



# DIGITAL Personal Workstation *au-Series* Operating System

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## Dual Boot Installation Guide

Part Number: EK-ALUNIX-OS. B01

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This guide describes how to run either the DIGITAL UNIX or Microsoft Windows NT *or both* operating systems on your *au-Series* system.

**Digital Equipment Corporation  
Maynard, Massachusetts**

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## Contents

Operating System Installation .....	1
Before You Begin.....	1
Console-Specific Considerations.....	1
Installing the DIGITAL NT Operating System on a DIGITAL UNIX System.....	2
Installing the DIGITAL NT Operating System.....	2
Special Considerations .....	2
Hardware Requirements .....	2
Precautionary Measures.....	2
Windows NT V4.0 Operating System Installation Steps .....	3
I. Switch to SRM Console .....	3
II. Determine what hard drives are used by UNIX.....	3
III. Switch From SRM to Alpha BIOS .....	5
IV. Install Windows NT .....	5
V. To Switch to SRM from Alpha BIOS (Boot UNIX) .....	6
VI. To Switch to Alpha BIOS from SRM (Boot Windows NT).....	7
Installing the DIGITAL UNIX Operating System on a DIGITAL Windows NT System .....	7
Installing the DIGITAL UNIX Operating System .....	7
Special Considerations .....	7
Hardware Requirements .....	7
Precautionary Measures.....	7
UNIX Operating System Installation Steps .....	7
I. Determine the Hard Drives that are used by NT.....	8
II. Switch to SRM Console .....	8
III. Install DIGITAL UNIX .....	8
IV. To Switch to Alpha BIOS (Boot Windows NT) .....	9
V. To Switch to SRM (Boot UNIX) .....	9



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# Preface

## Introduction

This guide describes how to configure an *au-Series* DIGITAL Personal Workstation running the DIGITAL UNIX or Windows NT operating system to function as a:

- DIGITAL UNIX only system
- Microsoft Windows NT only system
- Dual-boot system

*NOTE:* DIGITAL UNIX *system users can migrate to* Windows NT.

Your *au-Series* system is preloaded with the DIGITAL UNIX operating system and includes the latest firmware. Consult the DIGITAL Web site for firmware updates:

<http://www.workstation.digital.com/firmware.html>.

## Intended Audience

If you are interested in how to configure a DIGITAL Personal Workstation *au-Series* system with the DIGITAL UNIX or Microsoft Windows NT operating system, or both, this information is relevant for you.

## Preface

### Special Notices

Two kinds of notices emphasize specific information in this guide:

- A **CAUTION** indicates the presence of a hazard that can cause damage to hardware or that might corrupt software.
- A *NOTE* gives general information, such as compatibility with other products or pointers to other resources.

### Additional Information Resources

You may wish to consult the following information resources related to your DIGITAL Personal Workstation:

- DIGITAL *Personal Workstation a-Series User Information* (order number EK-ALMIA-UI). This guide explains how to start, use, upgrade, troubleshoot, and configure your system using the Microsoft Windows NT operating system.
- DIGITAL *Personal Workstation au-Series User Information* (order number EK-ALUNX-UI). This guide explains how to start, use, upgrade, troubleshoot, and configure your system using the DIGITAL UNIX operating system.
- DIGITAL *Quick Setup Guide* (order number ER-B30WW-IM). This graphical guide leads you through the initial installation of the DIGITAL Personal Workstation.
- Microsoft *Windows NT Workstation Installation Guide* (Microsoft document number 69396-0696)
- DIGITAL *UNIX Installation Guide* (order number AA-QTLGA-TE)

Contact your DIGITAL representative for other available product-related information.

### Feedback

Our readers' opinions about this or any other DIGITAL manual are important to us. If you have any comments, we'd appreciate hearing from you. Send e-mail to [reader\\_comments@eng.pko.dec.com](mailto:reader_comments@eng.pko.dec.com)

Please reference order number EK-ALUNX-OS. B01 in your correspondence about this guide.

## Operating System Installation

This guide explains how to install your DIGITAL Personal Workstation *au-Series* system with either the DIGITAL UNIX *or* the Windows NT operating system with the capability of running either.

### Before You Begin

The following guidelines will help ensure a smooth operating-system installation:

- Before you install an operating system, make note of your current system's hardware locations, controller types, and boot selections.
- Insure that all options installed are supported by BOTH operating systems, in particular, Graphics Adapters.
- Ensure that you have all the right bits available for your new operating system, such as the latest firmware revisions, HAL (hardware abstraction layer) revisions, and UNIX V4.0C or later.

