

IO Libraries H.01.02.00 Read Me

Welcome to the HP I/O Libraries (SICL and VISA) for Windows® 95, Windows 98 and Windows NT®.

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What's New?

- A number of E8491A/B firmware and driver defects were fixed.
- A number of E82350A Windows NT driver defects were fixed.
- A %E conversion error was fixed: For example: executing `viPrintf(vi, "%E\n", -3.0e-3)`; would send "-3.000001E-03" where "-3.000000E-03" is expected. This is now fixed.

In Case of Difficulty

- Upon completion, the HP I/O Libraries installation program attempts to determine if you need to reboot your computer before you can use the I/O Libraries. In most cases this determination is correct, however, occasionally you may not be prompted to reboot when, in fact, it is necessary. If the I/O Libraries appear not to be working properly after you have installed them and/or run the I/O Configuration program, try rebooting to see if that solves the problem.
- On some machines, the installation of the HP I/O Libraries can be extremely slow if Microsoft Outlook is running. It is highly recommended that you close all running applications before installing the HP I/O Libraries.
- On certain occasions under Windows NT, we have observed that rebooting from the reboot dialog box of the HP I/O Libraries installation program will only log the user off and not actually reboot the computer. If this happens, you will need to manually reboot Windows NT before using the I/O Libraries.

Known Limitations

- SICL for Windows 95, Windows 98 and Windows NT supports *Microsoft Visual BASIC*, but it does not support *Visual BASIC for Applications* included with applications such as Microsoft Excel.
- Using the HP 82335 GPIB interface with both SICL and the HP-IB Command Library at the same time on the same interface is not supported. No error will be reported but unexpected results could occur. Note that the HP 82335 GPIB interface is not supported on Windows NT.
- Calling `iclose()` on a session while an interrupt or SRQ handler is executing for that session can cause unexpected results. You should ensure that this cannot happen in your application.
- Multi-CPU operation (available on Windows NT) is not supported, except on the E8491 IEEE 1394 to VXI Interface

- If you dynamically load the I/O Libraries in a multi-threaded application, you must load the I/O Libraries DLL's (sicl32.dll and/or visa32.dll) before creating any threads that will do I/O operations. The I/O Libraries create and use thread local storage. This storage will not be properly initialized in any threads that are created before the I/O Libraries DLL's are loaded.
- The calling of SICL and VISA functions from within a DLL entry-point function (e.g DllMain) is not supported. The SICL iopen call (which is also used from within a VISA viOpen call) creates an interrupt thread and waits for it to start. Windows will not start the newly created thread until the entry-point function terminates and thus a deadlock will occur. The following excerpt from the **DllMain** documentation on the **July 1999 MDSN Library** summarizes good programming practice for a DLL entry-point function (Refer to the MDSN Library for more detailed information.):

Warning On attach, the body of your DLL entry-point function should perform only simple initialization tasks, such as setting up thread local storage (TLS), creating synchronization objects, and opening files. You must not call LoadLibrary in the entry-point function, because you may create dependency loops in the DLL load order. This can result in a DLL being used before the system has executed its initialization code. Similarly, you must not call the FreeLibrary function in the entry-point function on detach, because this can result in a DLL being used after the system has executed its termination code.

Calling Win32 functions other than TLS, object-creation, and file functions may result in problems that are difficult to diagnose. For example, calling User, Shell, COM, RPC, and Windows Sockets functions (or any functions that call these functions) can cause access violation errors, because their DLLs call LoadLibrary to load other system components. While it is acceptable to create synchronization objects in DllMain, you should not perform synchronization in DllMain (or a function called by DllMain) because all calls to DllMain are serialized. Waiting on synchronization objects in DllMain can cause a deadlock.

To provide more complex initialization, create an initialization routine for the DLL. You can require applications to call the initialization routine before calling any other routines in the DLL. Otherwise, you can have the initialization routine create a named mutex, and have each routine in the DLL call the initialization routine if the mutex does not exist.

- If you uninstall the I/O Libraries, ISCPi support files needed by HP's VXIplug&play drivers are also removed. If you then install another vendor's VISA, you will need to reinstall your HP VXIplug&play drivers before they can be used.

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