MRX/OS System Generation

Checklist

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This edition is a major revision and obsoletes all previous editions. It documents the operating procedures at their level in MRX/OS Release 2.

Technical changes are marked with a bar in the outer margin. Changes due to subsequent releases will be documented in future publications bulletins or revisions.

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PREFACE

This document is a question-and-answer checklist that should be used to select system generation options. The answers to the questions comprise your input data to the system generation programs. Coding forms are printed after each question so that you can code your system generation options directly into this document and thereby create a permanent record of your particular system. Appendix C shows samples of completed Checklists. After each sample is an explanation of the coded statements as well as the defaults that have been selected. Appendix A lists the Control Language statements required to execute the system generation programs.

This Checklist should be used in conjunction with the **MRX/OS System Generation Reference** manual. Before you attempt to complete the Checklist, read this reference manual. Section 5 of the manual lists and explains possible answers to all of the Checklist questions. Material is presented in this section that is not discussed in the Checklist itself.

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1. INTRODUCTION

PREPARING THE SYSTEM GENERATION INPUT DECK

This Checklist has been designed to allow you to prepare your system generation input deck in three steps.

STEP 1. Read the Checklist questions and answer those that describe your hardware configuration and software system. Put your answers on the coding lines provided with each question. When you finish answering the questions you will have coded your input data for JOBONE.

STEP 2. Code the Control Language statements listed in Appendix A of this Checklist. Additional statements for SYSGEN-related jobs appear in Appendix B of the **MRX/OS System Generation Reference** manual.

STEP 3. Keypunch your answers to the Checklist questions and the Control Language statements. After you have keypunched this information, arrange your input deck. Insert the Checklist data (answers to Checklist questions) after the //DATA statement for JOBONE.

If you have previously initialized the disc pack that will contain your new resident operating system, you are now ready to execute the system generation programs. If you have not initialized your disc pack, do so before you execute the system generation programs. Use the Disc Initialize utility that is described in the **MRX/OS Utility Programs Reference** manual to perform the initialization procedure.

If at the completion of this procedure the console contains messages that list the tracks on your disc that are bad, make sure that your PCAT, CCAT, $MSGLIB, and $NUCLIB files are not assigned to cylinders containing the bad tracks.

HOW TO USE THE CHECKLIST

All of the questions (and possible answers) that appear in this Checklist are explained in Section 5 of the **MRX/OS System Generation Reference** manual. If you have any questions about a particular item in the Checklist, refer to Section 5. When you have finished keypunching your input data and you have initialized the disc pack that will contain your new resident operating system, refer to Section 4 of the **System Generation Reference** manual for the operating procedures that you should follow to perform your system generation.

When answering the Checklist questions, remember the following rules:

1. The choices to the questions are in boldface type. If the question applies to your system, select one of the choices; or you may choose not to answer and select the default value.

2. Default values in this Checklist are italicized. If a question has a default value, it is shown immediately after the coding choices. When you decide to accept the default value for a particular question, you need not code an answer for that question. If you define answers in *addition* to the default answers, you must also code the default answer.

   If you do not have a telecommunications network in your system, you can ignore all the questions in the Telecommunications section. If you have no COBOL compiler, you can ignore all the questions in the COBOL Language section.

3. Begin your answer to each question in card column 6.

4. *Always leave card column 5 blank.*

5. Remember to keypunch the information that has been precoded in card columns 1 through 4 for every question that you answer. These numbers are used to identify the questions to the SYSGEN programs.

6. If you do not answer a question because it does not pertain to your system or because you have decided to accept the system generation default, *do not* keypunch the first four digits of that particular card.

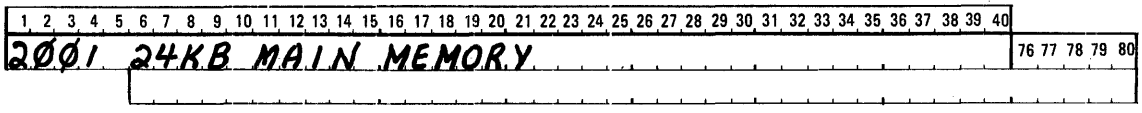
7. If you want to add comments to your answers to the Checklist questions, leave one or more blank spaces after the last character of your answer and then code your comments.

The following examples show the types of questions and answers that appear on the Checklist. Questions that do not show default values have no defaults.

EXAMPLE 1

What is the main memory size of your computer? Specify one:

16KB, 24KB, 32KB, 48KB, 64KB

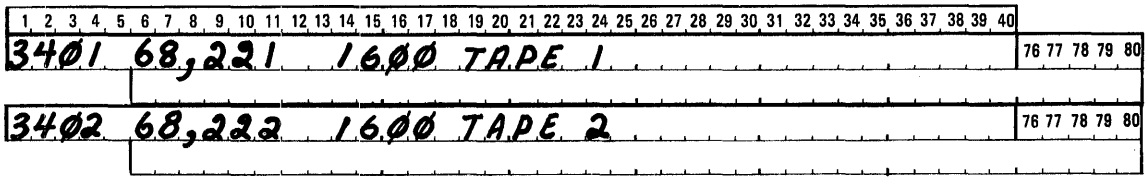


This answer shows a computer system that has 24KB of central storage. (MAIN MEMORY is a comment entry.)

