



AT&T

**AT&T UNIX[®] PC
GSS-DRIVERS[™]**

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Contents

1	Overview	
	Overview	1-1
	Purpose of GSS-DRIVERS	1-3
	Graphics Standardization	1-4
	GSS-DRIVERS Features	1-5

2	Installation	
	Installation	2-1



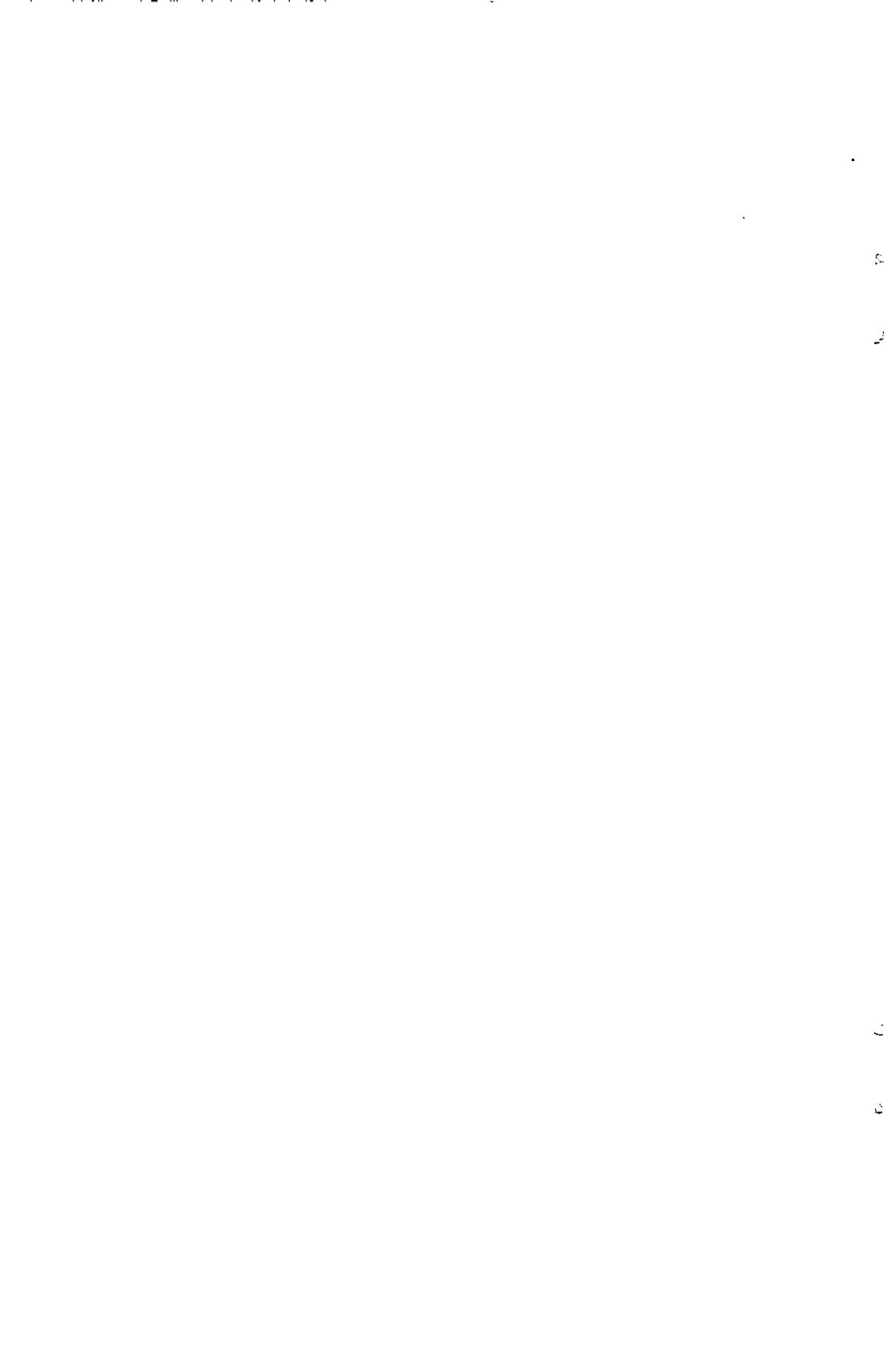
List of Figures

Figure 1-1 Generating a Metafile	1-8
Figure 1-2 Interpreting a Metafile	1-9



1 Overview

Overview	1 - 1
Purpose of GSS-DRIVERS	1 - 3
Graphics Standardization	1 - 4
GSS-DRIVERS Features	1 - 5



Overview

This booklet contains general information about GSS-DRIVERS and the procedure for installing the GSS-DRIVERS software on the AT&T UNIXTM PC. The booklet is intended to be used in conjunction with the *Virtual Device Interface (VDI) Programmer's Guide* which provides specific information about each device driver supported by GSS-DRIVERS.

