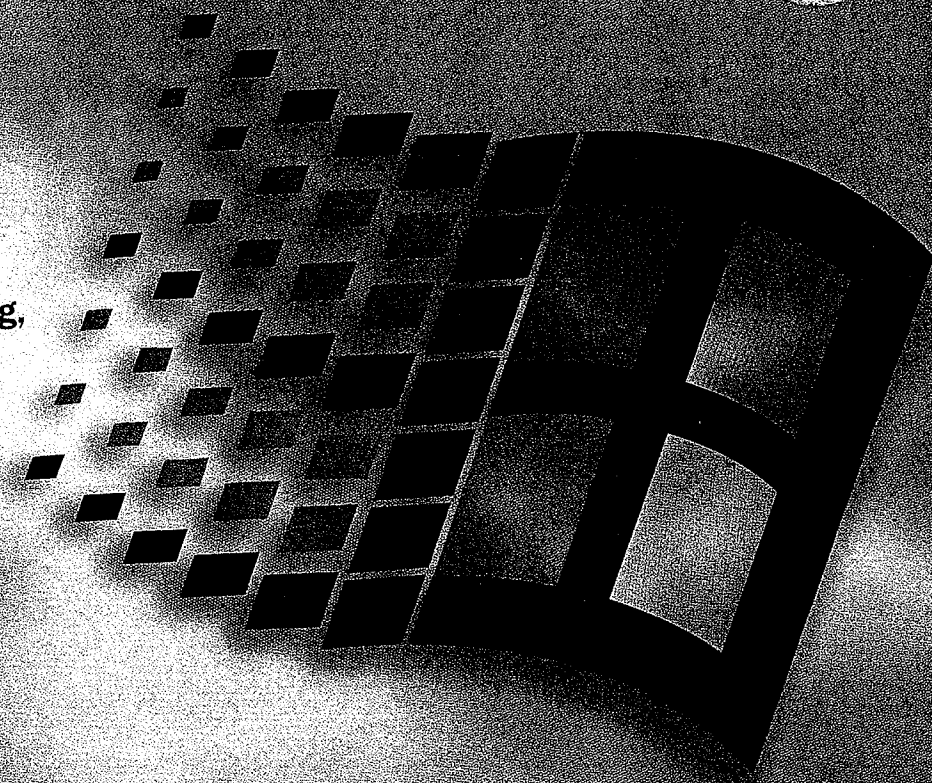


# EXHIBIT H



*The Professional's Companion to Windows 95*

The Technical Guide  
to Planning for,  
Installing, Configuring,  
and Supporting  
Windows 95 in  
Your Organization



# Microsoft **Windows 95** **Resource Kit**

**Microsoft Press**

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The Windows 95 hardware tree is a record of the current system configuration, based on the configuration information for all devices in the hardware branch of the Registry. The hardware tree is created in RAM each time the system is started or whenever a dynamic change occurs to the system configuration.

Each branch in the tree defines a device node with the following requirements for configuration:

- Unique identification code, or device ID
- List of required resources, including the resource type (such as IRQ and memory range) and constraints on specific resources (such as a COM port that requires IRQ3)
- List of allocated resources
- Indication that the device node is a bus, if applicable (each bus device has additional device nodes under it in the tree)

#### **Tip for Viewing the Hardware Tree**

Most information in the Windows 95 hardware tree can be seen by using Device Manager, which you can display by choosing the System option in Control Panel. Device Manager is described in Chapter 19, "Devices."

You can also see the information in the hardware tree in the Hkey\_Dyn\_Data\Dynamic\Enum section of the Windows 95 Registry.

The configuration process in Windows 95 uses the device nodes to identify the devices and resource requirements for establishing the working system configuration. For information about the components that work together in Windows 95 to configure the system, see Chapter 31, "Windows 95 Architecture."

## **Plug and Play Support in Windows 95**

Plug and Play is an independent set of computer architecture specifications that hardware manufacturers use to produce computer devices that can be configured with no user intervention.

For Plug and Play-compliant devices, installation consists of plugging in the device and turning on the computer. For example, a user can do the following:

- Insert and remove Plug and Play-compliant devices such as PCMCIA cards with automatic configuration.
- Connect to a docking station or network without restarting the computer or changing configuration parameters.
- Add a new monitor by plugging it in and turning it on.

The Plug and Play capabilities in Windows 95 have been widely described as key benefits to moving to Windows 95, because of the related reduction in hardware and software support costs. When Windows 95 detects the presence of a Plug and Play-compliant device, its device driver can be loaded and configured dynamically, requiring little or no user input. After the device and driver are installed, the driver reacts to system messages when a device is inserted or removed.

Microsoft recommends adding Plug and Play-compliant devices on legacy computers rather than adding non-Plug and Play devices. To use all Plug and Play features, however, your system must include a Plug and Play BIOS (the motherboard), devices (buses), and an operating system (Windows 95).

The following table compares the Plug and Play implementation in the Windows 95 operating system against other implementations.

| Windows 95 Plug and Play  | Most other implementations   |
|---|--|
| Dynamically loads, initializes, and unloads drivers in protected mode.  | Run in real mode, with MS-DOS-based drivers loaded in CONFIG.SYS.                          |
| Supports a wide range of device types (as described in the following section).  | Include only basic PCI-based and ISA-based device configuration.                           |
| Provides robust detection for devices, which is critical for Plug and Play on legacy computers.   | Do not provide hardware detection.   |
| Notifies other drivers and applications when a new device is available for use. Windows 95 also includes an automatic installation procedure to ensure that appropriate drivers are installed and loaded. | Configure device IRQ settings and so on, but the burden of installation falls on the user. |
| Provides robust, seamless operation through the integration of all subsystems and the startup process.  | Might not be as reliable.  |
| Provides an architecture with a consistent driver and bus interface for all devices.  | In real mode, do not provide a supporting architecture.                                    |

For additional details about the supporting architecture, see Chapter 31, "Windows 95 Architecture."