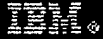


557



Return to previous page

IBM RT PERSONAL COMPUTER (TM) ADVANCED INTERACTIVE EXECUTIVE (TM) OPERATING SYSTEM VERSION 2.1

IBM Announcement Letter Number 286-399 dated September 18, 1986
IBM US - Last Revised on September 18, 1986

Brief Description of Announcement, Charges, and Availability

Version 2.1 of the IBM RT Personal Computer (RT PC) Advanced Interactive (AIX) Operating System provides functional enhancements to the IBM RT Personal Computer AIX Operating System. Version 2.1 supports up to 16 concurrently logged-on users. SNA services supporting logical unit (LU) 1, 2, 3 or 6.2 over a synchronous data link control (SDLC) connection and LU 6.2 over a local area network (Ethernet (1)) has been added to the operating system. New device drivers for the IBM 3270 Distributed Function Terminal, the IBM RT PC Multiprotocol Adapter, and the IBM RT PC Small Computer System Interface Adapter are provided. Version 2.1 also includes national language support for national language character sets in the operating system. Enhancements to floating point functional support have been added. Support for programming is enhanced by additions to the Advanced Display Graphics Support Library, first delivered in Version 1.1, including Bit BLT (Block Level Transfer) Raster operations.

One-Time Charge: \$2,295

Planned Availability Date: March 1987

(1) Trademark of Xerox, Inc.

Internal Letter Section

MARKETING INFORMATION

AIX Operating System Version 1.1 continues to ship according to schedules announced in June, 1986. AIX Operating System Version 2.1 is offered as a new program and as a chargeable upgrade for AIX Version 1.1 licensees.

Current licensees of AIX Version 1.1 with SLSS subscriptions will continue to receive updates to publications as they are made available. AIX Version 1.1 licensees who choose to upgrade to AIX Version 2.1 should make separate SLSS subscriptions to ensure receipt of updated publications. SLSS will be used if maintenance updates to the publications are required.

MARKETING CHANNELS

- o NCMD
- o SWMD
- o NDD
 - IBM Authorized Valued Added Dealers
 - IBM Authorized Personal Computer Dealers

PRODUCT POSITIONING

The RT PC provides a full-function workstation for either standalone or host-connected operation. It fills the gap between the IBM Personal Computer AT and the IBM 43XX in price and performance, and satisfies the UNIX (2) System V (3) requirement which frequently characterizes the engineering/scientific field. As a IBM/host-connected, intelligent workstation, the RT PC provides support for customers currently using System/370-based applications for CAD/CAM.

The RT PC supports business and administrative applications

related to engineering/scientific and CAD/CAM use. These include, but are not limited to, technical publication preparation, project management, display graphics, spread sheet, and database management.

(2) Registered trademark of AT&T.

(3) The UNIX Operating System component of AIX was developed by IBM and INTERACTIVE Systems Corporation. The UNIX Operating System component is based on INTERACTIVE's IN/ix* which is derived from the UNIX System V, as licensed by AT&T.

* Registered trademark of INTERACTIVE Systems Corporation.

MARKETING STRATEGY

The primary objective is to establish the RT PC as a leading 32-bit super microcomputer for engineering/scientific and technical professionals. The strategy for achieving this goal requires integrating the RT PC into IBM and competitive host environments, providing solutions for standalone end users, and highlighting complementary native technical professional and related applications.

MARKETING ACTION REQUIRED

Marketing representatives should review the marketing support materials to correctly position this program for their customers.

MARKETING FOCUS

SALES COMPENSATION PLAN: Normal provisions apply.

MEASUREMENT VALUE: MV is available on HONE for all products by keying the command 'POINTS; or 'POINTS 5601' at the entry prompt arrow on the selection screen. MV is also available on AAS under the mnemonic QSLM.

MARKETING SUPPORT

CUSTOMER CENTERS: Marketing representatives will receive marketing support from designated Customer Centers. Support includes prospect identification, mailings, and facilities for engineering/scientific representatives' seminars, briefings, and in selected locations, product demonstrations. The IBM RT PC Campaign Guide (ZZ60-2817) will be available. Selected customer centers will provide prospect lists and leads tracking.

AREA ENGINEERING/SCIENTIFIC/INDUSTRIAL (E/S/I) SUPPORT: First-level market support for CAD/CAM, technical professional, and general engineering applications. Support includes briefings and account planning.

ENGINEERING/SCIENTIFIC MARKETING SUPPORT: The Engineering/Scientific Support Centers provide national support for CAD/CAM, technical professional, and general engineering applications. Support consists of second-level briefings and custom demonstrations, and may be scheduled through area E/S/I representatives.

NON-ENGINEERING/SCIENTIFIC MARKETING SUPPORT: The Boca Raton Marketing Center provides marketing support for significant non-E/S/I account situations nominated through NCMD and SWMD area offices. The support includes product briefings, selected demonstrations, and opportunity workshops. The center may be contacted at 443-1010 (IBM dial network) to arrange opportunity workshops, and at 443-5353 (IBM dial network) to arrange briefings and demonstrations.

