



Systems Reference Library

IBM 1410/7010 Operating System

Utility Programs: Preliminary Specifications

This publication provides the preliminary specifications that are needed to plan for the use of the 1410/7010 Operating System Utility Programs. It includes a description of the functions performed by the programs and the general requirements for their use. The programs enable the user to obtain printed listings of core storage, magnetic tape storage, and IBM 1301 Disk Storage.



This publication is a major revision of Form C28-0325 and supersedes that publication.

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UTILITY PROGRAMS: PRELIMINARY SPECIFICATIONS

INTRODUCTION

Purpose of the Publication

This publication provides 1410 and 7010 installations with preliminary specifications needed to plan the use of the 1410/7010 Operating System Utility Programs. Included are descriptions of the functions to be performed by the programs and the general requirements for their use.

Purpose of the Utility Programs

A printed listing of all or part of core storage, magnetic tape, or IBM 1301 Disk Storage is usually necessary for testing a program. The utility programs make these listings available to the user.

Prerequisites

It is assumed that the reader is familiar with the following publications:

IBM 1410/7010 Operating System; Basic Concepts, Form C28-0318.

IBM 1410/7010 Operating System; System

Monitor: Preliminary Specifications, Form
C28-0319.

UTILITY PROGRAMS

Although the utility programs are designed to be used primarily for testing, they may also be used for printing the contents of storage devices in the normal use of production programs. The execution of the utility programs is the same whether the program is in test mode or not (see "End-of-Program Procedures" in the System Monitor publication), but utilities within the job cannot be called in following Unusual End of Program except in test mode. The utility programs record the contents of the storage device on the Standard Print Unit for either on-line or off-line printing. They must always be used under control of the System Monitor, and they will operate in Priority Alert mode to permit TELE-PROCESSING® interrupts.

The following utility programs are available:

Snapshot

Storage Print

Tape Print

1301 Disk Print

Monitor control cards will always stop execution of utilities and return control to Monitor.

Snapshot and print programs are printed in machine language in lines of 100 characters. A scheme of abbreviation using two characters for nonprintable characters, with or without word marks, requires two lines of print for each line of information. Every character substitution is identified as such.

Snapshot Program

The Snapshot Program is a relocatable subroutine executed with the user's program. It gives the programmer listings of selected areas of core storage at points in his program that he has specified. The contents of the Instruction Address Register, index registers, and status indicators are saved and printed.

The required calling sequence is placed at the points from which the Snapshot is to be executed. Each calling sequence defines the location and size of a storage area to be printed. The Snapshot Program and its calling sequence can be provided by SNAP cards (see System Monitor publication).

Storage Print Program

A listing of the contents of core storage is obtained with the Storage Print Program. The input of this program is the Core Image File, which is automatically prepared at Unusual End of Program on those systems with the Core Image File option (see System Monitor publication). All or selected portions of core storage may be printed by the program. In addition, the contents of the Instruction Address Register (when possible), the status indicators, and the index registers will be printed separately.

To obtain a storage print, the user must run his program in test mode and must force an Unusual End of Program (see the System Monitor publication).

The Storage Print Program is called in by one Utility control card after the Utility Control Program has been called in by the Monitor control card.

Tape Print Program

The Tape Print Program can print the contents of tape by tape records or by files. Printing may start at (1) the beginning of tape, (2) a specified number of tape records or files from the beginning, (3) the point at which the tape was left by the user's program, (4) a specified number of tape records in either

direction from that point, or (5) a specified number of tape files forward from that point.

Control card entries are required to define the tape label (if any), the first and last file or record to be printed, the unit containing the files to be printed, and the mode (Move or Load).

The following information is printed in addition to the contents of the tape:

- 1. The tape identification.
- 2. The Symbolic Unit.
- 3. The mode.
- 4. The parity.
- 5. The number of tape files printed.
- 6. The number of tape records printed.
- 7. The number of characters in each record.

1301 Disk Print Program

The 1301 Disk Print Program prints the portion of disk storage specified by the control cards. The format used is Full Track with Addresses. The control card specifies:

- 1. The logical unit containing the information.
- 2. Six- or eight-bit mode.
- 3. The first track to be printed.
- 4. The number of sequential tracks to be printed.

In addition to the contents of the disk, the following identifying information will be printed:

- 1. The Symbolic Unit.
- 2. The track number.
- 3. The character count.