivideo.dll
iropsapiftp.dll
iropsapishmlogger.dll
ImageCorrection.dll
ASM970.monitor.exe
ASM970.monitor.exe.manifest

**The manifest file defines the OCX file under the "psapi" directory**

Dependency relation between iropsapi.ocx and DLL files



If the searching rule of Windows is applied for WV-ASM970...

1. The directory where the executable modules for the current process is located **("paspi" directory where iropsapi.ocx is located)**

2. The current directory (ASM970 installation directory)

3. The Windows system directory

4. The Windows directory

5. The directory listed in the PATH environment variables

Due to missing of "AM970 installation directory" for searching path, the start-up failure occurs

A BAT file to resolve this issue is prepared and posted on Panasonic support site.
The file duplicates the 6 DLL files under the "psapi" directory able to be searched.

The BAT file with its instruction is located on Panasonic security product support site.
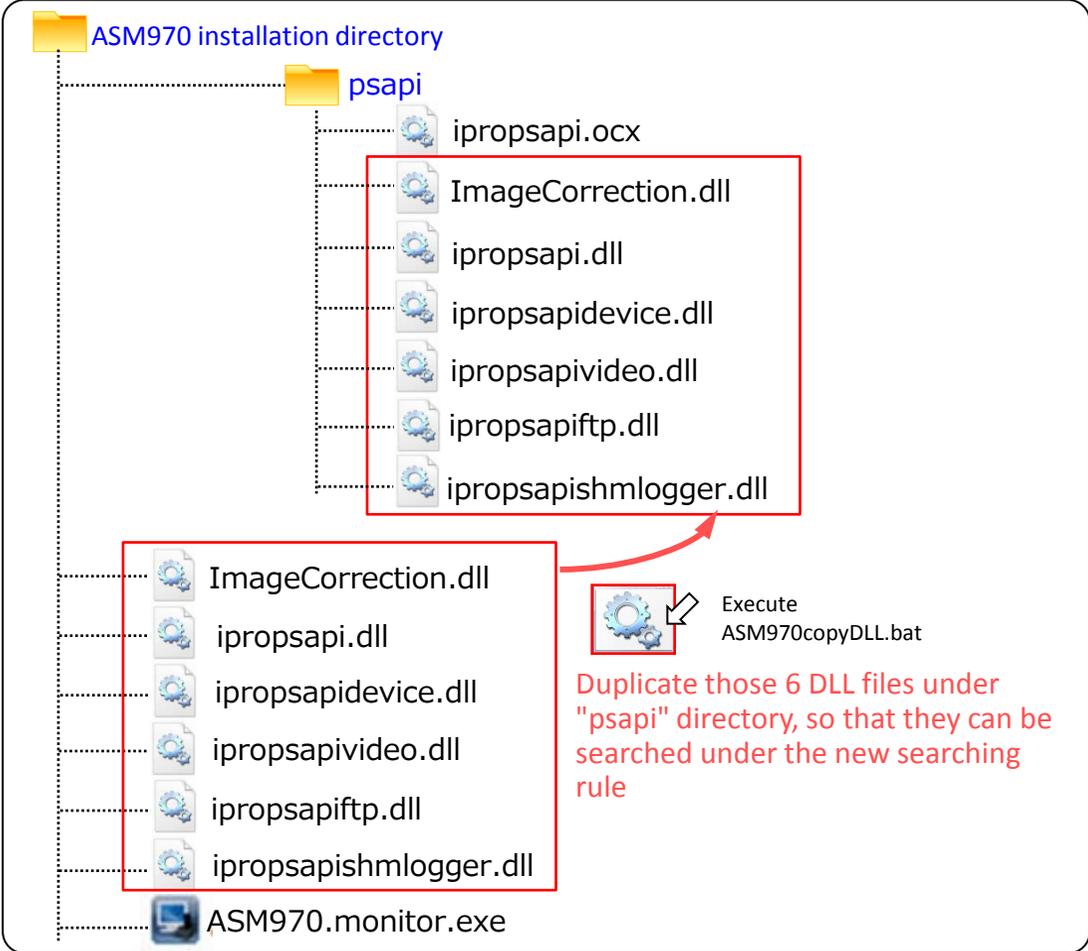(Go to WV-ASM970 library on "http://security.panasonic.com/pss/security/library/products.html")

http://security.panasonic.com/pss/security/library/products.html

ASM970copyDLL.bat

Instruction
(This document)