GSS-DRIVERS must be installed before GSS-based graphics applications software can be run on the UNIX PC. Part of the GSS-DRIVERS software are programs called "device drivers." The proper device driver must be installed in order to select and control the corresponding printer and/or plotter connected to the UNIX PC. The device drivers need not be installed if GSS-based graphics applications will not be run on the UNIX PC.

Note

The *VDI Programmer's Guide* was previously titled *GSS-DRIVERS C Binding Programmer's Guide*.

GSS-DRIVERS refers to the device drivers that are bundled with the UNIX PC system software. These devices include:

- AT&T UNIX PC Model 7300 Display
- AT&T Model 455 Letter Quality Printer
- AT&T Model 470 Graphics Printer
- Hewlett-Packard 7470A Plotter
- Hewlett-Packard 7475A Plotter
- Epson[®]MX-80 Printer with Graphtrax Plus
- Virtual Device Metafile (VDM)

There are two sections in this manual. Each of the sections is shown in the following list, with a description of the section and how it can be used to your best advantage.

Section 1 This section contains general information about GSS-DRIVERS and a brief description of the kinds of output primitives and attributes that are used in the GSS-DRIVERS software. Use this section to become familiar with GSS-DRIVERS and with these graphic components.

Section 2 The second section of this manual provides you with an installation procedure for the device drivers. Use this one-time-only procedure to install the software on your personal computer.

Note

Additional device drivers are available in the GSS-DRIVERS+ software package that can be ordered separately.

GSS-DRIVERS+ includes the following device drivers:

Diablo® C150 Ink Jet Color Printer

Epson® MX-100 Printer

HILOT® DMP-29 Plotter

NEC Model 7730 Letter Quality Printer

NEC Model 3550 Letter Quality Printer

Okidata Microline™ 92 Printer

Okidata Microline 93 Printer

Okidata Microline 84 Printer with Step 2 Support

Summagraphics® Summatablet™

VT100™ Terminal with Retro-Graphics Card

Purpose of GSS-DRIVERS

GSS-DRIVERS is a software package designed to provide a device-independent interface to peripheral devices used with the AT&T UNIX PC. GSS-DRIVERS enables the UNIX PC to select and control any one of several different peripheral devices supported by GSS-DRIVERS. The device drivers are transparent to the user and thus allow full attention to the application program without concern for directing output to a wide variety of peripheral devices.

Graphics Standardization

There are several types of graphic output devices and few operate in exactly the same manner. Terminals do not necessarily draw lines like plotters. Plotters do not necessarily fill in areas like printers. Even within device types, those that are manufactured by different companies often perform the same function in different ways.

Until recently, it was difficult to connect peripherals from different vendors to the same host system. Now, industry standards are emerging that define the interface between different graphics systems.

One of the emerging standards is the **Virtual Device Interface (VDI)**. This proposed and widely accepted standard, defines how graphics peripherals should communicate with a host computer. Within the VDI, graphics devices are represented generically with respect to their function or purpose. Details about specific device operation is transparent at higher levels to isolate the application program from the equipment that is connected to a system.

A second graphics standard is the **Virtual Device Metafile (VDM)**. This standard establishes a uniform method for recording graphic images on an external storage device, such as a hard disk. The files that are created to store these images are called "metafiles." With VDM, application programs can send graphics information to a metafile in the same manner that they send information to a peripheral device.

GSS-DRIVERS Features

The device drivers within the GSS-DRIVERS software package adhere to both the VDI and VDM graphic standards. These device drivers are transparent to the operating system of your UNIX PC, allowing you to run graphics applications and direct the result to an output device, without the need for additional software.

Status Inquiry

Since graphic application programs are extremely variable and the system environment must vary accordingly, it is essential that a graphics application program has some method to monitor system status. GSS-DRIVERS meets this need with a series of "inquiry" routines. In addition to system status, the inquiry routines allow the application program to acquire feedback about the actual capabilities of the output device that is currently open.

Output Primitives

The output primitive is the smallest component of a device-independent image. Although there are smaller device-dependent elements, such as the pixel, the output primitive is the base component of a mobile graphics image.

The device drivers in this software package use ten output primitives. Each of these output primitives is described in the following list, with a brief note about their typical attributes.

Polyline A polyline can be a single vector, but is usually a series of vectors that are connected end-to-end, intersect, or are aligned in some other manner. Both the origin and terminus of each vector must be specified.

The typical attributes of polylines are line style, line width, and color.

Polymarker A polymarker can be a single marker-position, but is usually a series of related marker-positions. The location of each marker-position must be specified.

