DOS Standard
Operating Environment

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DOS STANDARD OPERATING ENVIRONMENT

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1. GENERAL

1.1 Purpose and Objective

This Bellcore Practice (BR 007-203-106) describes the personal computer oriented Bellcore DOS Standard Operating Environment (SOE). The environment functions as an interface between the users of Bellcore Centrally Developed Systems (CDSs) (who are generally the Regions/BOCs/IDCs) and the designers of the systems. The existence of a standard interface lowers the costs of designing, installing, and maintaining centrally developed systems.

1.2 Reason for Reissue

Whenever this Bellcore Practice is reissued, the reasons will be stated in this paragraph.

1.3 Applicability

This practice is issued as a standard. It applies to Bellcore Centrally Developed Systems when the systems are designed to use the DOS Personal Computer Operating System.

The specifications within the DOS SOE are subject to frequent change. Release levels of existing software may be upgraded by the Information Systems Rules Panel (ISRP) as the software vendors make enhancements. On occasion, new software products may be added or existing products replaced. This continuing evolution of SOE specifications makes the identification of software levels and effective dates impractical in this practice. Only software products and hardware categories are included in this practice, and all other associated information is contained in the mechanized system called the SOE database.

The information in the SOE database includes:

  a. description of the software products and hardware categories

  b. currently supported software release levels

  c. planning information for future products or product level upgrades

  d. history of superseded or replaced products

  e. brief summaries of DOS microcomputer compatibility testing

  f. DOS CDS Design Guidelines

Access instructions for the SOE database system are provided in section 5.

2. SOFTWARE ENVIRONMENT

In the DOS personal computer (PC) environment, many software products from different vendors are available with varying version or release level support. Because the PC is primarily a stand-alone, single-user workstation, commercially available PC software is normally distributed and updated on a per unit basis rather than through centralized data centers as in the mainframe environment. Therefore, the decision to upgrade is usually driven by the end user, thus creating an environment where different release levels of the same software product may exist. In this environment, communication is necessary between each CDS organization and its user contacts to determine which software release level(s) must be supported for each CDS application. In some cases, it may be necessary to identify a specific release level if release dependent functions are needed by a CDS application. Some of the software products specified

below may be provided by Bellcore as a part of a CDS, thus removing the need for separate product level coordination.

Further information regarding planning, CDS dependencies, and product upgrade requirements for PC software products is available in the SOE database.

The software portion of the DOS SOE includes:

a. OPERATING SYSTEM: MS®[1] -DOS, PC-DOS

The MS-DOS operating system was introduced by Microsoft Corporation. A number of microcomputer vendors have been licensed by Microsoft to provide MS-DOS with their microcomputers. The PC-DOS operating system is the IBM®[2] version of MS-DOS; it contains modifications made by IBM and portions which are specific to IBM microcomputers. The MS-DOS operating system is frequently referred to as just "DOS." Note that the DOS release level numbering scheme may be different between IBM and other MS-DOS compatible vendors. The vendor should be contacted for clarification in cases where it is not clear which MS-DOS release level is supported.

b. GRAPHICS:

1. Menu Driven - Lotus 1-2-3®[3]

2. Command Driven - Graftalk™ [4]

3. Subroutine Driven - Halo™ [5]

If a user requires graphics output not satisfied by one of the above packages, the CDS will supply the data in a format compatible with a user supplied graphics package.

c. DATABASE MANAGER SOFTWARE:

1. Menu/Command Driven:

    − dBASE III®[6]

    − PC/FOCUS®[7]

Where CDS developers need menu or command driven interfaces, dBASE III software should be used whenever possible. In cases where performance and functionality requirements are not met by dBASE III, CDS's may use PC/FOCUS software.

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1. MS is a registered trademark of Microsoft Corp.

2. IBM is a registered trademark of International Business Machines, Corp.

3. Lotus 1-2-3 is a registered trademark of Lotus Development Corp.

4. Graftalk is a trademark of Software Solutions

5. Halo is a trademark of Media Cybernetics, Inc.

6. dBASE III is a registered trademark of Ashton-Tate

7. PC/FOCUS is a registered trademark of Information Builders, Inc.

d. SPREADSHEETS:

    1. Lotus 1-2-3®

e. PROGRAMMING LANGUAGES:

The following programming language information is included here for use by Bellcore CDS developers.

    1. C:

        – CI86™ [8]

        – Microsoft C

    2. Fortran:

        – RM/Fortran™ [9]

    3. Pascal:

        – Turbo Pascal™ [10]

        – Microsoft Pascal

3. HARDWARE ENVIRONMENT

The major goal of hardware support under the DOS SOE is to provide maximum processor and configuration selection flexibility to the user. Because of the varying levels of compatibility between microcomputers, multiple vendor support can only be accomplished by creating hardware independent applications. This is accomplished through individual CDS compliance with a set of DOS CDS Design Guidelines. The guidelines (summarized in the SOE database) identify the areas of hardware where there are differences between vendor microcomputers and recommend development methods that avoid these areas thus producing a generic application.

Processor Support : Processor support is defined in two categories:

a. Generic Set of Processors - The IBM PC/XT™ [11] , IBM Personal Computer AT®[12] , and other DOS based microcomputers that meet the specifications set forth by the DOS SOE for microcomputer compatibility to the IBM PC. This compatibility specification identifies the areas that must be satisfied in order for a microcomputer to be IBM PC compatible for purposes of the DOS SOE. As the industry "de facto" standard for microcomputers evolves, this compatibility specification will be updated accordingly.

Bellcore CDSs will run on the IBM PC/XT and the IBM Personal Computer AT except in situations where special performance or capacity requirements limit the application to the IBM Personal Computer AT.

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8. CI86 is a trademark of Computer Innovations, Inc.