EXAMPLE 2

Specify, on separate data cards, the device type and device address of each magnetic tape drive in your configuration. Appendix B lists the device type entry for supported devices. The device address is a three-digit hexadecimal number that begins with a 1 or 2. Use a comma to separate the device type from the device address.

Refer to Appendix D for the byte requirement of each tape drive and each controller. A maximum of four drives can be connected to one controller. The 800 bpi drives can be connected to 1600 bpi controllers, but 1600 bpi drives cannot be connected to 800 bpi controllers.

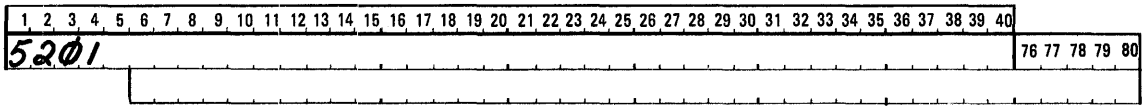


This answer shows two 1600 bpi tape drives located at device addresses 221 and 222.

EXAMPLE 3

How many cards are there in your average Assembler Language program? Specify a number from 1 through 65,535. Do not include a comma in your answer.

Default is 1000.



Because no answer is coded here, the SYSGEN programs will automatically supply the default value 1000. Remember, do *not* keypunch the card unless you code an answer to the question. Because you have accepted the default for this question, you would not submit a card numbered 5201.

2. SYSTEM GENERATION CHECKLIST

SYSGEN CONTROL

1. What type of SYSGEN are you performing? Specify one:

   1 Type 1 is a complete system generation.

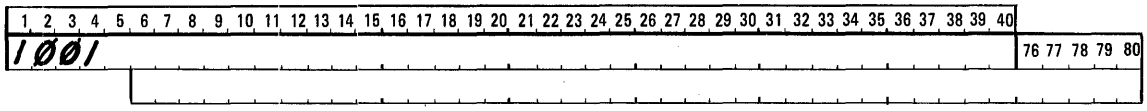
   2 Type 2 is a modification of the resident operating system.

   3 Type 3 is a modification of the programming services.

   Default is 1.

   If you are performing a Type 1 SYSGEN, you must read all of the sections in this Checklist and answer the questions that describe your configuration and your system. If you are performing a Type 2 SYSGEN, you must answer the questions that pertain to features you wish to modify in the following Checklist sections: SYSGEN Control, System Control, Input Spooler, I/O Devices, and Telecommunications. If you are performing a Type 3 SYSGEN, you must answer the questions that pertain to features you wish to modify in the following Checklist sections: SYSGEN Control, Control Language Services, Assembly Language, and COBOL Language.

   Refer to Section 3 in the **MRX/OS System Generation Reference** manual for a description of the file (library) of object modules used for each type of SYSGEN. This file is used as input to the Linkage Editor in SYSGEN job 2.



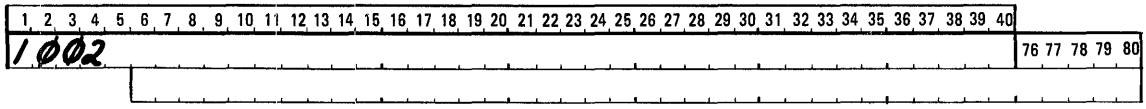
2. Which resident operating system do you have? Specify one:

   MINIMUM (8KB)

   RESIDENT EXTENSION (10KB)

   Default is RESIDENT EXTENSION.

   The final size of your resident operating system depends upon the hardware-related options and software features that you decide to add to either the Minimum system or the Resident Extension system. Table D-1 in Appendix D lists the features and their byte requirements that can be added to both systems. Table D-2 lists the byte requirements of the telecommunications lines.

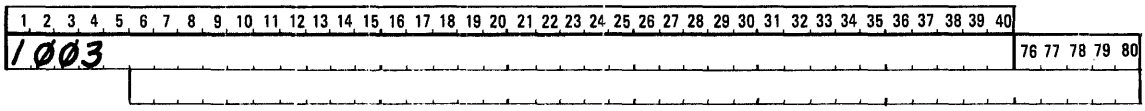


3. What is the name of your library that contains the file of SYSGEN object modules that you want updated by the SYSGEN programs? The library name must be a 1 to 8 character alphanumeric name, and it must match the name you supply on the //CALL statement in GENPROC3.

Default is $SGOBJ.

Refer to Section 3 in the **MRX/OS System Generation Reference** manual for a description of the library ($SGOBJ) that contains the file of object modules that you want updated.

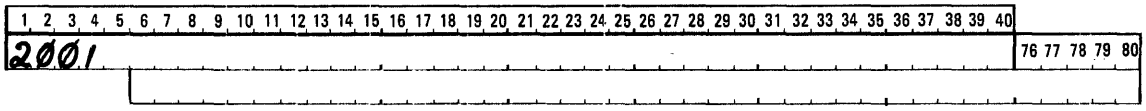
Refer to Appendix A in this manual for the //CALL statement of GENPROC3.