The typical attributes of polymarkers are marker type, size, and color.

Graphic Text	<p>Graphic Text consists of one or more characters in a string that can appear at any screen location. The location of the string and the text attributes must be specified.</p> <p>The typical attributes of Graphic Text are font, size, and rotation.</p>
Cursor Text	<p>Cursor Text consists of one or more characters within a rectangular grid. The location of the grid is device-dependent and cannot be changed. Each Cursor Text grid is formed by a series of rows and columns (typically 24 x 80). A Cursor Text string has only one font and is neither scalable or rotatable.</p>
Alpha Text	<p>Alpha Text consists of one or more characters in a string that appears at some selectable location. The location of the string and the text attributes must be specified.</p> <p>There are many kinds of attributes for Alpha Text, including fonts, spacing, underlining, bolding, subscripting, and superscripting.</p>
Filled Areas	<p>A Filled Area consists of an area that is defined by its perimeter and filled with some pattern.</p> <p>The typical attributes of a Filled Area correspond to the interior fill and are Hollow, Solid, or Hatch. The Hatch attribute usually has alternative kinds of fill patterns.</p>
Bar	<p>A Bar is a rectangular-shaped Filled Area that appears at some selectable location. The Bar is defined by two diagonally opposite vertices.</p> <p>The attributes of the Bar correspond to those of the Filled Area.</p>
Circle	<p>A Circle is defined by a center point and a radius.</p> <p>The attributes of the Circle correspond to the attributes of Polylines.</p>

Arc An Arc is a curved line defined by a center point, a radius, and the angles of both its origin and terminus.

The attributes of the Arc correspond to the attributes of Polylines.

Pie Slice A Pie Slice is a Filled Area that is defined by a center point, an arc, and two vectors that correspond to the angles of the origin and terminus of the arc.

The attributes of the Pie Slice correspond to those of the Filled Area.

Graphics Input

There are several methods for an end-user to enter data into an operating graphics program. Each method is associated with an input device. The following list shows the more common Graphics Input devices.

- Mouse
- Joystick
- Thumbwheel
- Switch
- Cursor or Arrow Keys
- Alphanumeric Keys

Metafile Generation

Metafile Generation is a standard method for saving a graphics picture on a file-oriented storage device. Metafiles make it possible to save a copy of a graphics display or to defer actual output from a graphics program.

Metafiles are generated through a VDM (Virtual Device Metafile) driver included in GSS-DRIVERS. The VDM is treated as any other virtual device. Graphics commands are sent from an application via the standard VDI interface.

Once a picture has been stored in the VDM format, it must be interpreted before being output to a graphics device. This is done by a separate product, the AT&T UNIX PC GSS-TOOLKIT™ Metafile Interpreter. Metafile interpreter functions can be used in conjunction with a graphics application and other utilities to integrate a picture into the final output.

FIGURE 1-1 Generating a Metafile

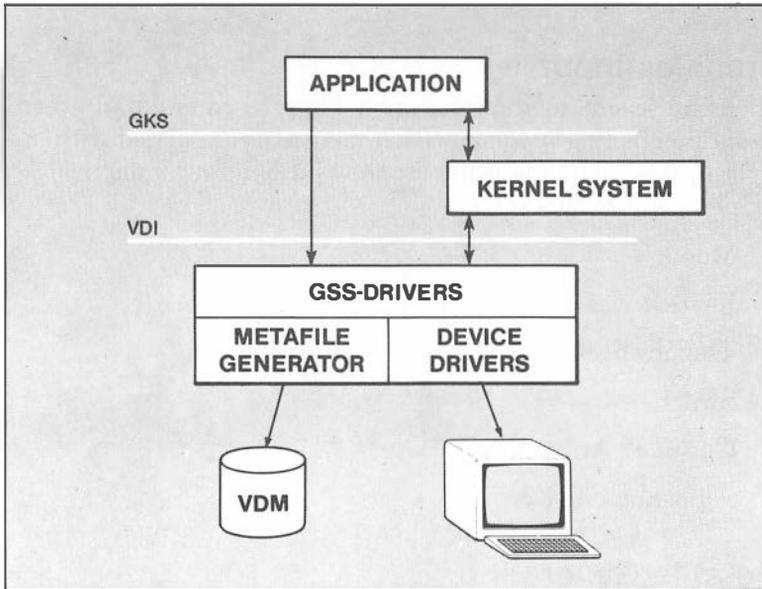
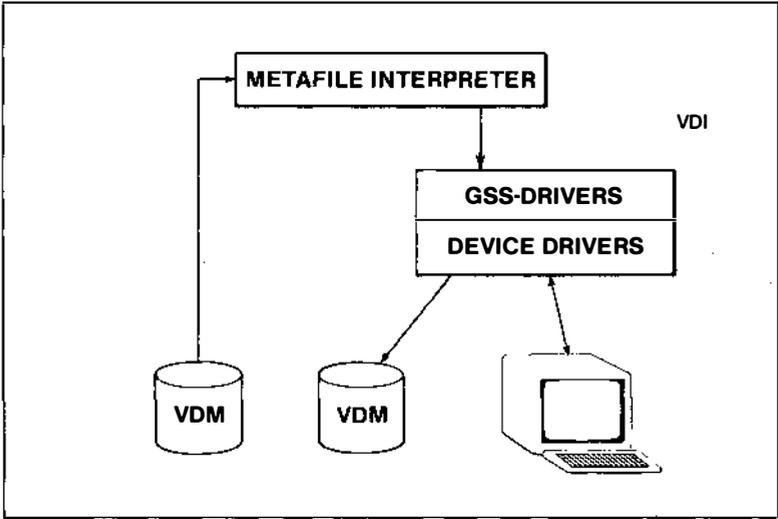