The Dallas End User Systems Marketing Center provides marketing support for major commercial (non-E/S/I) opportunities nominated by NCMD and SWMD areas. Support includes product selection and marketing and competitive strategy guidance. The center may be contacted at 641-4676 (IBM dial network), or via PROFS (DALMC at DALVM41B), to obtain support guidance.

The Telecommunications Executive Briefing Center in Raleigh provides national generic marketing support for significant account situations involving data and voice communications. Support includes briefings and selected demonstrations on connectivity. Area representatives may schedule support by completing the nomination form on HONE.

The IX Marketing Center in Gaithersburg provides generic UNIX Operating System marketing support for NCMD account situations, particularly in the area of AIX interaction with IX/370. Support is

provided through area nomination.

Demonstration systems are available at area E/S/I units and customer centers.

EDUCATION SUPPORT

Education for UNIX Overview (75801), UNIX Fundamentals (75802), and "C" Language Programming (75803) is provided by Guided Learning Centers.

INSTALLATION INFORMATION

INSTALLATION SUPPORT

Installation and technical support will be provided by the National Technical Support - Intermediate and Workstation Systems Support and the Engineering Scientific Support Center.

FIELD SUPPORT: Systems engineers are provided installation and technical support through HONE/INFOSYS and HONE/EQUAL using the primary product name keyword: RTPC. Questions should be researched using HONE/INFOSYS, publications, and branch specialists before authoring EQUAL questions.

CUSTOMER SUPPORT: Eligible customers are provided installation and technical assistance thru ASKINFO. For customer eligibility and registration information, refer to the HONE/National Support Directory using the keywords: DIRECT CUSTOMER SUPPORT ELIGIBILITY.

ADMINISTRATIVE INFORMATION

QUANTITY DISCOUNT AGREEMENT/SPECIAL BID

This program is an eligible licensed program under the terms and conditions of the Quantity Discount Agreement (Form No. Z125-3412-01), and the Exhibit for IBM RT Personal Computer Licensed Programs (Exhibit No. RT3859-03) (Form No. Z125-3859-03) for commercial customers, or the Exhibit for RT Personal Computer Licensed Programs (Exhibit Number RT3860-02) (Z125-3860-02) for qualified education and hospital customers. Copies of the revised Exhibits are attached and must be used for all new QDAs, effective immediately. They may be reproduced locally until available from Mechanicsburg six weeks after announcement. (SEE HARD COPY VERSION OF IVORY LETTER AND OR HONE SALES MANUAL.)

QDA TRANSITION PLAN: The revised Exhibit applies automatically to customers with QDAs for the IBM RT Personal Computer Licensed Programs in effect. See the Notice to IBM Customers included with this announcement for transition details.

ADMINISTRATIVE ACTION REQUIRED

CUSTOMER NOTIFICATION - QDA: Within 10 days after announcement, the Notice to IBM Customers and the revised QDA Exhibits included with this announcement must be mailed or hand-delivered by the branch office to all customers with a QDA for IBM RT Personal Computer Licensed Programs in effect. (SEE HARD VERSION OF IVORY LETTER AND OR HONE SALES MANUAL.)

This customer notification must be documented with a locally initiated control listing, documenting the mailing dates, or, if hand-delivered, the date and name of the customer executive to whom the notice was delivered. File this control list locally for future reference to substantiate proof of customer notification.

If additional copies of the Notice to IBM Customers are required, reproduce locally.

ORDERING INFORMATION

Administrators must familiarize themselves with the information that follows and refer to it when ordering and installing these programs.

This program is licensed under the IBM Program License Agreement. The Agreement is shipped with the program. No further branch action is required.

Supplements are not to be prepared for these programs. The terms and conditions screen in the HONE Sales Manual will reflect this fact.

These programs are to be ordered through OCORDER or ORDER.

SHIPMENT: The programs will be shipped from IBM Software Distribution

and will receive a serial number assignment.

INSTALLATION: The IBM Program License Agreement does not provide for a testing period. Programs must be installed through SWSTART with a first day charge of the seventh day following the later of shipment date or schedule date. The IBM Program License Agreement does not require a designated machine, but the SWSTART transaction normally requires entry of a type serial in the designated machine field. Select the line, "For non-AAS inventory, does not require designated machine. No type/serial number entry required." The customer may move the program from machine to machine without notifying IBM, so further action (CHGSYS, SWXREF, Confirmation of Change in Designated Machine) will not be required.

SHIPPED AND UNINSTALLED CANCELLATIONS AND RETURNS: Shipped and uninstalled cancellations must be processed as usual for IBM Software Distribution-type and software distributed by IBM Software Distribution. An OMCANCEL and a CANCLINV transaction are required. Shipped and uninstalled/cancelled software must be returned, unopened, to Greencastle, Indiana. As long as SWSTART has not been processed, no REBAR is necessary.