SYSTEM CONTROL

1. What is the main memory size of your computer? Specify one:

16KB, 24KB, 32KB, 48KB, 64KB



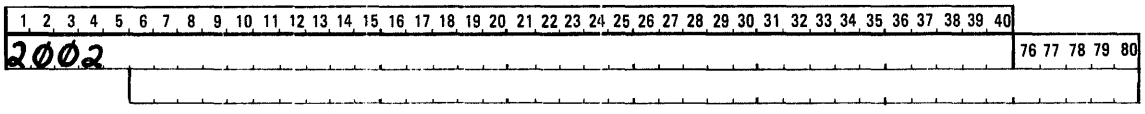
2. Does your system have the hardware Error Correction (ECC) feature? Specify one:

YES

NO

Default is NO.

This feature is not available on the MRX 7200 Processing Unit. Table D-1 in Appendix D lists the software byte requirements.



3. If you have a two-partition system, specify in bytes the size of partition 1. Otherwise, omit this question, and the SYSGEN programs will automatically assign the memory that is not occupied by the resident operating system to your single user partition. No partition can be smaller than 8,192 bytes.

Use the following steps to determine the size of partition 1.

1. Add to the basic size of your resident (8KB or 10KB) the byte requirements of the various hardware-related options and software features that you have selected for your system. Tables D-1, D-2 and D-3 in Appendix D list these byte requirements.

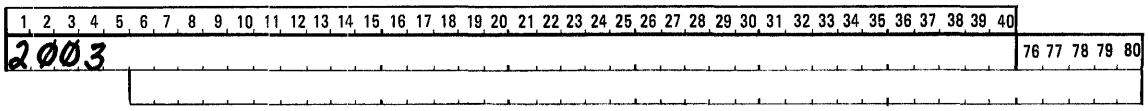
2. Round this total byte count to a value that is divisible by 256.

3. Next, subtract this value from the total main memory size of your computer (your answer to question 1 in this section of the Checklist).

4. The remainder of your subtraction is the total amount of memory you have available for your user partitions.

5. Decide how large you want your first partition. Check to make sure that the size you have selected is divisible by 256; if not, round the number so that it is divisible by 256. *This is the number that you code in answer to the question.*

To find the size of the second partition, perform the following operation: subtract the rounded byte count for partition 1 from the total byte count available for use by the user partitions. The remainder is the size of your second partition. Do not code this number in answer to this question.



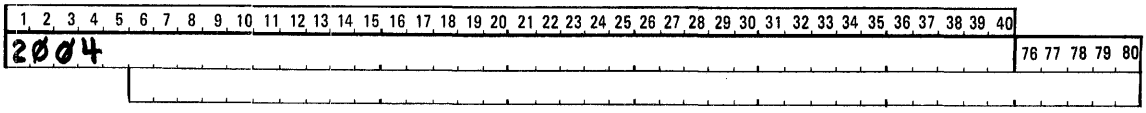
4. If you have the Resident Extension operating system, specify whether or not you have selected Performance Option 1. Specify one:

   YES

   NO

   Default is NO.

   See Table D-1 in Appendix D for the byte requirement of this feature.



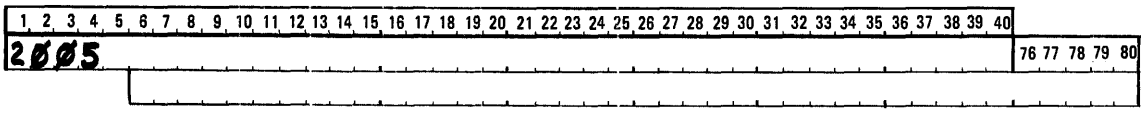
5. If you have the Resident Extension operating system, specify whether or not you have selected Performance Option 2. Specify one:

YES

NO

Default is NO.

See Table D-1 in Appendix D for the byte requirement of this feature.



OUTPUT SPOOLER

Answer the questions in this section if you have the Resident Extension system. If you specify NO in answer to question 1, skip the remaining questions in this section. If you have the Minimum system omit this section entirely.

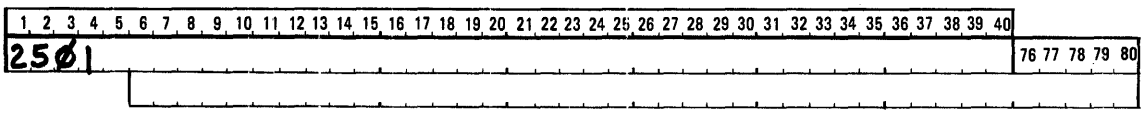
1. Does your system have the Output Spooler feature? Specify one:

YES

NO

Default is NO.

See Table D-1 in Appendix D for the byte requirement of this feature.

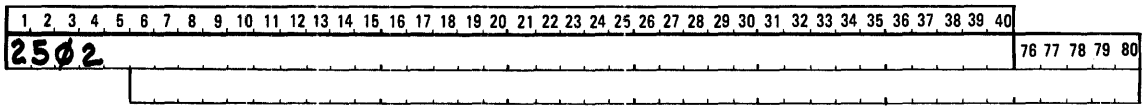


2. If your system has the Output Spooler, what is the maximum number of printers that you want dedicated to the Spooler at any one time? Specify a number in the following range:

1-14

Default is 1.

