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COMPUTER TECHNOLOGY

Memorandum to: , Recipients of IBM 1620/1311
Linear Programming System

Subject: IBM 1620/1311 Linear Programming System
(1620-CO-04X)
Version 1 Modification Level 0

The subject program is being forwarded to you with this memorandum. It operates only under Monitor I (1620-PR-025). Only one and two disk operation is supported by this release (Version I, Mod 0). However, a 400 row problem has been solved on a two disk system.

Basic program material consists of:

- Application Directory
- Application Description (H20-0109)
- Program Reference Manual (H20-0106)
- Program object card decks. Refer to card deck key for further description (Application Directory).
- Sample problem deck

Optional material, available upon request consists of:

- Source program cards (approx. 20,000)
- System manual, including flow charts and program listings.

Data Input Format coding forms for input preparation can be obtained through the local IBM office; X20-8046, available in pads of 25.

Any discrepancy between the material received and the list above, as well as any errors in card reproduction, should be directed to: Manager of DP Program Information, IBM Corporation, 112 East Post Road, White Plains, New York.

Program Information Department

IBM

40 Saw Mill River Road
Hawthorne, New York 10532
White Plains 9-1900 (Code 914)

International Business Machines Corporation

SEPTEMBER, 1965

ADDRESS CHANGE:

ANY DISCREPANCY BETWEEN MATERIAL RECEIVED AND THE
MATERIAL ORDERED SHOULD BE FORWARDED TO THE PROGRAM
INFORMATION DEPARTMENT, NOW LOCATED AT 40 SAW MILL RIVER
ROAD, HAWTHORNE, NEW YORK - 10532

PROGRAM INFORMATION DEPARTMENT

IBM 1620-1311 LINEAR PROGRAMMING SYSTEM

1620 - CO - 04X

APPLICATION DIRECTORY

This directory contains information concerning all available material associated with the subject application. Its objective is to enable the recipient to understand what he has received, where to locate specific items, and what to do with them.

IBM 1620-1311 Linear Programming System

APPLICATION DIRECTORY

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DECK LIST

Program Deck

The IBM 1620-1311 Linear Programming System is supplied to the user in the form of a card deck. The first card of the deck, a Monitor cold start card, calls in the Monitor program, which loads the LP system onto disk.

The program deck consists of a series of object decks for the individual routines comprising the 1620-1311 LP System. The first three cards of each object deck are:

Monitor **JOB 5 card
 Monitor **DUP card
 Monitor *DLOAD card

The object deck card counts do not include these three (3) Monitor cards at the beginning of each deck.

The entire deck is arranged as follows:

	Monitor cold start card	1 card
1	**JOB 5 card	1 card
	**DUP card	1 card
	*DLABL 11111 card	1 card
2	Object deck, INPUT.	79 cards
3	Object deck, ROW. ID	47 cards
4	Object deck, COL. ID	39 cards
5	Object deck, MATRIX	153 cards
6	Object deck, FIRSTB	112 cards
7	Object deck, BASIS.	66 cards
8	Object deck, INPUTA	87 cards
9	Object deck, INPUTB	55 cards
10	Object deck, INPUTC	47 cards
11	Object deck, INPUTD	76 cards
12	Object deck, MTXDSK	106 cards
13	Object deck, REVISE	47 cards
14	Object deck, REVROW	35 cards
15	Object deck, REVCOL	27 cards
16	Object deck, REVMAT	94 cards
17	Object deck, REVSLK	26 cards
18	Object deck, REVFST	82 cards
19	Object deck, REVBAS	40 cards
20	Object deck, SAVE. B	65 cards

21	Object deck, OUTPUT	172 cards
22	Object deck, DO. D/J	111 cards
23	Object deck, GETOFF	34 cards
24	Object deck, COST. R	174 cards
25	Object deck, CHECK.	192 cards
26	Object deck, INVRT1	43 cards
27	Object deck, INV002	86 cards
28	Object deck, INV003	87 cards
29	Object deck, INV004	104 cards
30	Object deck, INV005	40 cards
31	Object deck, IVLAST	29 cards
32	Object deck, NEWRHS	123 cards
33	Object deck, LP1620	21 cards
34	Object deck, LP1621	164 cards
35	Object deck, 1DUAL	277 cards
36	Monitor **** card	

37 Sample Problem Deck

Following the program deck is a sample problem deck which the user may use 1) to be sure that the 1620-1311 LP System has been loaded correctly, and 2) to become familiar with the format of the various agenda and data input cards.