ADDITIONAL FEATURES: The branch office must process orders to add additional software features to installed licensed programs via an MSORDER that specifies the program type and its assigned serial number. Additional software features to be installed on these programs are not eligible for a quantity discount.

QUANTITY DISCOUNT AGREEMENT: The QDA cannot be processed through CONAAD. Once the customer has signed the QDA, obtain a special contract number for the QDA by contacting the Contract Control Desk, Dept. T35, Asset Management, Rockville, MD, 301-294-4242 or 829-4242 (IBM dial network). Include the contract number on the QDA and mail it with the exhibit to the attention of the above personnel so that the AAS contract file can be updated. The QDA/Exhibit must be received in Asset Management within five workdays of receipt of the contract number. The mailing address is:

IBM Corporation
Contract Control Desk
Dept. T35
1451 Rockville Pike
Rockville, MD 20852

Ensure that the contract number is included on AAS at order entry or altered into an existing backlog.

Note: Those customers who order the AIX Operating System Version 2.1 are not required to order the separately available Virtual Resource Manager Version 2.1 licensed program, since its function is included as part of AIX Operating System Version 2.1.
PROGRAMMING RPQS

PRPQs will not be accepted.

ADDITIONAL INFORMATION

See the unclassified section of this announcement, which may be reproduced and distributed.

SPONSORING EXECUTIVES

North-Central Marketing Division
R. C. Timpson
Vice President, Marketing
South-West Marketing Division
T. R. Sprott, Jr.
Vice President, Marketing

Customer Letter Section

HIGHLIGHTS

The IBM RT PC AIX Operating System Version 2.1 provides:

- o Enhancements to Virtual Resource Manager
- o An increase in concurrent (logged-on) users to 16
- o SNA Services for LU1, 2, 3, and 6.2
- o 3270 AIX Device Driver support
- o IBM RT PC Multiprotocol Adapter Device Driver
- o IBM RT PC Small Computer System Interface Adapter Device Driver
- o National language support
 - Most IBM console displays
 - Selected WT ASCII terminals
 - IBM printers with national language support capability
- o Enhanced floating point support
- o Advanced Display Graphics Support Library enhancements, including bit raster operations
- o Existing functions of AIX Operating System Version 1.1

DESCRIPTION

IBM RT PC VIRTUAL RESOURCE MANAGER (VRM)

The Virtual Resource Manager function is included in the IBM RT PC AIX Operating System. If an alternative operating system is used, the Virtual Resource Manager function is available as a separate licensed program. For additional information, see IBM Programming Announcement 286-400, dated September 18, 1986. The IBM RT PC AIX Operating System is a multiuser, multitasking, virtual memory operating system.

The Virtual Resource Manager is programming that provides a virtual machine interface for the IBM RT PC 6150 and 6151. This interface allows an operating system such as the IBM RT PC AIX Operating System Version 2.1 to be isolated from the actual hardware characteristics of the system while being provided a level of support not inherent in the hardware itself. Logical disk support (minidisks) improves system management capability and allows IBM Personal Computer DOS and AIX-formatted files to exist on the same fixed disk. Multiple virtual terminal support allows execution of multiple tasks and switching between tasks from a console terminal. All tasks continue executing while one task has control of the keyboard and display. Each task may be written as if it had exclusive control of one or more displays.

AIX Version 2.1 device support includes support of the Advanced Floating Point-Accelerator. For further information, see IBM Product Announcement 186-172, dated September 18, 1986.

Enhancements to the Virtual Resource Manager licensed program include improved queue handling. Additionally, support for a larger number of fixed disk minidisk and fixed disk has been added. The Virtual Resource Manager Version 2.1 also supports continuous updating of multiple local displays allowing a user to simultaneously monitor the progress of multiple application programs.

SNA SERVICES

SNA Services is the system and application program interface designed for the RT PC and the AIX Operating System Version 2.1 that allows AIX end users and application programs to communicate with traditional 3270 applications and peer (LU 6.2) applications within an SNA network. These applications may reside on other IBM or non-IBM products that use the supported local area network (LAN) (Ethernet) or SDLC as the method for network data exchange. SNA Services program allows the user or application program to:

- o Connect to the following IBM host applications:
 - RJE (LU1)
 - 3270 (LU2,3)
 - CICS (LU6.2)
- o Connect to non-host (peer) products using advanced program-to-program communications (LU6.2) and low-entry networking (T2.1) on telecommunications or LAN connections
 - IBM Personal Computer, Personal Computer XT, and Personal Computer AT
 - IBM System/36

- IBM System/38
- IBM RT PC

SNA services provides the communications capability required to implement and support LAN and telecommunications connections.

- o LAN communication is supported through the logical link control programming in SNA services. The supported network is Ethernet.
- o Telecommunication is supported using the SDLC protocol.