FIGURE 1-2 Interpreting a Metafile



2 Installation



Installation

This section contains a guide to installing the AT&T UNIX PC GSS-DRIVERS software. Depending upon the version of the operating system being used, some procedures and screen displays may vary from those shown here. Typical variations in the procedure are addressed within this guide, although others may exist.

Before you begin the installation procedure, locate the following floppy disks:

AT&T UNIX PC GSS-DRIVERS Disk 1 of 2
AT&T UNIX PC GSS-DRIVERS Disk 2 of 2

1 When prompted by **Please login:**

- Type your user login or you can type *install*.
- Press .

If a password is required for system access, the **Password:** prompt will appear and you must continue with the following instructions. Otherwise, proceed with the instructions in step 2.

- Type the password exactly as it was defined to the system. As a security measure, the password will not be displayed on the screen when it is typed.
- Press .

- 2 The system briefly displays a message that shows the amount of available storage space.

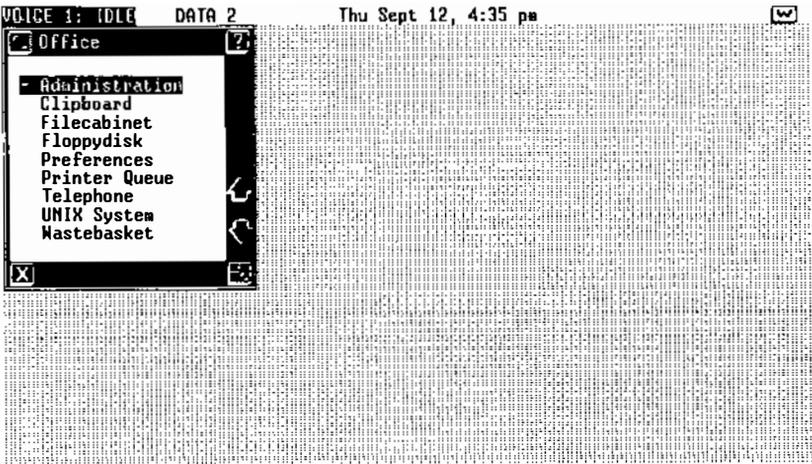
Note

If there is less than 15% of the storage space available, you may want to choose one of the following options:

- Delete unnecessary files from the Wastebasket.
- Backup files from the hard disk onto floppy disks and delete these files from the hard disk.
- Remove software that is no longer required.

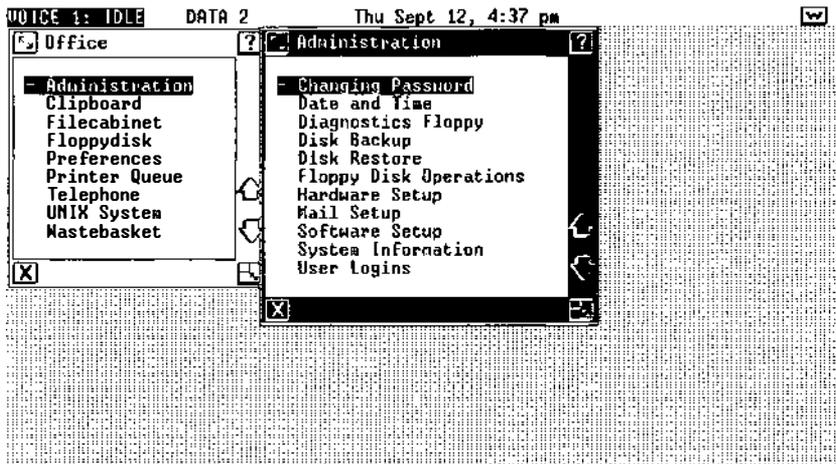
See the *AT&T UNIX PC Owner's Manual* for details on performing these operations.