📁 ASM970 installation directory

📁 psapi

🔧 ipropsapi.ocx

🔧 ImageCorrection.dll

🔧 ipropsapi.dll

🔧 ipropsapidevice.dll

🔧 ipropsapivideo.dll

🔧 ipropsapiftp.dll

🔧 ipropsapishmlogger.dll

🔧 ImageCorrection.dll

🔧 ipropsapi.dll

🔧 ipropsapidevice.dll

🔧 ipropsapivideo.dll

🔧 ipropsapiftp.dll

🔧 ipropsapishmlogger.dll

💻 ASM970.monitor.exe

Execute
ASM970copyDLL.bat

Duplicate those 6 DLL files under "psapi" directory, so that they can be searched under the new searching rule

**Treatment instruction
- ASM970copyDLL.bat -**

## Follow the instruction down below if this issue occurs on WV-ASM970 PC due to Windows security update (KB3126593)

1. Download the "ASM970copyDLL.bat" file from Panasonic security product support site.

ASM970copyDLL.bat
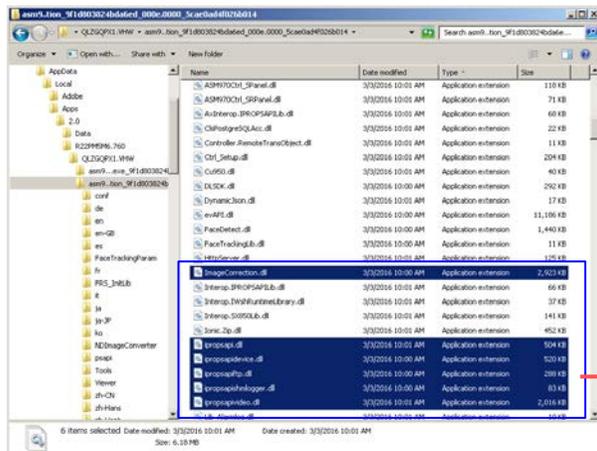
2. If WV-ASM970 is running on the PC, exit WV-ASM970.

3. Copy "ASM970copyDLL.bat" file on the PC where WV-ASM970 is installed. (Desktop may be a good location for a copy)

4. Double Click "ASM970copyDLL.bat" to execute.  (This will copy 6 DLL files under the "psapi" directory.)
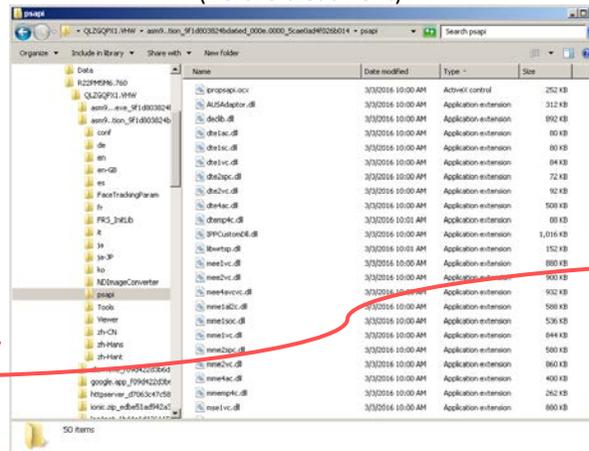
5. Start WV-ASM970.

Reference (Example)

ASM970 installation directory

psapi directory

(Before treatment)

(After treatment)



copy