SNA services provides documented Application Program Interfaces (API) for LU 1, 2, 3, and for LU 6.2 Advanced Program-to-Program Communications (APPC). The following applications are supported on the LU 1, 2, and 3 API:

- o Network 3270 - PLUS (SNA)
- o Network RJE - PLUS (SNA)

APPC (LU6.2) is between peer RT PC or other workstations within the SNA network or teleprocessing environment supporting the LU6.2 protocol. Refer to the IBM RT PC AIX Operating System Communications Guide for additional information on communications functions and requirements.

SNA services, through the user interface facility of AIX, allows users to create multiple SNA network profiles with unique characteristics and to maintain them for later use.

BINARY SYNCHRONOUS COMMUNICATIONS (BSC) ATTACHMENT: Support for BSC attachment is available from the IBM 3270-PLUS and RJE-PLUS. See IBM Programming Announcement 286-403, dated September 18, 1986, 3270 AIX DEVICE DRIVER

The 3270 AIX Device Driver provides the system and application program interface designed for the RT PC and the AIX Operating System Version 2.1 that allows end users and application programs to communicate with cooperating IBM 3270 or RJE host applications within a non-SNA network. In a non-SNA network, each RT PC is connected to an IBM host via a BSC attachment through an IBM 37X5 Communications Controller or via a DFT (Distributed Function Terminal) attachment to either an IBM 3174 or IBM 3274 Control Unit (which is connected to an IBM host through a BSC or non-SNA channel), or an Integrated Workstation Adapter in a IBM 4361 Processor.

The 3270 AIX Device Driver provides the system and application program interfaces to BSC and DFT Virtual Resource Manager program component.

The BSC version of the 3270-PLUS Terminal Emulator may be used with the IBM Personal Computer 3278/79 Adapter (#5050) (for DFT attachment), or the IBM RT PC Multiprotocol Adapter (for BSC attachment).

DFT ATTACHMENT: With a single DFT attachment, five host sessions are supported on one coax connection to an IBM 3174 or IBM 3274. The 3270-PLUS terminal emulator supports the use of a single 3278/79 adapter.

MULTIPROTOCOL ADAPTER DEVICE DRIVER

The IBM RT PC Multiprotocol Device Driver manages and controls the communication activities and functions of the Multiprotocol Adapter. The device driver services hardware interrupts from the adapter(s), sends data to the appropriate adapter, and notifies the end user communication program when data is received or link conditions change. It is needed for communications applications that use SNA services (SDLC), including 3270-PLUS or RJE-PLUS. The Multiprotocol Adapter Device Driver is also used with the BSC versions of 3270-PLUS and RJE-PLUS. The IBM RT PC Multiprotocol Adapter, when using the IBM RT PC Multiprotocol Adapter Device Driver:

- o Supports transmissions of BSC and SDLC protocols
- o Supports X.21 call establishment/clearing protocol
- o Supports the connection of switched or leased lines using a RS232C or X.21 attachment
- o Supports concurrent operation of two IBM RT PC Multiprotocol Adapters

- o Permits operation of two synchronous (BSC or SDLC) RS232C ports, or one RS232C and one X.21 combination
- o Supports a data rate of up to 64Kb on a synchronous port using half-duplex operation
- o Logs error conditions reported by the adapter and performs the associated error recovery procedures.
- o Supports auto call/answer attachment on switched lines.

SMALL COMPUTER SYSTEM INTERFACE ADAPTER DEVICE DRIVER

The Small Computer System Interface Adapter Device Driver provides support for up to 14 IBM 9332 direct access storage devices attached to the IBM RT PC 6150 or 6151 by two IBM Small Computer System Interface Adapters (#7000). See IBM Product Announcement 186-174, dated September 18, 1986.

AIX FLOATING POINT (FPA) ENHANCEMENTS

The AIX Operating System Version 2.1 includes enhancements to existing floating point transcendental routines to automatically take

advantage of Advanced Floating Point Accelerator. The enhancements include use of the Berkeley Transcendental Libraries. See IBM Product Announcement 186-172, dated September 18, 1986.

NATIONAL LANGUAGE SUPPORT

The AIX Operating System Version 2.1 provides support for 8-bit ASCII and C-Shell modifications. It provides national language character set support for most IBM console displays, certain World Trade ASCII terminals, and IBM printers with national language capability.

CONSOLE DISPLAY SUPPORT:

- o The IBM 5151 Personal Computer Display and the IBM 5154 Personal Computer Enhanced Color Display are limited to the PC-ASCII character set (code page 437). Attempts to display characters outside of this set will not result in the appropriate graphics being displayed.
- o The IBM 6153 Advanced Monochrome Graphics Display, the IBM 6154 Advanced Color Graphics Display, and the IBM 6155 Extended Monochrome Graphics Display support graphics from all RT PC code Pages.

ASCII TERMINALS: National language models of ASCII terminals as implemented by the DEC (2) VT220 terminals are supported.

(2) Trademark of Digital Equipment Corporation.