- 3 After a few seconds, the system displays the following Office Window with the **Administration** selection highlighted.



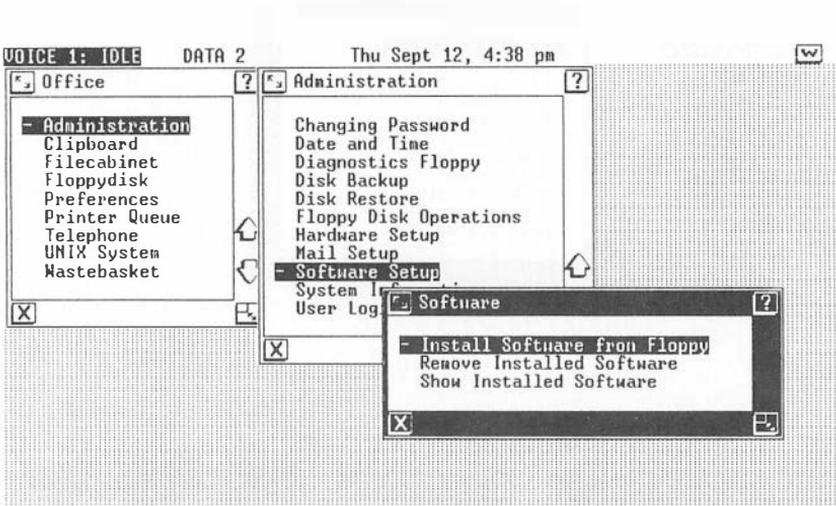
- Press .

4 The system displays the Administration Window.



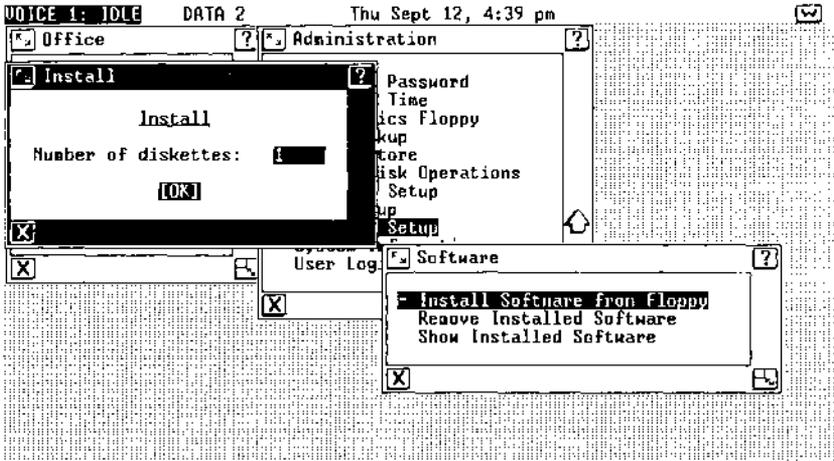
- Press until you have highlighted **Software Setup**.
- Press .

- 5 The system displays the Software Window with the **Install Software from Floppy** selection highlighted.



- Press **Enter** .

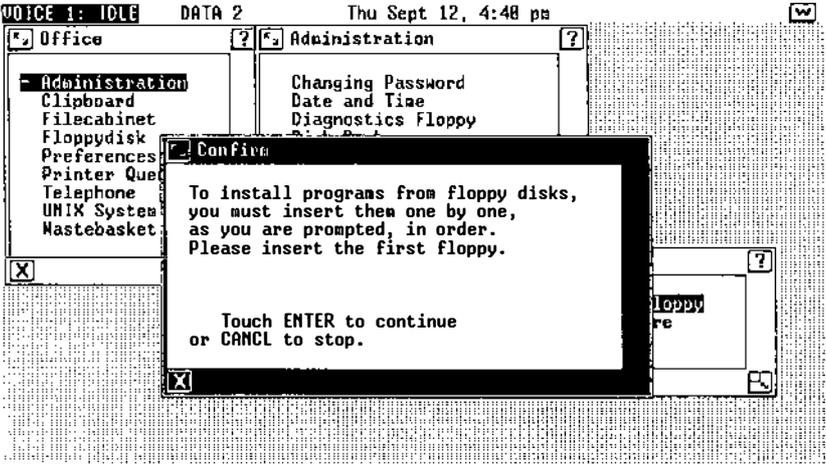
- 6 At this point, depending upon the version of the operating system being used, the system may display the Install Window with the cursor positioned at the prompt **Number of diskettes:** as shown below. If so, continue with the following instructions. Otherwise, proceed with the instructions in step 7.



Type number of floppy diskettes to be installed.

- Enter the number of diskettes that are included with the software package being installed.
- Press .