The number of device addresses coded in answer to question 4 in this section must not exceed the number of devices specified in answer to this question. The buffer space required for printers is determined from the answer to this question and the answer to question 5 in this section. Refer to Table D-2 in Appendix D for specific details.

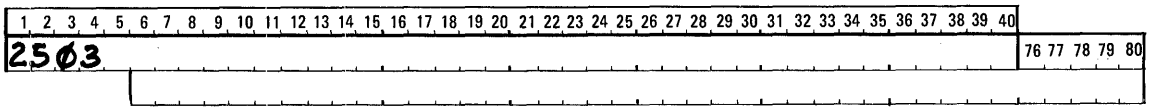


3. If you have a reader/punch, do you want it dedicated to output spooling? Specify one:

YES

NO

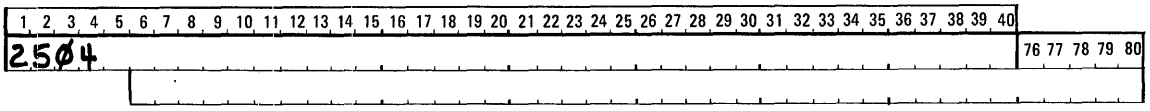
Default is NO.



4. If your system has the Output Spooler specify a list of the device addresses for the printers that you want assigned to the Spooler. Separate the device addresses one from another with a comma.

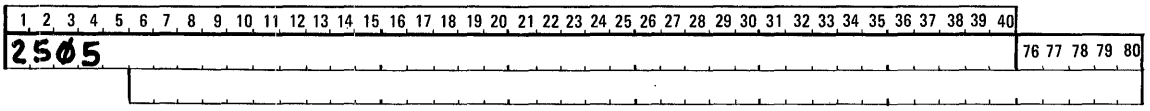
Default is 21E.

All device addresses specified in answer to this question must also be specified in answer to question 4 in the I/O Devices section of this Checklist. Note also that the device type must also be specified when answering question 4 in the I/O Devices section. The number of printers that can be assigned depends on the printer blocking factor that you select. See Table D-2 in Appendix D for details.



5. If your system has the Output Spooler, specify the printer blocking factor. Refer to Table D-2 in Appendix D for the ranges allowed.

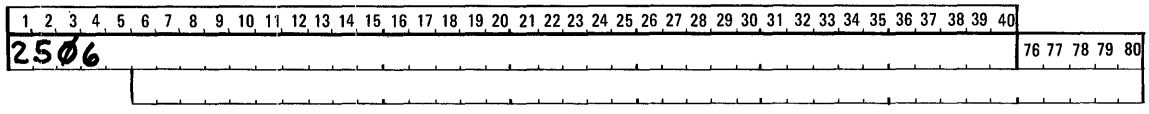
Default is 1.



6. If your system has the Output Spooler, specify the punch blocking factor. Refer to Table D-1 in Appendix D for the byte requirement of the Spooler punch. Specify a number in the following range:

1-2

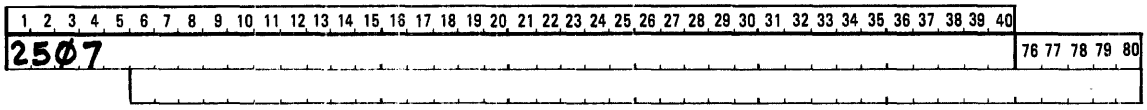
Default is 1.



7. If your system has the Output Spooler, what is the maximum number of files that you want to allow queued on the Spooler queue? Specify a number in the following range:

45-255

Default is 45.



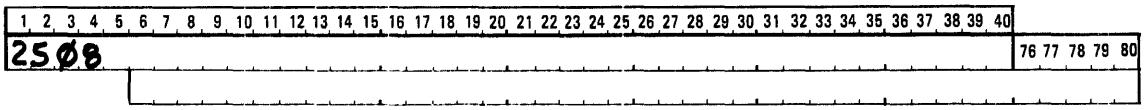
8. If your system has the Output Spooler, do you want the Job Accounting feature? Specify one:

YES

NO

Default is NO.

See Table D-1 in Appendix D for the byte requirement of this feature.



I/O DEVICES

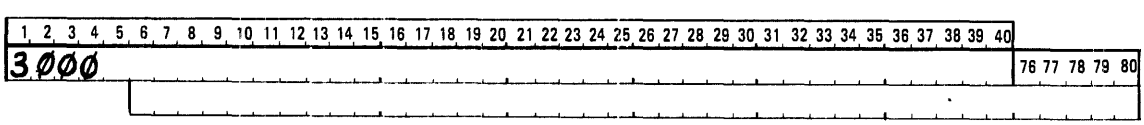
1. Does your system have the Second Channel feature? Specify one:

YES

NO

Default is NO.

See Table D-1 in Appendix D for the byte requirement of this feature.

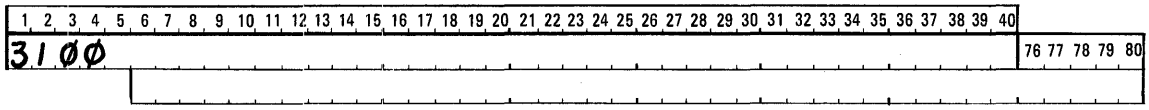


2. Do you have a card reader attached to your integrated card reader attachment feature? Specify one:

YES

NO

If you specify YES, the SYSGEN programs assign your card reader to device address 204. The device type will be 23 to denote a buffered reader with the early return feature. If this device is your standard input device, refer to question 2 in the Control Language Services section of this Checklist.