PRINTERS:

- o The IBM 5152 Graphics Printer and the IBM 5182 Color Printer are limited to the PC-ASCII character set. Attempts to print characters outside of this set will cause the printing of a substitute character (underscore).
- o The IBM 4201 Proprinter, IBM 5201 Quietwriter Printer, and the IBM 3812 Pageprinter support printing of all required characters from the RT PC code pages.

In the AIX Operating System Version 2.1, the base code page has been changed from the PC-ASCII code page 437 to the multilingual code page 850 to ease the portability of applications. Those code page 437 characters not supported in code page 850 are now contained in the third RT PC code page and are still accessible to appropriately written applications. Most files created under the AIX Operating System (Initial) or Version 1.1 used 7-bit ASCII character sets and remain unaffected by this change. Applications written to support national language characters introduced in AIX Version 1.1 remain unaffected. The only files or application programs affected by this change are those containing or using the combination single and double line drawing characters, Greek characters, and mathematical symbols contained in the right half of code page 437, which are not present in code page 850.

Coprocessor applications using these characters will continue to run unchanged on the IBM 5151 or 5154 Displays. When using the IBM 6153, 6154, or 6155 Display with the coprocessor, different

characters may be displayed. See the Limitations section of this announcement for additional information.

IBM RT PC AIX OPERATING SYSTEM VERSION 1

In January 1986, IBM made the initial announcement of the IBM RT PC hardware, operating system, and application licensed programs followed by a second announcement in June 1986 of enhancements and additions. For additional information please contact your local IBM representative. Following are brief descriptions of the content of the two AIX announcements.

The IBM RT PC AIX Operating System is a multiuser, multitasking, virtual memory operating system.

The AIX Operating System contains a number of functions for display and console support. Character mode provides a device-independent interface, while monitored mode provides direct access to the display. A pointing device (mouse) and sound are supported. Window-management routines allow a user to open multiple full-screen windows and hot key among them. Additional enhancements support color functions and extended graphics.

The AIX Operating System, in conjunction with specialized hardware, provides virtual memory support. Programs and user data-file segments may be "mapped" into memory segments, allowing the file data to be accessed as memory.

The AIX shell, designed as a familiar interface for experienced UNIX (3) Operating System users, is a command interpreter that serves as an interface between the user and the operating system. The DOS shell provides a personal computer DOS-like user interface to the AIX Operating System, as well as access to DOS and AIX files.

(3) Registered trademark of AT&T.

The installation of the AIX Operating System is accomplished through a menu-driven user interface to assist the user in allocating disk space and setting other system parameters at installation time. Devices, adapters, and minidisks may be added by using AIX commands that prompt the user for required input. Also included in the AIX Operating System are facilities for a uniform method of installing other IBM RT PC systems and application programs.

The AIX Operating System contains a software emulation of the floating-point functions (ANSI/IEEE Std 754-1985). The optional IBM RT PC Floating-Point Accelerator may be installed to potentially improve the performance of programs that use floating-point routines. Programs may be compiled to use the IBM RT PC Floating-Point Accelerator if available at execution time, or if it is not available, to use software emulation. In addition, the C and FORTRAN compilers may be used to generate code which only functions with the Floating-Point Accelerator.

Printers are supported via an extended IBM PC ASCII print datastream. In addition, pass-through mode may be used by those applications that require the ability to use the unique features of a specified printer.

The AIX Operating System includes several features designed to support program development on the IBM RT PC. For example, new device drivers may be written in the C language and integrated into the VRM to support new hardware. Programming interfaces have been provided to install and configure application programs and new devices in a uniform manner. An assembler and a C compiler are shipped with the AIX Operating System.

Within the AIX Operating System, there are numerous problem determination aids, including automatic logging of hardware errors, error analysis functions, and a trace facility.

The AIX Operating System includes the following subsystems that may be optionally installed after the VRM and base AIX system components have been installed and configured:

- o Usability services
- o Exploring usability services

- o Extended services
 - o INed (4) Editor
 - o Asynchronous terminal emulation
 - o Multiuser services
 - o Base PC Network services
- (4) Registered trademark of INTERACTIVE Systems Corporation.

THE IBM RT PC AIX OPERATING SYSTEM VERSION 1.1

The IBM RT PC AIX Operating System Version 1.1 provided program enhancements and additions to Version 1 of the AIX Operating System.

SHARED LIBRARIES: The shared library capability allows users to specify that certain routines be shared among several executing programs. Routines to be shared are stored in special libraries, designated as "shared" libraries. Programs that share these executable routines do not link to the text of the routines until runtime, and share a single, in-memory copy of these routines with other executing programs.

The use of shared library routines may eliminate the need for redundant copies of common routines in memory during execution and redundant copies on disk with the storage of object programs.