### Console-Specific Considerations

The DIGITAL Personal Workstation *au-Series* includes two different consoles: SRM, which is compatible with UNIX and VMS device-naming conventions. Alpha BIOS firmware has been tailored for compatibility with the Windows NT operating system device-naming conventions. These two consoles use different methods for recording user preferences, boot selections, and time of day.

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#### Caution

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Because of the different naming conventions that DIGITAL UNIX and Windows NT use, it is crucial that you record the disk configurations as both consoles view them prior to changing settings or the hardware itself. See the specific instructions later in this guide.

It is recommended that, if possible, any disks used by the operating system already installed, be removed or disconnected while installing the second operating system software.

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## Installing the DIGITAL NT Operating System on a DIGITAL UNIX System

Your system came with the DIGITAL UNIX operating system preloaded. If you choose to run the UNIX operating system *only*, your system is ready to go.

### Installing the DIGITAL NT Operating System

#### Special Considerations

If you choose to run the Windows NT operating system, you must install it from the CD-ROM that came with your system. Before beginning the installation, please read through the following considerations.

#### Hardware Requirements

Windows NT requires a separate hard disk drive. UNIX and NT cannot reside on the same drive. You received an additional drive with your system. However, you must ensure

(1) that it contains no data *or* (2) that any data on the additional drive is backed up before you attempt to have two operating systems reside on your workstation.

#### Precautionary Measures

**CAUTION: Installing and running two operating systems on one machine carries risks. To minimize these risks, first ensure that you have backups of all your files.**

If you do not plan to keep the DIGITAL UNIX operating system on your machine, you may want to remove UNIX and the data hard drive for safekeeping.

The Windows NT Disk Manager utility does not recognize the format of a UNIX disk. Therefore, take care when recording the SCSI ID of your UNIX disk and disk numbers so that you do not inadvertently allow the Disk Manager to corrupt your UNIX disk.

**CAUTION: The Disk Manager utility will prompt you to place a “signature” on your UNIX disk. Default is Yes, which corrupts the UNIX disk. Take care to answer No each time you use the Disk Manager utility when the UNIX disk is in the system.**

## au-Series Operating System Installation Guide

### Windows NT V4.0 Operating System Installation Steps

Follow the step by step instructions below to install Windows NT on a system already loaded with DIGITAL UNIX.

*NOTE: After each command, press either [Return] or [Enter], depending upon what type of keyboard you have.*

#### I. Switch to SRM Console -

If SRM is already selected, proceed to Step II.

- a) Select CMOS SETUP menu item
- b) Press F6 key to enter ADVANCED
- c) Tab down to CONSOLE SELECTION
- d) Select DIGITAL UNIX Console (SRM)\_
- e) Press F10 key twice
- f) Press [Enter].
- g) Power Cycle the system

#### II. Determine what hard drives are used by UNIX:

- a) At the SRM prompt, boot UNIX by typing in boot dev#  
**or**  
if the bootdef\_dev variable has been set, just boot.
- b) After UNIX has booted, log in.
- c) From a DECterm window, type df
- d) Note the device id that contains the root, usr and var directories.  
Also note any other device that is mounted.

#### Example:

```
>df
Filesystem  5112-blocks  Used  Available  Capacity  Mounted on
/dev/rz0a      36108      148924    176522      46%      /
/proc           0           0         0        100%    /proc
/dev/rz10c    1891454    954468    747840      57%     /usr
/dev/rz11c    1891454    1478178    224130      87%    /mnt1
/dev/rz0g     1012680    1012680    820192      90%    /usr1
```

Devices rz0(root), rz10(usr), and rz11(mnt1) are being used in this example.

- e) At a DECterm window, type swapon -s
- f) Record the devices that are being used as the primary and secondary swap space.

## au-Series Operating System Installation Guide

- **Table 1 is an example configuration. The device identifications will vary with each individual configuration.**
- **This configuration contains no IDE drives, and SRM console os\_type is set to UNNIX.**

**Table 1: Example Configuration**

Controller Number	SCSI ID	SRM	UNIX	NT
0	0	dkc0	rz16	disk 0
	1	dkc100	rz17	disk 1
	2	dkc200	rz18	disk 2
	5	dkc500	rz21	disk 3
1	0	dkd0	rz24	disk 4
	1	dkd100	rz25	disk 5
	2	dkd200	rz26	disk 6
	3	dkd300	rz27	disk 7
	4	dkd400	rz28	disk 8
	5	dkd500	rz29	disk 9

Devices rz0(root), rz10(usr), and rz11(mnt1) are being used in this example.