- 7 The system displays the Confirm Window with the following message or a similar message instructing you to insert the first diskette:



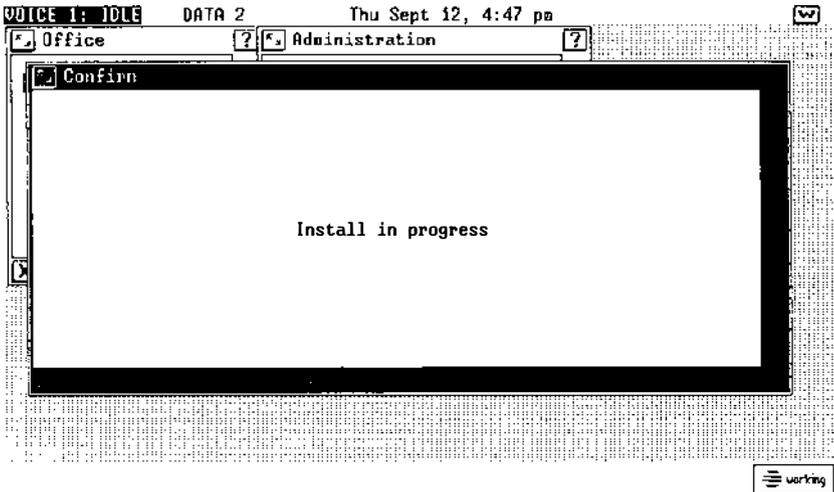
- Insert the AT&T UNIX PC GSS-DRIVERS Disk 1 of 2 into the diskette drive with the label facing up.
- Close the drive by flipping the lever down.
- Press .

Note

If an error message appears on the screen during installation, check for the following:

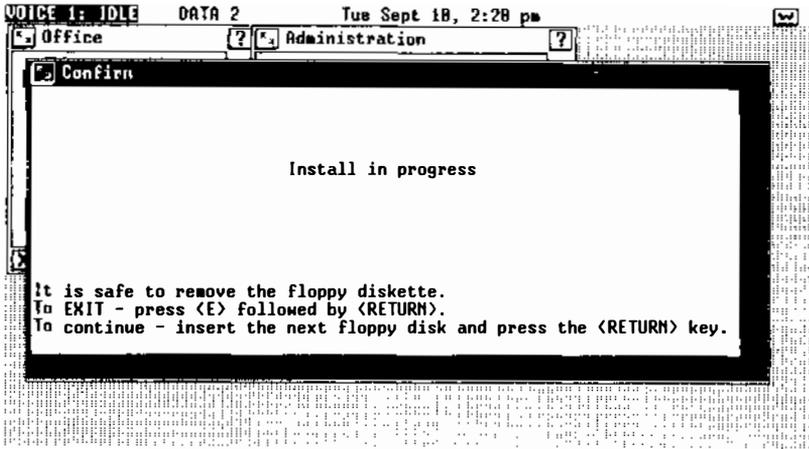
- Make sure that the diskettes are being inserted in the proper sequence.
- Make sure that both diskettes are in good working condition.

- 8 Depending upon the version of the operating system being used, the system may display the Confirm Window with the **Install in Progress** message as shown below. If so, continue with the following instructions. Otherwise, a screen message informs you of the storage space available on your system and offers you the opportunity to continue by pressing **Enter** or to cancel the installation by pressing **Cancel**. If not enough space is available, see the options listed under step 2.



- ❑ Do not open the diskette drive until it is safe or data can be lost or destroyed.

- 9 When it is safe to remove the diskette, the system displays the following screen:



- Open the diskette drive by flipping the drive lever up.
 - Remove the AT&T UNIX PC GSS-DRIVERS Disk 1 of 2.
- 10 Next, get the AT&T UNIX PC GSS-DRIVERS Disk 2 of 2.
- Insert the second GSS-DRIVERS diskette into the drive with the label facing up.
 - Close the drive by flipping the drive lever down.
 - Press .
- 11 The system displays the following message:

Transfer in progress. Do not remove the floppy diskette.

Shortly you see the following message appear within the Confirm Window as each driver is installed:

It is safe to remove the floppy diskette.

Creating driver directory.

Installing device drivers:

pc7300

att455

att470

hp7470

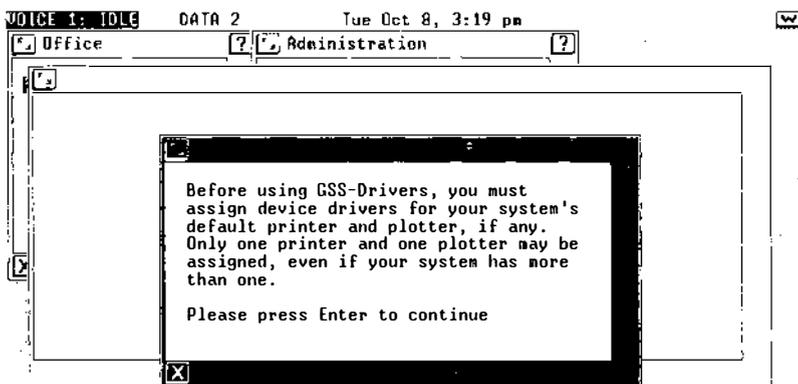
hp7475

epmx80

ddmeta

Updating special Office Manager files.