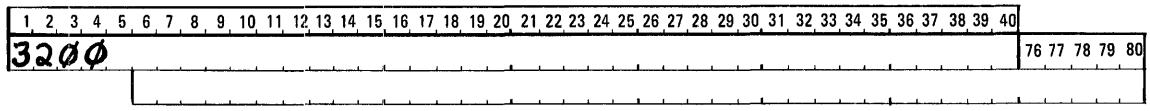


3. Do you have a card reader/punch attached to your integrated card reader/punch attachment feature? Specify one:

YES

NO

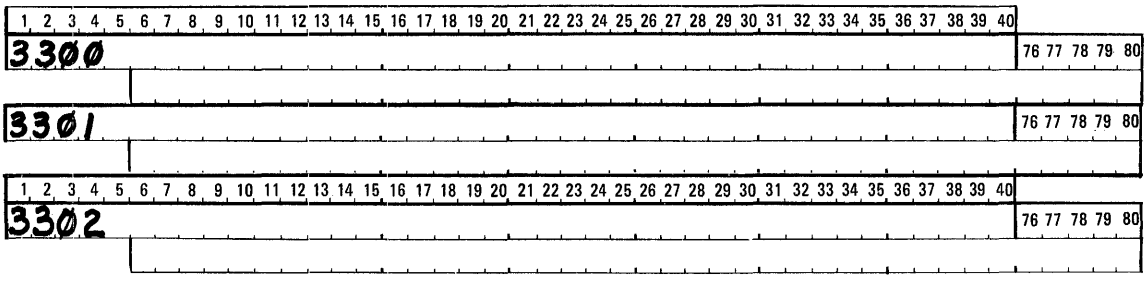
If you specify YES, the SYSGEN programs will automatically assign your card reader/punch to device address 20C. The device type will be 11 to denote a buffered card reader/punch. If this device is your standard input device, refer to question 2 in the Control Language Services section of this Checklist.



4. Specify, on separate data cards, the device type and device address of each line printer in your configuration. Appendix B lists supported device types. Use a comma to separate the device type from the device address. The device address is a three-digit hexadecimal number that must begin with 1 or 2 (in order to begin your device address with a 1, you must have answered YES to question 1 in this section).

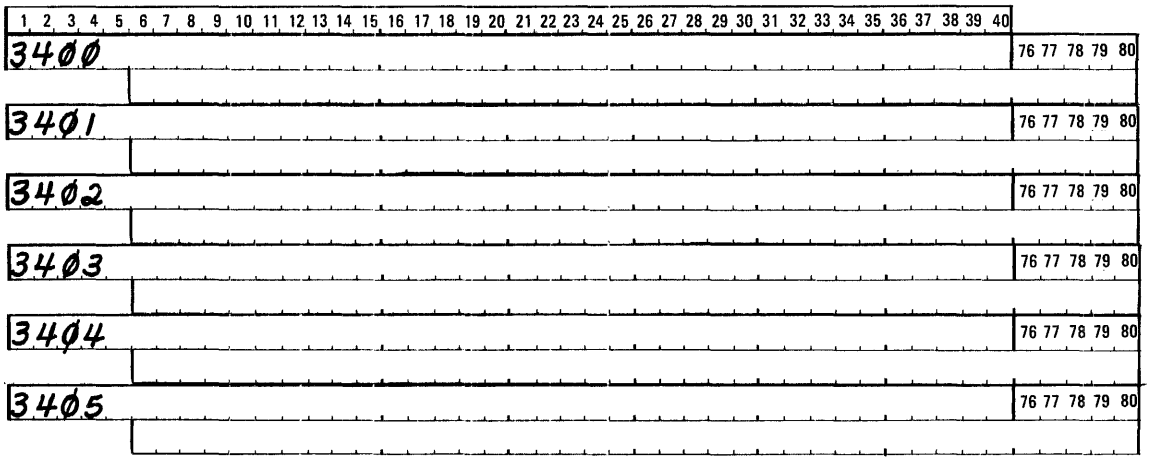
Two speeds of line printers are available. They are: 600 lpm and 1200 lpm.

Default is 51,21E.



One printer is supported under both resident operating systems. Cards numbered 3303 through 3314 are available for additional line printers attached via the Selector Channel under both systems. Refer to Table D-1 in Appendix D for the byte requirements for additional line printers.

5. Specify, on separate data cards, the device type and device address of each magnetic tape drive in your configuration. Appendix B lists supported device types. Use a comma to separate the device type from the device address. The device address is a three-digit hexadecimal number that must begin with 1 or 2 (in order to begin your device address with a 1, you must have answered YES to question 1 in this section).