ADVANCED DISPLAY GRAPHICS SUPPORT LIBRARY: The Advanced Display Graphics Support Library provides a program interface for graphics applications to the IBM 6153 Advanced Monochrome Graphics Display, the IBM 6154 Advanced Color Display, and the IBM 6155 Extended Monochrome Graphics Display. This interface includes a set of graphics primitives designed to provide access to the display hardware with a minimum of system overhead. The graphics primitives can be called by programs written in IBM RT PC FORTRAN 77, IBM RT PC Pascal, and the C compiler provided with the AIX Operating System. A

facility is provided for hard copy output from the same interface. **GRAPHICS DEVICE DRIVERS:** Version 1.1 of the AIX Operating System includes a set of device drivers for several of the graphics displays, printers, and plotters that were announced by IBM for the IBM RT PC. These device drivers are equivalent to the drivers announced with the IBM RT PC Graphics Development Toolkit (see IBM Programming Announcement 286-011, dated January 21, 1986). Object programs that require these device drivers at runtime can now execute under the AIX Operating System without the requirement to have the IBM RT PC Graphics Development Toolkit installed.

ENHANCEMENTS TO THE C COMPILER: The AIX Operating System Version 1.1 included the addition of a global optimizer to the C compiler. The global optimizer is designed to improve the performance of C programs that are compiled under Version 1.1 of the C compiler. Version 1.1 of the C compiler also provided the addition of single-precision, floating-point operations and shared library support.

USABILITY SERVICES ENHANCEMENTS: A function has been added to the Usability Services portion of the AIX Operating System to provide an improved interface for users to customize the TOOLS window. This function is part of the TOOLS application, and allows the addition, modification, and deletion of Tools groups or commands. Also, Usability Services added support for the IBM 5083 Tablet (Models 11 and 12) as an optional pointing device.

TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL (TCP/IP)

Major functions include:

- o Simple mail transfer protocol to send outgoing mail to other hosts
- o File transfer protocol to send, retrieve, delete, or rename files sent between the user and server or between two hosts
- o Telnet protocol to allow remote log-in to another host
- o Network services commands to support network definitions, maintenance, and problem determination
- o Trivial file transfer protocol to read and write files (or mail) to and from a remote server

OTHER FUNCTIONAL ENHANCEMENTS: System installation functions were enhanced to facilitate reinstallation of the AIX Operating System. Files added by other programs could be preserved, backup of user-modified system files was provided, and customization information saved when customized files are updated.

System shutdown was modified to allow shutdown to single user mode for maintenance, and warning messages are sent to all users, with a time delay to allow for logging off.

Additional configuration aids included extensions to the "display" command to control colors and fonts on locally attached displays, and new "ulimit" options to control text and data sizes of programs.

PERFORMANCE ENHANCEMENTS: Several enhancements designed to improve performance were in the AIX Operating System Version 1.1 including:

- o Kernel buffer options to allow automatic sizing based upon system memory size, and to allow unpinning of the kernel buffers
- o File name and directory caching in memory for faster access to data
- o Modifications to semaphore operations, and mapped file operations.

PUBLICATIONS

The following publications are shipped with the program.

Additional copies are planned to be available in March 1987:

- o IBM RT PC Installing and Customizing the AIX Operating System Version 2.1
- o IBM RT PC Usability Services Reference Version 2.1
- o IBM RT PC Using and Managing the AIX Operating System Version 2.1
- o IBM RT PC AIX Operating System Commands Reference Version 2.1
- o IBM RT PC INed (5) Version 2.1
- o IBM RT PC Messages Reference Version 2.1
- o IBM RT PC AIX Operating System Communications Guide Version 2.1.

(5) Registered trademark of INTERACTIVE Systems Corporation.

The following separately orderable publications which document functions in the AIX Operating System, are planned to be available in March 1987. To order, contact your IBM representative.

- o The IBM RT PC SNA Access Method Guide and Reference
 - This manual describes how to install, configure, and set up SNA communications on the RT PC. It contains programmer reference information for use in writing applications that use SNA.
- o IBM RT PC Virtual Resource Manager Technical Reference Version 2.1
 - This manual is intended for individuals involved in writing programs at the operating system level that require an interface to the Virtual Resource Manager (VRM). It defines the VRM routines, explains the use of the VRM debugger, explains how to develop and install code into the VRM, and defines the virtual machine interface to the VRM-supplied device drivers.
- o IBM RT PC AIX Operating System DOS Services Reference Version 2.1
 - This manual provides reference information about the IBM RT PC AIX Operating System DOS commands and describes DOS services file and directory specifications, search paths, devices, ed (the line editor), standard input and output, and commands. It also includes information on customizing AIX DOS defaults, explains differences between the DOS and AIX DOS, and provides technical information for experienced programmers.
- o IBM RT PC Using AIX Operating System DOS Services Version 2.1
 - This manual is a step-by-step guide that provides general information to assist in getting started on the DOS services and performing some common tasks. It includes general information on using diskettes and fixed disks, using DOS services function and command-line editing keys, naming, organizing and locating files, entering and leaving IBM RT PC, starting and stopping the DOS services, and issuing some frequently used DOS services commands.