12 Shortly thereafter, the system displays the following window:

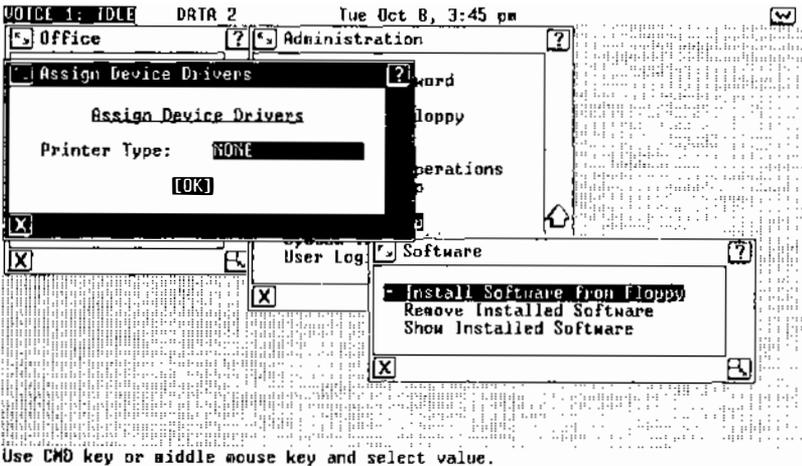


- Remove the **AT&T UNIX PC GSS-DRIVERS Version 1.00 2 of 2** disk from the floppy drive.
- After you have read the message concerning the assignment of default printer and plotter, press to continue.

Note

Even though printers and plotters are installed through the drivers installation instructions presented in this booklet, a printer must also be set up through the Printer Set Up Menu. See the *AT&T UNIX PC Owner's Manual* for details on performing this operation.

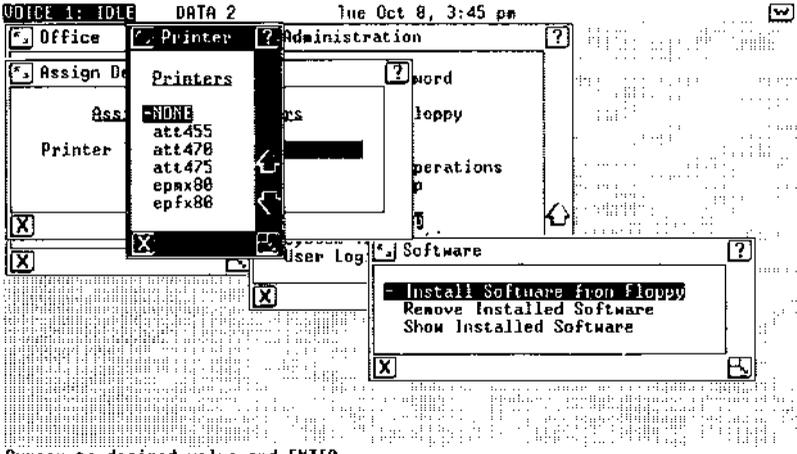
13 Next, you see the following Assign Device Drivers window:



Use **Cmd** key or middle mouse key and select value.

- Now, you may select a default printer. Notice that **NONE** is highlighted within the window. You may leave the system without a designated default printer device driver by pressing **Enter**, or by using the mouse to position the arrow at **OK** and pressing the left mouse key. If you select **NONE**, proceed with the instructions in step 15. Otherwise, continue with the following instructions.
- If you wish to select a printer driver as the default, press the **Cmd** key, or the middle mouse key.

