

WindowsNT-4 *Driver Trouble Shooting Tips*

When installing our DOS or Windows 16 bit applications, special drivers are required for operation under WindowsNT in order to access hardware level functions. These drivers are installed automatically by our installation software. Under most conditions there should be no problem. However, if the application program still cannot find the hardware desired, than the following tips maybe helpful for determining the problem, and for reporting the information back to us.

Two Drivers are Involved

For each application a pair of drivers are required. For example, in the case of LMS the drivers are: *LMS_VDM.DLL* and *LMS_NTD.SYS*. The DLL file can be found under the \WINDOWS\SYSTEM32 directory, and the SYS file found under WINDOWS\SYSTEMS32\DRIVERS directory. Most of the driver names begin with an abbreviated form of the product name. (Note- For key protected software the drivers are: *MMK_NTD.SYS*, *MMK_VDM.DLL*.)

Checking the NT Event Viewer

The Event Viewer in NT records any notable events that occur while NT is starting up. Go to the *START MENU, ADMINISTRATIVE TOOLS*, and then choose *Event Viewer*. Look for any of the red stop sign marker lines to see if there is a message relating to the drivers for the application. The messages specify the driver which has a problem.

Checking the NT Diagnostics

Go to the *START MENU, ADMINISTRATIVE TOOLS*, and then choose *Windows Diagnostics*. First, go to the *Services* tab, and then press the *Devices* button. You should be able to find the SYS driver in the list, and it should be marked as *Running*. Secondly, you can go back to the *Resources* tab and press the *I/O Port* button. You should be able to find the SYS driver name (more than once), and see the I/O port addresses allocated to the driver. (Note- MMK driver will NOT be shown here.)

Starting REGEDT32.EXE

An important program in WinNT is the 32 bit Registry Editor. WinNT does not normally put an icon to the program in the control panel, so you will need to start it manually. The file will be found under \WINDOWS\SYSTEM32. Locate the file using File Explorer, and then double click on it to start the program.

(a) Verifying the SYS Driver Parameters

Once inside REGEDT32, open the following folder tree:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services

Under *Services* you will find a long list, which should contain the driver name you are looking for as a single entry. When the entry is selected, the right hand window should display something similar to the following data:

BaseAddress: REG_DWORD 0x21F
BreakOnEntry: REG_DWORD 0x0
DebugLevel: REG_DWORD 0x0
ErrorControl: REG_DWORD 0x1
Group: REG_SZ LINEARX Drivers
Start: REG_DWORD 0x2
Type: REG_DWORD 0x1

There should also be an entry under the driver name called ENUM, which should look like:

0: REG_SZ: \LEGACY_LMS_NTD\0000
Count: REG_DWORD: 0x1
NextInstance: REG_DWORD: 0x1

(b) Verifying the DLL Driver Parameters

Once inside REGEDT32, open the following folder tree:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\VirtualDeviceDrivers

When the *VirtualDeviceDrivers* entry is selected, the right hand window should display a long string. You can double click on the string to open an editing window. It may look something like the following:

C:\WINDOWS\SYSTEM32\LMS_VDM.DLL
C:\WINDOWS\SYSTEM32\MMK_VDM.DLL

All virtual device drivers to be loaded in your system will be listed here, so there may be one or more entries. However, each particular driver should be listed only once. If a driver is listed more than once under different paths, than this is an installation error and must be corrected, by deleting the old path entry. This condition can be created by multiple installs to different paths without uninstalling.