



# Digital Personal Workstation

## Pentium™ II Dual Processor Upgrade Kit

### *Upgrade Instructions*

## Introduction

These instructions supplement the Win NT Dual Upgrade Process instructions found in your System Reference Guide. Those instructions focus on the mechanical aspects of the upgrade. This booklet addresses the software modifications that must be made to Microsoft NT 4.0, so that it can recognize and use both processors.

Follow the directions in your System Reference Guide that will show you how to install the cards, and then return to this booklet to upgrade the software.

The Intel Pentium™ II Uniprocessor to Multiprocessor Upgrade procedure should not be done by someone that is unfamiliar with hardware and software upgrade procedures.

## Procedure Overview

Digital Personal Computers that currently have only a single processor has a different variant of Windows NT 4.0 installed on the system as its Operating System. The Operating System must be upgraded so that Windows NT will recognize the new multiprocessor system configuration. Without this upgrade, the new second processor will not be recognized and/or used by the Operating System.



## Assumptions

There are several assumptions that must be made concerning the condition of your system. It is assumed that:

1. You are using Microsoft NT 4.0 Workstation or Server on your Personal Computer.
  2. You have matched stepping on both Intel Pentium™ II Processors (same Revision number for both Processors). *See your System Reference Guide for more information.*
  3. You have installed Service Pack 2 or greater on your system.
- ***Please Note:*** *You must implement Microsoft Windows NT 4.0 Service Pack 2 or later, if you have not already done so. When booting your system, the top line that is shown during the boot “blue screen” shows if any Service Packs have been added and also identifies what version was used. We have verified that the system reliability and stability is greatly improved with this software upgrade.*
  - *Service Packs are free and are available from Microsoft’s Internet Home Page or from their FTP site. Their FTP site address is: <ftp://ftp.microsoft.com/bussys/winnt/>*

## Materials Needed

To perform this NT 4.0 Software upgrade, you will need a copy of the latest Windows NT 4.0 Service Pack.

## Upgrade Instructions

The following are the steps or procedures that are required to complete the Windows NT 4.0 Operating System Upgrade.

1. Ensure that you have a complete backup of your system, including an up to date Emergency Repair Disk (ERD).
2. Power Down System
3. Following the directions in your System Reference Guide to make the physical modifications to the system hardware and chassis, and then add the second Intel Pentium™ II Processor. Restart your system.
4. Find the file setup.log in the \WINNT\repair directory. Double click to open the file in Notepad.
5. Search for the string NTOSKRNL. Replace the second occurrence of NTOSKRNL.EXE with NTKRNLMP.EXE.

Search for the string HAL.DLL. Replace the second occurrence of HAL.DLL with HALMPS.DLL.

After the substitutions have been made, the two lines should be similar to this:

Before:

```
\WINNT\system32\ntoskrnl.exe="ntoskrnl.exe", "d90d0"  
\WINNT\system32\hal.dll="hal.dll", "d023"
```

After:

```
\WINNT\system32\ntoskrnl.exe="ntkrnlmp.exe", "d90d0"  
\WINNT\system32\hal.dll="halmps.dll", "d023"
```

6. Save the file and exit Notepad.
7. Reapply the service pack currently installed on your system.
8. This completes the upgrade process.

## Verifying the ERD Procedure Installation

1. Upon re-booting, while the initial “blue” screen is shown, the boot up process should show that both processors are recognized and the Operating System upgrade process should be complete.
2. Go to “Administrative Tools” and open the Performance Monitor. Press the “+” button. Two processors should be listed under the System Processor’s Monitoring Window. They should be identified as “Processor 0” and “Processor 1”.
3. If in both cases your system can identify both processors, you have successfully upgraded your Operating System. If your system is unable to see both processors, check that you have correctly edited Setup.log. If necessary, you can recover an original copy from your Emergency Repair Disk (ERD).

## Updating your Emergency Repair Disk (ERD)

Run Rdisk.exe to create a new and current Emergency Repair Disk (ERD). This is needed to ensure that you will have an Emergency Repair Disk, that can be used to restore your system.