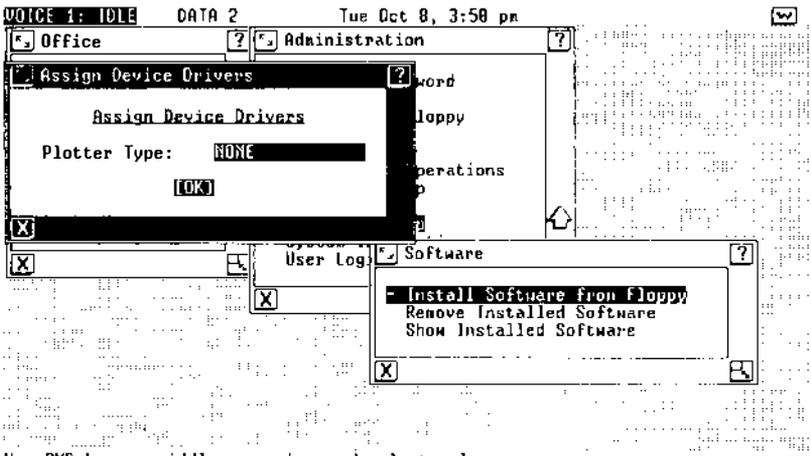
14 The system displays the following Printer window:



Cursor to desired value and ENTER

- Press the **Next** key, or use the mouse to highlight the desired printer driver, and then press **Enter**, or the left mouse key.
- The Assign Device Driver screen will reappear with the name of the driver you have selected. Now select this driver as the default printer driver by pressing the **Enter** key, or by positioning the arrow at **[OK]** and pressing the left mouse key.

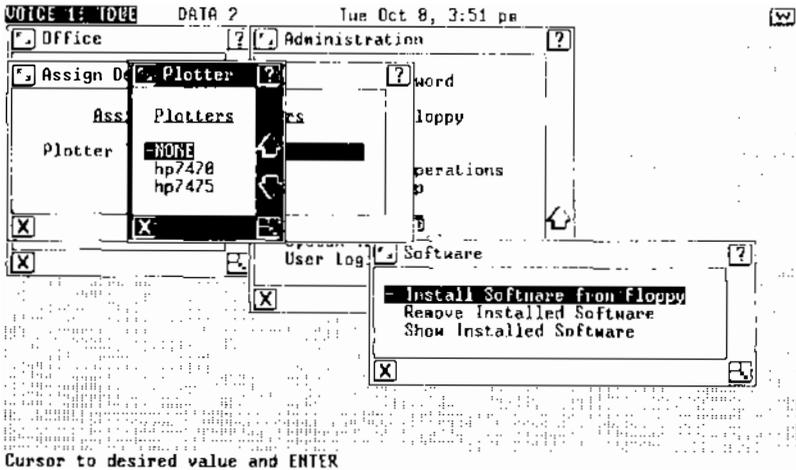
- 15 The Assign Device Driver window now shows the current default plotter driver:



Use CMD key or middle mouse key and select value.

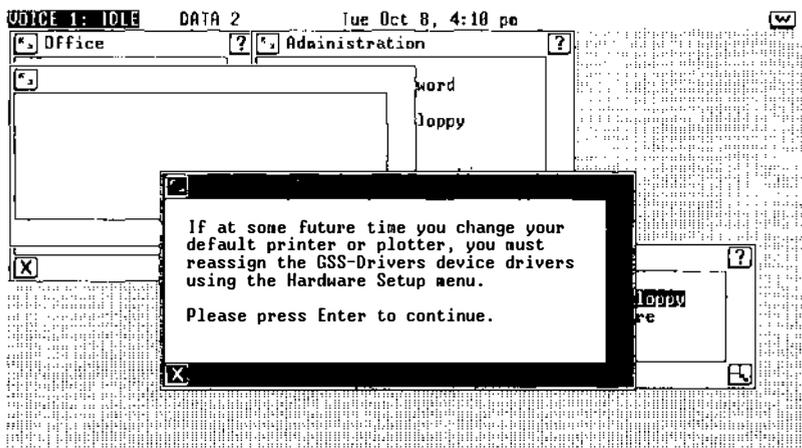
- Now, you may select a default plotter. Notice that NONE is highlighted within the window. You may leave the system without a designated default plotter by pressing the **Enter** key, or by using the mouse to position the arrow at **OK** and pressing the left mouse key. If you select NONE, proceed with the instructions in step 17. Otherwise, continue with the following instructions.
- If you wish to select a plotter driver as the default, press the **Cmd** key, or the middle mouse key.

16 The system displays the following Plotter window:



- Press the **Next** key, or use the mouse to highlight the desired plotter driver, and then press **Enter** or the left mouse key.
- The Assign Device Drivers screen will reappear with the name of the plotter driver you have selected. Now select this driver as the default plotter driver by pressing the **Enter** key or by positioning the arrow at [OK] and pressing the left mouse key.

- 17 The next window message explains how to reassign device drivers in the future.



- Press **Enter** as indicated on the screen.

- 18 When the installation is complete, the system displays the following message:

**The installation of the GSS-DRIVERS
Version 1.01 install Set 1 package is
now complete.**

Please press Enter to continue.

- Press **Enter** as indicated on the screen.

- 19 The system removes the Confirm Window from the screen and displays the Software Window.

- Press **Exit** to return to the Administration Window.
- Press **Exit** again to return to the Office Window.

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