### Example:

```
>swapon -s
```

Swap partition /dev/rz0b (default swap):

```
Allocated space: 40685 pages (317MB)
In-use space:    14814 pages ( 36%)
Free space:      25871 pages ( 63%)
```

Swap partition /dev/rz1C:

```
Allocated space: 128178 pages (1001MB)
In-use space:    287 pages ( 0%)
Free space:      127891 pages ( 99%)
```

Total swap allocation:

```
Allocated space: 168863 pages (1319MB)
In-use space:    24928 pages ( 14%)
Free space:      15101 pages ( 8%)
Available space: 143935 ( 85%)
```

## *au-Series* Operating System Installation Guide

In this example, device rz1 and rz0 are being used as swap disks.

- g) At a DECterm window, type shutdown -h  
This will shut down the system to the SRM console.

### **III. Switch From SRM to Alpha BIOS**

- a) At the SRM console prompt, type SET os\_type NT
- b) Power cycle the system.
- c) Alpha BIOS will be entered when the system comes up.

### **IV. Install Windows NT**

- a) For the following steps, refer to the Microsoft Windows NT Installation Guide (Microsoft document number 69396-0696)
- b) Insert Windows NT installation CD ROM
- c) When Alpha BIOS completes memory test, press the F2 key to enter setup.
- d) Select the hard disk setup menu item.
- e) At the Express setup window, press ESC.
- f) Select the disk on which Windows NT will be installed.

*NOTE: When selecting the device to install Windows NT, make sure you do not select any disk that is being used for the UNIX operating system. Refer to the list that was made in Step II, and the attached table to determine which disks are being used by UNIX.*

- g) Press F6 to format the selected disk.
- h) After the format is completed, press ESC to exit.
- i) Select Install Windows NT from menu.
- j) For the rest of the NT installation, follow the Microsoft *Windows NT Installation Guide*, (Microsoft document number 69396-0696)
- k) Choose Install Windows NT.
- l) Press [Enter].
- m) If the system indicates that the CD-ROM device is not visible, press [Esc] to leave Setup, power cycle the machine, and repeat the process.

*NOTE: Wait 45 seconds before turning the system back on.*

## au-Series Operating System Installation Guide

### IV. Install Windows NT (continued)

- n) Press [Esc] to return to Setup.
- o) Select Install Windows NT.  
The system partition should be partition 2.
- p) When you are prompted for computer type at the Window NT Setup screen, choose other.
- q) Press [Enter].
- r) Install the hardware support floppy diskette, and select DIGITAL Personal Workstation a-Series. If your system has no IDE devices, Go to Step W.
- s) When you are prompted about additional storage devices, choose s and then other.
- t) Insert the floppy diskette with the CMD CSA-64xx IDE Driver.
- u) Press [Enter].
- v) After the IDE driver is installed, press [Enter] to continue with Setup.
- w) At the Windows NT Workstation Setup screen, press [Enter].
- x) At the Windows NT Workstation Setup screen, press [Enter] to confirm your hardware and software components.
- y) When you are prompted to select a drive on which to install Windows NT, choose the large FAT partition (C).

*NOTE: You may choose to format the drive as an NTFS drive. See your Windows NT operating system documentation for more information on drive formats.*

- z) Press [Enter] to install Windows NT.

### V. To Switch to SRM from Alpha BIOS (Boot UNIX)

- a) From NT, shutr down the system.
- b) After Alpha BIOS finishes memory test, press the F2 key to enter the setup.
- c) Select the CMOS SETUP menu item.
- d) Press F6 ADVANCED
- e) Tab down to Console Selection
- f) Select: DIGITAL UNIX Console (SRM)
- g) Press F10 key twice
- h) Press enter
- i) Power cycle the system
- j) The SRM console will be entered when the system comes up.

## *au-Series* Operating System Installation Guide

### **VI. To Switch to Alpha BIOS from SRM (Boot Windows NT)**

- a) Select CMOS SETUP menu item
- b) Press F6 key to enter ADVANCED
- c) Tab down to Console Selection
- d) Select: DIGITAL UNIX Console (SRM)
- e) Press F10 key twice
- f) Press enter
- g) Power cycle the system

### **Installing the DIGITAL UNIX Operating System on a DIGITAL Windows NT System**

Your system came with the DIGITAL Windows NT operating system preloaded. If you choose to run the UNIX operating system *only*, your system is ready to go.