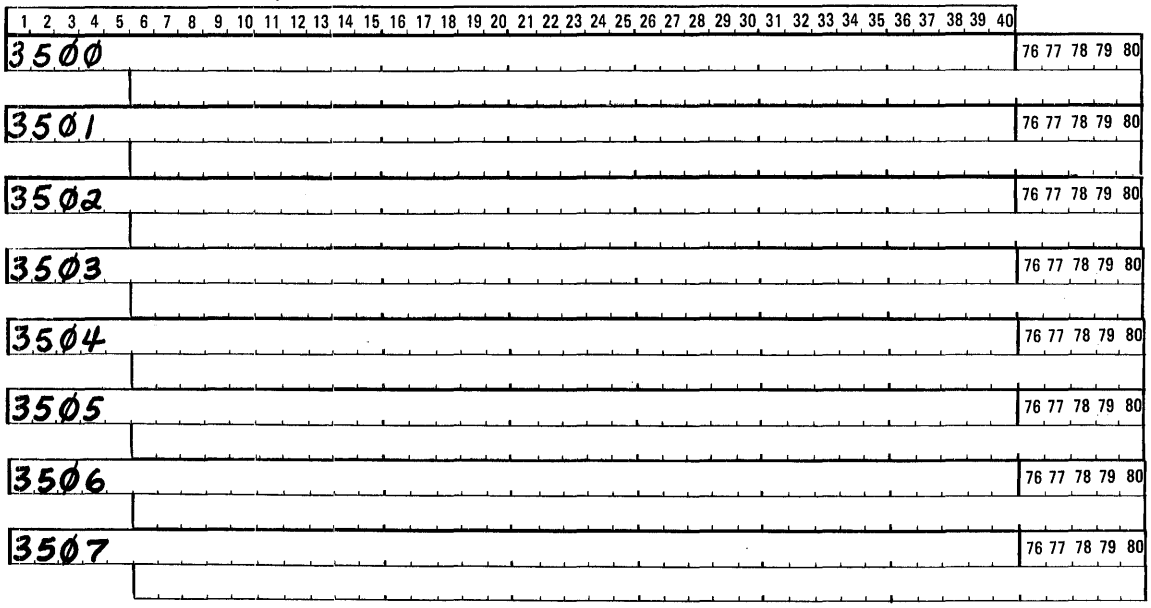


Additional cards numbered 3406 through 3459 are available for additional tapes under both resident operating systems. Refer to Table D-1 in Appendix D for the byte requirements for tape drives and tape controllers. A maximum of 4 drives can be attached to one controller. Do not attempt to attach 1600 bpi drives to the MRX 3237 Model 12 Magnetic Tape Drive controller (800 bpi controller).

6. Specify, on separate data cards, the device type and device address of each disc drive in your configuration. Appendix B lists supported device types. Use a comma to separate the device type from the device address. The device address is a three-digit hexadecimal number that must begin with a 3.

Defaults are: 70,300

70,301



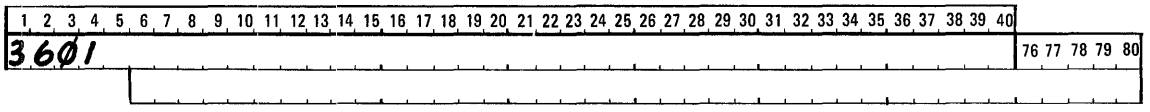
Both systems support two disc drives. A maximum of 8 drives can be added under either resident operating system. It is also possible to configure a system containing only one drive. Refer to Table D-1 in Appendix D for the byte requirement for additional disc drives. Address 300 is assumed to be assigned to the system disc.

7. Do you want the disc Seek-on-Position software feature in your system? Specify one:

YES

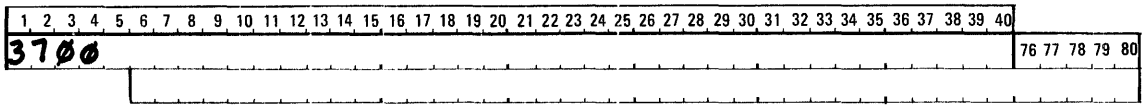
NO

Default is NO.



See Table D-1 in Appendix D for the byte requirements of this feature.

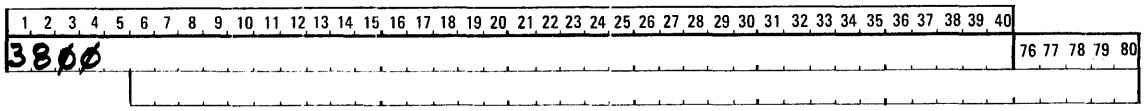
8. If you want automatically shared discs at IPL (initial program load) time, enter the addresses of the discs you want shared. Separate the addresses one from another using a comma. If you do not want this feature, omit this question.



9. What UCS (universal character set) images do you want associated with each of your printers? Enter the printer address and the associated image for each UCS printer. Separate the printer address from the character image with a comma. Separate each pair one from another with a comma.

