



Problem:

Does VersaLogic provide device drivers that enable direct I/O port access under Windows NT/2000/XP?

Background:

Windows 9x operating systems permit I/O operations to be executed at the application level (commonly through assembly language applications). But because of hardware virtualization in Windows NT/2000/XP, these operating systems do not permit application level I/O access. (In a virtualized hardware environment, an application “thinks” it is directly accessing a physical device, but in reality is interfacing with a driver that emulates the hardware and passes data back and forth as appropriate.) Windows NT/2000/XP do, however, allow I/O instructions in their kernel mode drivers, which run at the most privileged level of the processor (variously called kernel mode, privileged mode, or ring 0).

Solution:

At present, VersaLogic does not provide drivers that access I/O ports directly under Windows NT/2000/XP. However, port DLL drivers, which enable access to I/O ports from the application code level, are available from a variety of sources on the Internet, such as **IO.DLL** by [Geek Hideout](#). Performing a Google search using the search terms "Windows XP I/O Port DLL" will return other useful resources.

Writing a kernel mode device driver is the most ideal and secure method of accessing I/O ports under Windows, but it is not trivial to write such a device driver. (See [MSDN Device Drivers](#).)

Note that a call from the application level to the system level typically takes about one millisecond, compared to the one microsecond that normal I/O access takes. Also, other operating system activity takes priority over your application and the I/O calls it makes. Some I/O port DLL drivers, including IO.DLL, can release ports from other uses as needed by the application.

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