



## **Application Note: Forcing a Configuration for ISA Boards in Windows 95**

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**TO:** All Windows 95 ISA board users

**FROM:** Technical Staff

**RE:** Forcing a particular configuration in Windows 95

When the Zuma package is installed, Windows 95's configuration manager selects a configuration for the board and this setup is used from that point on. In most cases, this value may be accepted and used without any difficulty, but occasionally a particular setup is required, and there is currently no way to direct the system to bypass its current selection for another.

This application note describes a procedure for forcing a single configuration to be tried first by the configuration manager. If this setup does not conflict with other hardware, the configuration manager from that point will select it as the setup.

This procedure is not particularly dangerous, but it does require operating in the Windows system areas. In general, all steps should be taken with care and backups made to allow restoring of the system in the event of a problem.

### **Overview**

The Configuration Manager uses .INF files to describe the possible settings for an installed board. These files are loaded by "Add New Hardware" from the installation disk and scanned into a pair of data base files. To force a configuration, we will edit the INF file to check the desired configuration first, then force the changed INF file to be re-scanned.

The example below uses a PC44 installation as an example. The procedure is the same for the PC32 and PC31, except where noted.

## Preparation

Remove the target board (here, the PC44) from the system. This is necessary since on some systems Windows is able to detect the use of the I/O ports or DRAM, causing the desired setting to be rejected.

The next step is to find the INF file. These files live in the Windows\Inf directory. This is a hidden directory. If the directory is not visible in Explorer, Select the View | Options... menu. On the View tab is a checkbox for "Show Hidden". Select "Show All" and the Inf directory should appear.

The location of the INF file depends on the version of Windows 95 in use. In versions before Revision B, installed INF files are located in the Inf directory and given names like "OEM1.INF". Since there is no clue as to which one to use, each OEMx.INF file has to be opened in a text editor and viewed to determine if it is the proper one. The file can best be recognized by the contents of the [Strings] section, which has the full title of the driver in it. An example Innovative INF file is reproduced in full below.

In Windows 95 Rev. B, newly installed INF files are placed in subdirectories. Our INF files are placed in a subdirectory called "Other" and the file is named "Innovative IntegrationPC44BD0.INF" or something similar. In any case, the board name is part of the file, allowing it to be picked out without opening the file.

As a precaution, the original INF file should be copied out of the Inf directory. The desktop makes a convenient location for the file.

## Editing the INF file

Open the INF file for the board with a text editor. The file should be similar to the unshaded portions of Figure 1.

```
[Version]
Signature=$CHICAGO$
Class=Other
Provider=%String0%

[ClassInstall]

[DestinationDirs]
DefaultDestDir=11

[Manufacturer]
%String1%=SECTION_0

[SECTION_0]
%String2%=pc44.install,PC44DSP

[pc44.install]
CopyFiles=pc44.copy
AddReg=pc44.registry
LogConfig=pc44_force,pc44_resources,sub_opt_pc44_resources

[pc44.copy]
pc44drv.vxd

[pc44.registry]
HKR,,DevLoader,0,pc44drv.vxd

[pc44_force]
ConfigPriority=DESIRED
IRQConfig=7
```

```

IOConfig=20@2C0-2E0%ffe0(3ff::)
MemConfig=4000@dc000-e0000%ffffc000

[pc44_resources]
ConfigPriority=NORMAL
IRQConfig=5,7,11,15
IOConfig=20@280-300%ffe0(3ff::),20@200-3e0%ffe0(3ff::)
MemConfig=4000@d0000-d4000%ffffc000,4000@c0000-ec000%ffffc000

[sub_opt_pc44_resources]
ConfigPriority=SUBOPTIMAL
IOConfig=20@280-300%ffe0(3ff::),20@200-3e0%ffe0(3ff::)
MemConfig=4000@d0000-d4000%ffffc000,4000@c0000-ec000%ffffc000

[ControlFlags]

[SourceDisksNames]
1=pc44InstallDisk,Disk1,

[SourceDisksFiles]
pc44drv.vxd=1

[Strings]
String0="Innovative Integration"
String1="Innovative Integration"
String2="PC44 Supercontroller"

```

**Figure 1: INF file for PC44**

The shaded text is the text that needs to be added to define the preferred selection and force its selection before the other configurations.

The first change is in the LogConfig line. This is a list of configurations to be loaded. The configurations are tried in order from left to right so the new configuration name (here, “pc44\_force”) must be **first** in the list. Otherwise, the old configurations will be tried, and found before this new one.

Each name in the LogConfig is the name of section in the file defining a configuration. The second shaded area is the new configuration section for the PC44. It is selecting the configuration IRQ 7, Ports 2c0, and Memory Region DC000. To select a different region, change the ranges to match. Note that it is important that the last number in the range be correct, or else the setting will be rejected and bypassed.

## PC32 and PC31 Users

Users who are modifying boards other than the PC44 have to be more careful, as the sizes of Dualport memory and IO ports that must be reserved are different. The simplest method to reduce errors is to copy the main resource block and rename its title. In the above file, this is “pc44\_resources”. The name will be similar to “pc32\_resources” on the PC32, and “pc31\_resources” on the PC31.

- Rename the new block “pcxx\_force” to match the name in the LogConfig.
- Delete all entries past the first comma in all lines. These are alternate settings to try, which we don’t want to happen. Delete the commas as well.
- Now change the rightmost number in the range to the desired value. The leftmost number is the size of the range, so add that value to the rightmost number to get the final number.

## ***Purging Windows' Memory***

Save the INF file with the changes.

Now, we have to remove all knowledge of the old configuration and force the new one to be read. This takes three steps:

- Open the System applet in the Control Panel, select the board device entry (PC44, PC32 etc) and press Remove. Answer yes to any message boxes, except if it asks to reboot. Do not reboot yet.
- With Explorer, find in the Inf directory the files DRVDATA.BIN and DRVIDX.BIN. Delete them. These files are the database created from the INF files.
- Shut down Windows 95 and power down the system.

## ***Quick Reinstall***

Power the system up.

In the control panel, select "Add New Hardware". Be sure and bypass the check for the hardware. On the next panel, select the "Other" hardware type as usual for Innovative boards. On the following panel, the PC44 should appear as an already installed type. Select it there, do not select "Use disk" or "Browse". From there, follow the installation as directed.

After the installation has completed, find the selected settings by opening up the device in the System control panel applet. The settings should match the preferred settings. If not, check the file for errors in the ranges.

## ***Uninstalling the Preferred Setting***

To remove the preferred setting, just remove the title from the LogConfig entry. The presence of a configuration not mentioned in that line has no effect.