Example:

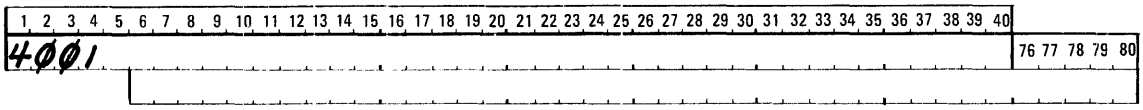
21E, PN, 21A, XX



TELECOMMUNICATIONS

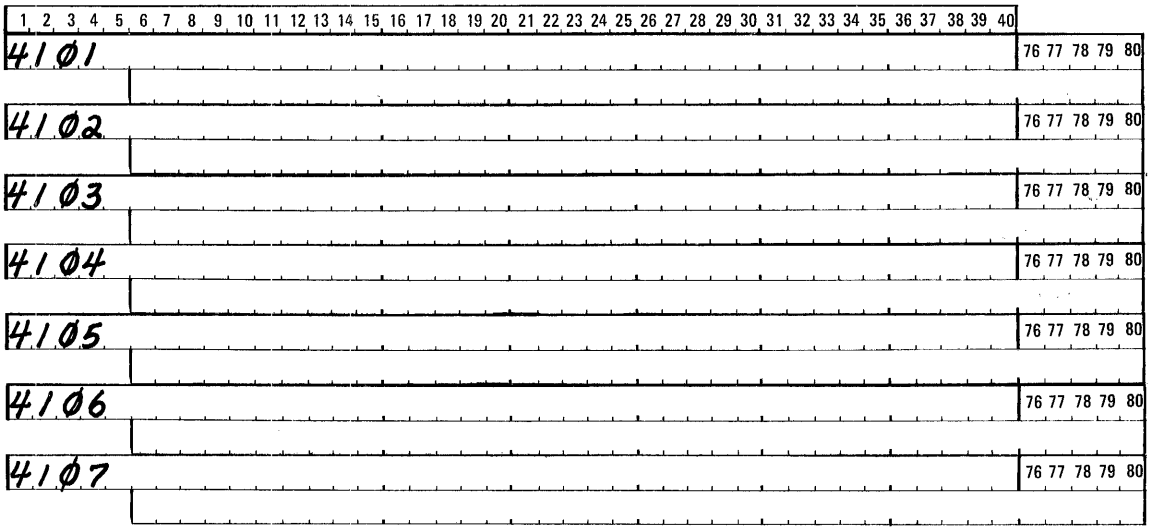
If you have a telecommunications network in your configuration, you must answer the following series of questions. Otherwise omit them.

1. How many telecommunications lines do you have in your configuration? For MRX/40 Resident Extension users, specify a decimal number from 1 through 7. For MRX/50 Resident Extension users, specify a decimal number from 1 through 15. For each line you declare in answer to this question, you must code a data card that answers question 2. For example, if you specify 6 in answer to this question, you must code six data cards to answer question 2.



2. Specify, on separate data cards, the device type and device address of each telecommunications line in your configuration. Separate the device type from the device address with a comma. Appendix B lists supported device types. Appendix D, Table D-3, lists the byte requirements for each type. The device addresses available are 001 through 00F.

Remember, the device address must correspond to the line number. For example, the device address for line 1 would be 001, and for line A (decimal 10) it would be 00A.



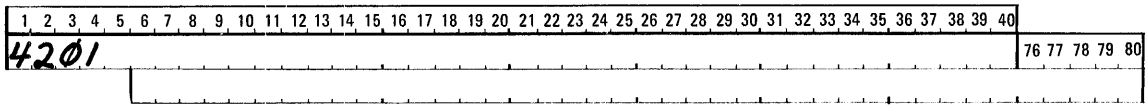
Cards numbered 4108 through 4115 are available for additional line descriptions.

3. Do you want a logical communications capability in addition to the physical communications system that you have just configured? Specify one:

YES

NO

Default is NO.



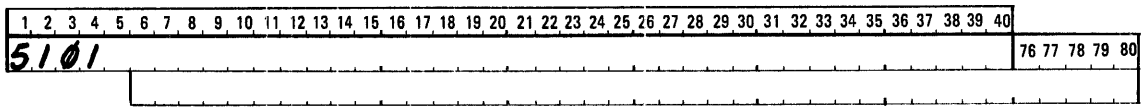
The byte requirements for this feature are listed in Table D-1 in Appendix D.

CONTROL LANGUAGE SERVICES

1. What is the maximum number of entries that you will allow in your job queue? Specify a number in the following range:

   1-62

   Default is 1, which gives you first-in, first-out, job flow.

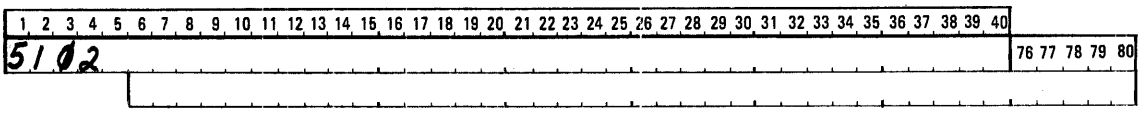


2. What device are you using as your standard input device for job control purposes? Specify one:

   READER

   READER/PUNCH

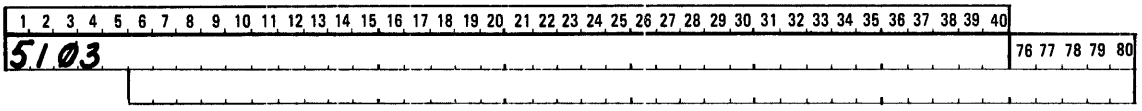
   Default is READER.