This manual is included in the AIX Operating System DOS Services Reference Version 2.1.

- o IBM RT PC Assembler Language Reference Version 2.1
This manual discusses the IBM RT PC 032 Microprocessor and its Assembler language. It describes the syntax and semantics, instructions to the processor (machine instructions), and instructions to the assembler (pseudo-operations). How to link and run Assembler language programs, including linking to programs written in C language.
- o IBM RT PC C Language Guide and Reference Version 2.1
This manual contains a guide to writing, compiling, running, and debugging C language programs. A reference section describes C language data structures, operators, expressions, and statements.
- o IBM RT PC AIX Operating System Technical Reference Version 2.1
In this manual, the system calls and subroutines that a C programmer uses to write programs that interface with the operating system are described.
- o IBM RT PC AIX Operating System Programming Tools and Interfaces Version 2.1
This manual provides a general look at programming on the IBM RT PC. It gives details about using the AIX Operating System tools to develop, compile, and debug C language programs. Also included are examples of how to use system calls and library subroutines to create programs. In particular, the usage of program interfaces for IBM-added functions is described.
- o IBM RT PC AIX Operating System Text Formatting Guide Version 2.1
The Text Formatting Guide describes the functions and capabilities of the nroff and troff text formatters and of other associated text processing programs.
- o IBM RT PC Base PC Network Services Version 2.1
This manual provides basic support for the IBM PC Network Local Area Network. It documents the interface for customer-supplied applications to use the facilities of the PC Network.
- o IBM RT PC Interface Program for use with TCP/IP Version 2.1
In this manual, the commands and protocols provided by TCP/IP support in AIX are discussed. The interface for customer-supplied applications to use the facilities of TCP/IP are documented.
- o IBM RT PC Keyboard Description and Character Reference Version 2.1
This manual shows the 101, 102, and 106-key keyboard layouts, tables of the keys, and detailed keyboard drawings for 14 national languages. It also provides details of the supported code pages, with detailed charts of the characters provided in each code page, describes code page switching used in the RT PC, and describes the nonspacing characters supported by the RT PC with lists of the supported nonspacing characters.

EDUCATION SUPPORT

The Dallas Technical Education Center is offering AIX Installation and Implementation (Q1001; four days; July - December 1986). To enroll call IBM Direct-Education, toll free, at 800-426-2468.

SCHEDULE Planned availability is March 1987.

TECHNICAL INFORMATION

SPECIFIED OPERATING ENVIRONMENT

HARDWARE REQUIREMENTS: The minimum machine requirement is an IBM RT PC with a display (for example, the IBM 6155 Extended Monochrome Graphics Display, the IBM 6154 Advanced Color Graphics Display, the IBM 6153 Advanced Monochrome Graphics Display, the IBM 5151 Personal Computer Display, or equivalent). The IBM PC Network Adapter is required by the Base PC Network Services program portion of the AIX

Operating System. The IBM RT PC Baseband Adapter, or equivalent, is required to use the TCP/IP facilities of AIX. SNA Services requires either the IBM RT PC Baseband Adapter or equivalent, or the IBM RT PC Multiprotocol Adapter.

Optionally, an asynchronous modem may be installed for use with Asynchronous Terminal Emulation, UUCP, or the Connect (6) command. Program support is provided for asynchronous modems such as the IBM 5841 1200 BPS Modem, or equivalent that supports EIA RS-232C Standard (dated August 1969) or the CCITT Recommendations V.24/V.28 as published in the report of the CCITT 7th Plenary Assembly (Yellow Book), Geneva, November 10-21, 1980. Program support is also provided for auto-dialer modems, such as the IBM 5841, that conform to the "AT" command set using asynchronous protocol.

(6) Trademark of INTERACTIVE Systems Corporation.

- o Advanced Floating-Point Adapter: The Advanced Floating Point-Adapter requires AIX Version 2.1.
- o IBM Multiprotocol Adapter: Use of the IBM RT PC Multiprotocol Adapter for SDLC connections requires AIX Version 2.1.

Use of the IBM RT PC Multiprotocol Adapter for BSC connections requires AIX Version 2.1. In both cases involving connections with the Multiprotocol Adapter, the attached IBM 37X5 Communication Controller must be configured appropriately.

- o 3270 AIX Device Driver: Use of the 3278/79 Emulation Adapter for 3270 DFT attachment requires AIX Version 2.1. Additionally, the attached IBM 3174 or 3274 must be appropriately configured.

SOFTWARE REQUIREMENTS: There are no software prerequisites for the AIX Operating System.

The following charts depict the required version of the AIX Operating System for existing system, language, and application programs:

PLANNING INFORMATION

CUSTOMER RESPONSIBILITIES: The customer is responsible for the installation and use of this licensed program. Those customers who order the AIX Operating System are not required to order the separately available Virtual Resource Manager licensed program, since the Virtual Resource Manager function is included as part of the AIX Operating System.