The deck of 179 cards is arranged as follows:

Monitor cold start card
 Monitor ** JOB 5 card
 Monitor ** XEQ LP1620 card
 INPUT. C card
 ROW. ID card
 9 data cards
 MATRIX card
 55 data cards
 FIRST. B card
 7 data cards
 ENDATA card
 ASSIGN card
 MIN. . . card
 SAVE. B card
 OUTPUT card
 CHECK. card
 COST. R card

DO. D/J card
Comments card (* in col. 1)
PAUSE. card
REVISE card
ROW. ID card
 1 data card
COL. ID card
 1 data card
MATRIX card
 5 data cards
FIRST. B card
 2 data cards
BASIS. card
VARBLS card
 1 data card
SLACKS card
 1 data card
EOF card
INPUT. C card
COL. ID card
 2 data cards
EOF card
INPUT. C card
ROW. ID card
COL. ID card
 7 data cards
MATRIX card
FIRST. B card
 7 data cards
NEXT. B card
 7 data cards
NEXT. B card
 7 data cards
BASIS. D card
EOF card
ASSIGN card
MAX... card
SAVE. I card
OUTPUT card
MIN... card
OUTPUT card
INPUT. D card
MIN... card
OUTPUT card

CHECK. card
INPUT. C card
ROW. ID card
COL. ID card
MATRIX card
FIRST. D card
BASIS. D card
EOF card
ASSIGN card
MIN... card
OUTPUT card
DO. D/J card
COST. R card
GETOFF card
ERASEB card
MAP...card
MAP...card
MAP...card
MAP...card
ENDJOB card

The sample problem is explained in detail on page 88 of the Reference Manual.

Source Deck

The first five cards of each source deck are :

- 1 cold start card
- 2 ~~***~~ JOB
- 3 ~~***~~ SPS
- 4 * OUTPUT CARD
- 5 * PUNCH SYMBOL TABLE

These cards enable the user to assemble a program. The source decks are numbered as follows :

- DECK # 1 Disk Label Routine Cards
- DECK #2-35 Program Cards

<u>DECK #</u>	<u>PROGRAM NAME</u>	(Column 76) <u>DECK ID Character</u>
2	INPUT	A
3	ROW. ID	B
4	COL. ID	C
5	MATRIX	D
6	FIRSTB	E
7	BASIS	F
8	INPUTA	G
9	INPUTB	H
10	INPUTC	I
11	INPUTD	J
12	MTXDSK	L
13	REVISE	M
14	REVROW	N
15	REVCOL	Ø
16	REVMAT	P
17	REVSLK	Q
18	REVFST	R
19	REVBAS	S
20	SAVE. B	T
21	OUTPUT	U
22	DO. D/J	V
23	GETOFF	W
24	COST. R	X
25	CHECK	Y
26	INVRT1	Z
27	INV02	0
28	INV03	1
29	INV04	2
30	INV05	3
31	IVLAST	4
32	NEWRHS	5
33	LP1620	6
34	LP1621	7
35	IDUAL	8
36	SAMPLE PROBLEM	

PREPARATORY SYSTEM PROCEDURES

The 1620-1311 Linear Programming System is distributed as a deck of SPS-produced actual cards. It is expected that the user will want to keep the LP system on the disk semi-permanently.

The procedure for loading the system onto the disk is as follows :

1. Place the LP actual deck in the card reader.
2. Set all console sense switches to OFF and all machine check switches to PROGRAM.
3. Press RESET on the console.
4. Press LOAD on the card reader.

The first card of the deck is a Monitor cold start card, which calls in the Monitor program. Monitor program loads each routine onto the disk, and prints END OF JOB when the entire LP System has been loaded.

REQUIRED PROGRAMMING SYSTEMS

The source language used for the 1620-1311 Linear Programming System is IBM 1620 SPS II-D. The system is called in under control of the IBM 1620 Monitor I System (1620-PR-025). (Reference IBM 1620 Monitor I System Reference Manual, Form C26-5739.) The I/O operations in the LP System are under Monitor control. At the completion of an LP run, the LP System returns control to Monitor. Therefore, an LP problem can be stacked with other jobs to be run under Monitor.

STATEMENT OF MAINTENANCE PROCEDURE

This program will be maintained through the use of serially numbered modification letters. Any unmodified system is considered to be modification level 0. Each subsequent modification raises the modification level by 1. The initial availability of this program is version 1, modification level 0. Should the nature or quantity of changes make reassembly necessary, a new version will be distributed. Each reassembly raises the version number by 1; modification letters to a new version begin at 1.

Modification letters will be mailed to all previous recipients of the program. All modification letters will be supplied with the program. The change or alter cards will be included in the appropriate deck(s) to reflect the latest changes.

An Authorized Programming Analysis Report (APAR) should be submitted through your local IBM Systems Engineer to report any difficulties encountered in the use of this system (Form 120-0482-2). The APAR should be addressed to APAR Processing, IBM Application Programming Standards, 112 East Post Road, White Plains, New York.