#### **Installing the DIGITAL UNIX Operating System**

##### **Special Considerations**

If you choose to run UNIX, you must install it either from CD-ROM or RIS installation. Before beginning the installation, please read through the following considerations.

##### **Hardware Requirements**

UNIX requires a separate hard disk drive. UNIX and NT cannot reside on the same drive. You received an additional drive with your system. However, you must ensure

(1) that it contains no data *or* (2) that any data on the additional drive is backed up before you attempt to have two operating systems reside on your workstation.

##### **Precautionary Measures**

**CAUTION: Installing and running two operating systems on one machine carries risks. To minimize these risks, first ensure that you have backups of all your files.**

If you do not plan to keep the Windows NT operating system on your machine, you may want to remove Windows NT and the data hard drive for safekeeping.

### **UNIX Operating System Installation Steps**

Follow the step by step instructions below to install UNIX on a system already loaded with Windows NT.

*NOTE: After each command, press either [Return] or [Enter], depending upon what type of keyboard you have.*

## au-Series Operating System Installation Guide

### I. Determine the Hard Drives that are used by NT

- a) Power Up /init system
- b) After Alpha BIOS memory test, press the F2 key to enter setup.
- c) Select Menu item UTILITIES
- d) Select Menu item OS Selection Setup
- e) Note SCSI controller and device number.  
Also note disks being used for NT system disks  
Example: Disk 8, Partition 2.  
*Make sure to note the SCSI controller number and device number.*
- f) Record this and any other disk that is to be used for NT
- g) Press ESC to return

### II. Switch to SRM Console

- a) Select CMOS SETUP menu item
- b) Press F6 key to enter ADVANCED
- c) Tab down to CONSOLE SELECTION
- d) Select DIGITAL UNIX Console (SRM)\_
- e) Press F10 key twice
- f) Press [Enter].
- g) Power Cycle the system

### III. Install DIGITAL UNIX:

*NOTE: UNIX can be installed either by conducting a RIS installation, or it can be installed using the UNIX installation CD-ROM. This procedure will illustrate an installation using the UNIX CD-ROM.*

- a) For the following steps, refer to the UNIX Installation Guide (Order Number AA-QTLGA-TE).
- b) Insert the UNIX Installation CD-ROM
- c) At the SRM console prompt, determine the id of your CD-ROM.
- d) The UNIX installation menu will appear on the screen after the CD has booted.

*NOTE: When selecting the device to install the root, usr and var directories and primary/secondary swap space, be sure not to select the device which is the NT system disk or any hard disk that is to be used with NT. Use the list obtained in Step II and the attached label to assist in identifying the NT drives on the system.*

## *au-Series* Operating System Installation Guide

- **Table 2 is an example configuration. The device identifications will vary with each individual configuration.**
- **This configuration contains no IDE drives, and SRM console `os_type` is set to UNNIX.**

**Table 2: Example Configuration**

Controller Number	SCSI ID	SRM	UNIX	NT
0	0	dkc0	rz16	disk 0
	1	dkc100	rz17	disk 1
	2	dkc200	rz18	disk 2
	5	dkc500	rz21	disk 3
1	0	dkd0	rz24	disk 4
	1	dkd100	rz25	disk 5
	2	dkd200	rz26	disk 6
	3	dkd300	rz27	disk 7
	4	dkd400	rz28	disk 8
	5	dkd500	rz29	disk 9

- e) Supply all information necessary for the UNIX installation. Refer to the *UNIX Installation Guide*.
- f) After installation, the system will boot to the UNIX operating system.

### **IV. To Switch to Alpha BIOS (Boot Windows NT)**

- a) At the SRM console prompt, type SET `os_type` NT
- b) Power cycle the system.
- c) Alpha BIOS will be entered when the system comes up.

### **V. To Switch to SRM (Boot UNIX)**

- a) From NT, shutdown the system.
- b) After Alpha BIOS completes memory test, press the F2 key to enter setup.
- c) Select the CMOS SETUP menu item.
- d) Press F6 ADVANCED
- e) Tab down to Console Selection
- f) Select : DIGITAL UNIX Console (SRM)
- g) Press F10 key twice
- h) Press [Enter]
- i) Power cycle the system
- j) The SRM Console will be entered when the system comes up.