To use shared libraries or the enhancements to the C compiler, including floating point enhancements and the global compiler optimizer, user programs must be recompiled with AIX Operating System Version 2.1.

PACKAGING: AIX Operating System Version 2.1 is shipped on 24 diskettes. Seven manuals and the IBM Program License Agreement are included.

SECURITY, AUDITABILITY, AND CONTROL

The TCP/IP support does not encrypt or decrypt user data transmitted across the network. The design of the IBM RT PC Baseband Adapter and associated VRM Device Drivers allow an application program to access only those packets addressed to that RT node. A user should assess the security of the network and the exposure of information assets as a result of using some of the features of TCP/IP and similar network communication protocols.

When users are added to the system, they are assigned a user ID and assigned to a group. They may also be assigned a password, which is required at sign-on time. Each group is allowed access to files based on the authorization granted by the file owner.

A file may be accessed by its owner and by groups (of users). A group may be allowed full access, or the access may be limited based on the file owner's authorization.

User management is responsible for evaluation, selection, and implementation of security features, for administrative procedures, and for appropriate controls in application systems. If sensitive data is sent over external communication facilities, user management may wish to pursue the application of cryptography.

ORDERING INFORMATION

Orders for any quantity can be taken by NCMD/SWMD marketing representatives.

Note: Those customers who order the AIX Operating System Version 2.1 are not required to order the separately available Virtual Resource Manager Version 2.1 licensed program, since its function is included as part of AIX Operating System Version 2.1.

Additional ordering information will be provided at availability.

TERMS, CONDITIONS, AND CHARGES

TERMS AND CONDITIONS

LICENSING: This program is licensed under the terms and conditions of the IBM Program License Agreement. A copy of the agreement is included in the program package.

LIMITED WARRANTY: Warranted Program: Yes. Media: 90 days.

PROGRAM SERVICES: Central Service, including the IBM Support Center, will be available until February 1, 1989. The statement of service included in the program package describes this service.

QUANTITY DISCOUNT AGREEMENT (QDA): This program is an eligible licensed program under the terms and conditions of the Quantity Discount Agreement (Z125-3412-01), and either the IBM RT Personal Computer Licensed Programs Exhibit (RT3859-03) for commercial customers or the IBM RT Personal Computer Licensed Programs Exhibit (RT3860-02) for qualified education and hospital customers. The applicable category is specified in the Charges section of this announcement. For further information regarding volume orders, contact your IBM marketing representative.

Upgrades are not eligible for quantity discounts.

EDUCATIONAL ALLOWANCE: A 15% educational allowance toward eligible license charges is available to qualifying institutions in accordance with the Educational Allowance Amendment. The educational allowance is not additive to any other discount or allowance.

Upgrades are not eligible for the educational allowance.

CHARGES

ONE-TIME CHARGE:

Description/ Source	Single Unit	Program	One-Time	QDA
	One-Time Charge	Type/ Model	Charge Feature Number	
IBM RT PC AIX Version 2.1	\$2,295	5601-061	4511	A

UPGRADE CHARGE:

Description/ Source	Upgrade Charge	Program	One-Time
		Type/ Model	Charge Feature Number
IBM RT PC AIX Version 2.1	\$395	5601-061	4512

Notice to IBM Customers
September 18, 1986

QUANTITY DISCOUNT AGREEMENT EXHIBIT FOR THE IBM RT PERSONAL COMPUTER LICENSED PROGRAMS REVISED

Today, IBM announces the following changes to the Quantity Discount Agreement (QDA) Exhibit, effective immediately. New versions of existing programs have been added to the QDA. In addition, the discount schedule for programs in Category A has been improved.

The following summarizes the changes made in the QDA Exhibits

for RT PC Licensed Programs for Commercial Customers (RT3859-03) and for Qualified Educational Institutions/Hospitals (RT3860-02), effective September 18, 1986.

If a customer qualifies for a higher discount based on the quantity of eligible licensed programs already committed in Category

A, the higher discount percentage will apply only to those programs shipped on or after the date of this Notice.

The following programs have been added:

- o IBM RT PC Advanced Interactive Executive Operating System Version 2.1 (5601-061)
- o IBM RT PC Virtual Resource Manager Version 2.1 (5601-062)
- o IBM RT PC SQL/RT Data Base Version 2.1 (5601-064)
- o Network 3270-PLUS (SNA) (5601-044)
- o Network 3270-PLUS (BSC) (5601-045)
- o Network RJE-PLUS (SNA) (5601-043)
- o Network RJE-PLUS (BSC) (5601-042)
- o IBM RT PC VS Pascal Compiler Version 1 (5601-038)
- o IBM RT PC Personal Computer Workstation Host Interface Program 5601-039

The attached QDA Exhibit for the IBM RT Personal Computer Licensed Programs (RT3859-03 or RT3860-02) automatically supersedes your present QDA Exhibit.

Program upgrades are not eligible for quantity discounts.

If you have any questions regarding this notification, please contact your IBM marketing representative.