9. RM/Fortran is a trademark of Ryan/McFarland

10. Turbo Pascal is a trademark of Borland International

11. PC/XT is a trademark of IBM Corp.

12. Personal Computer AT is a registered trademark of IBM Corp.

b. 3270 Personal Computer (PC) Workstation - The 3270 PC workstation is included in the DOS SOE to support CDS applications with the following requirements:

1. Access to both a PC and one or more host computers

2. Concurrent windowing of PC and host computer sessions

3. Use of the 3270 PC High Level Language Application Program Interface (HLLAPI)

In the DOS SOE, a 3270 PC workstation is defined to be either:

1. An IBM or compatible personal computer with an adaptor board providing support for windowing of PC and host computer sessions, multiple host computers, and the 3270 PC HLLAPI.

2. A special function PC based workstation that combines the functionality of a PC with a windowing 3278/79 display terminal that supports multiple host computers, windowing of PC and host computer sessions, and the 3270 PC HLLAPI.

Both of the above 3270 PC hardware configurations must support a set of requirements for both the hardware and Control Program (see the SOE database for the latest technical memorandum number identifying these 3270 PC requirements). The 3270 PC HLLAPI supported by the above workstations must meet the Bellcore standard for 3270 PC HLLAPI (see the SOE database for the latest technical memorandum number identifying this Bellcore standard). The SOE database also identifies support issues that should be considered before selecting the 3270 PC workstation for a CDS application.

Since each Bellcore CDS may have different Regional user requirements for processor support, it is the responsibility of each CDS to establish actual microcomputer support with its customers. To assist both the CDS and the Regions/BOCs/IDCs in the support decision of non-IBM microcomputers, the SOE support organization, the Computer Technology Support Division, will analyze individual machines upon request to determine the level of compatibility to the IBM PC family and the DOS CDS Design Guidelines. A request may originate from either a Bellcore CDS organization or from a Region/BOC/IDC. In order for the study results to be made available outside of Bellcore, a formal request from a Region/BOC/IDC must be made. This request should be in the form of a letter from the Chairperson of the ISRP to the Division Manager of the Computer Technology Support Division. A summary of the resulting reports will placed in the SOE database.

4. DATA COMMUNICATIONS ENVIRONMENT

For information pertaining to the data communications environment, including the protocols allowed for interfacing systems, personal computers, and terminals, see Bellcore practice BR 007-400-100, Standard Operating Environment - Data Communications.

5. ACCESS INSTRUCTIONS FOR THE SOE DATABASE SYSTEM

In order to access the DOS SOE Database, a touch tone telephone and an asynchronous terminal must be used. The terminal should have upper/lower case capability, be able to communicate at 300 or 1200 BAUD and support full duplex operation. The dialing procedure is as follows:

Call (201) 562-0308 or (201) 562-0368

The SOE Database (SOE/DB) signals the connection of the terminal by printing:

pya.d Port Selector
ENTER CLASS

Enter "pyuxv" and hit the return key. The system will respond by printing GO and some random characters. Hit the return key again. (It may be necessary to hit the return key several times). The following message will appear:

pyuxv
login:

The user should respond to the login request by typing "soe" followed by a carriage return.

The system then makes a series of requests for information from the users, in addition to printing out descriptions/explanations for these requests and other pertinent system information. The requests and valid responses (each response to be followed by a carriage return) are as follows:

a. "Please enter your name": - Enter your full name (e.g., "John Doe")

b. "Enter company name": - Enter the name of your company (e.g., "South Central Bell")

c. "Does your terminal support tabs? (y/n)" - If your terminal does support tabs, enter "y"; else enter "n"

d. "Which area?" - Prior to this request, the system will print out a list of valid SOE areas. Enter one of these areas.

e. "Do you want instructions on using SOE/DB? (y/n)" - Enter "y" if you want to see instructions, otherwise enter "n". (Entering "y" has the same effect as the "help" command, which is described below. Even if you choose to enter "n", you may invoke the "help" command at a later point in your SOE/DB session.)

f. "Would you like to see a list of SOE products? (y/n)" - Enter "y" if you want to see this list, otherwise enter "n". (Entering "y" has the same effect as the "products" command, which is described below. Even if you choose to enter "n", you may invoke the "products" command at a later point in your SOE/DB session.)

At this point, the system types a "$" on your terminal. The "$" is the system prompt character. The procedures described below may be followed whenever the system prompts you with a "$". After the system finishes executing a command, it again prompts with the "$", so the user may enter multiple procedures (or commands), in sequence, in a single terminal session.

A list of commands that are valid for the SOE/DB is available. After the system prints a "$", type "help" followed by a carriage return. (Some of these commands are described below).

A copy of the current DOS SOE practice may be obtained by entering "soe for dos" followed by a carriage return, after the system prompts with a "$".

The SOE/DB contains information for each component of this SOE and results from individual processor compatibility testing. This information is found in the SOE/DB under "products." After the system prints a "$", the information may be accessed by typing "info for [product name]" and a carriage return.

a. For example, the information for the current spreadsheet component may be obtained by typing "info for lotus123".

b. If information for an incorrect product-name is requested, the system will indicate what responses are acceptable and then prompt for the correct response.

c. A list of valid products may be accessed by typing "products" and a carriage return.

Throughout the terminal session, certain keys may be used for special functions.

a. The "#" character erases the last character typed. Successive depressions of the "#" key will successively erase the last character typed, back to the start of the current line.

b. The "@" character erases the current line completely.

c. Depression of the "INTRPT" or "BREAK" key during the execution of a command terminates the execution of that command.

The user may terminate the session at any time by depressing the "control" and "d" keys together (the "EOT" character) and then hanging up, or by typing "logoff" (followed by a carriage return) after the system has printed a "$", and then hanging up.