3. What value do you want Control Language Services to supply for the keyword PRIORITY when the keyword is omitted from //JOB statements? Specify a number in the following range:

   1-9

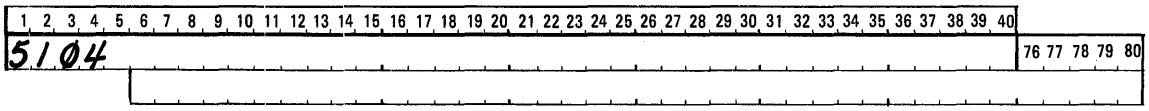
   Default is 1.



4. What value do you want Control Language Services to supply for the keyword TIME when the keyword is omitted from //EXECUTE statements? Specify a number in the following range:

1-1439

Default is 1439 (23 hours, 59 minutes).

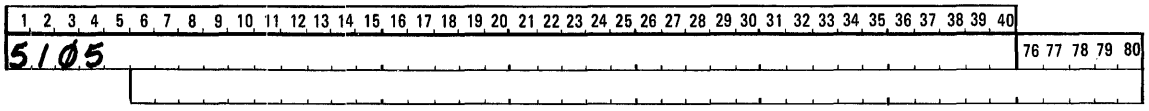


5. Do you want the keyword USER to be a required keyword on all //JOB statements? Specify one:

YES

NO

Default is NO.

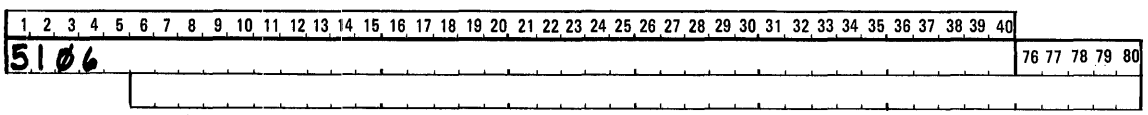


6. Which entry do you want Control Language Services to supply for the keyword SPL when the keyword is omitted from //ROUTE statements? Specify one:

YES

NO

Default is NO.

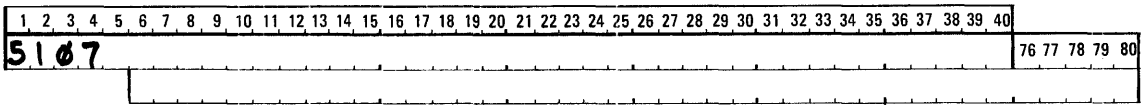


7. What value do you want Control Language Services to supply for the first positions/parameter for the keyword NUM (primary allocation) when the keyword is omitted from the //ROUTE statement? Specify a number in the following range:

1-32767

Default is 1000.

Do not include a comma in your response.

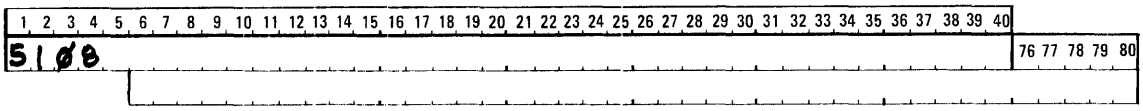


8. What value do you want Control Language Services to supply for the second positions/parameter for the keyword NUM (expand increment) when the keyword or this parameter is omitted from the //ROUTE statement. Specify a number in the following range:

1-32767

Default is 1000.

Do not include a comma in your response.

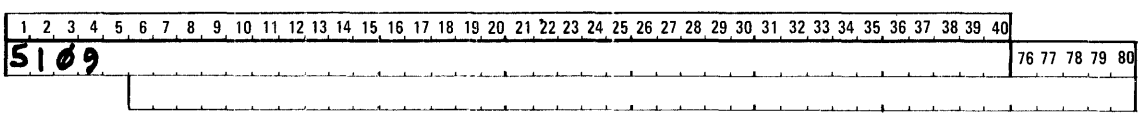


9. What value do you want Control Language Services to supply for the keyword NUM when the keyword is omitted from //DATA statements? Specify a number in the following range:

1-32767

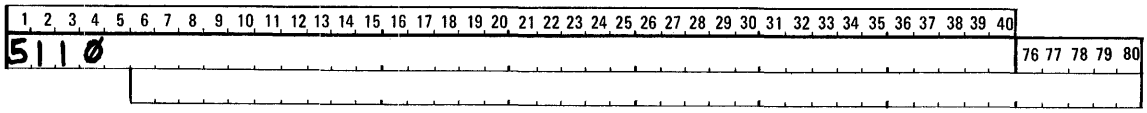
Default is 1000.

Do not include a comma in your response.



10. What character set do you want to be the default for the UCS parameter on //ROUTE statements? Answer this question only if you have one or more printers that have the universal character set.

Default is PN.

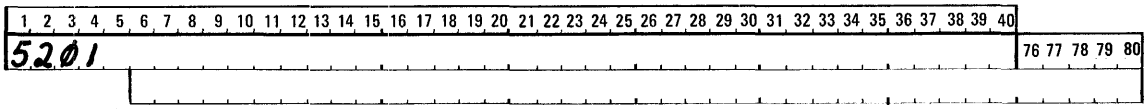


ASSEMBLER LANGUAGE

1. How many cards are there in your average Assembler Language program? Specify a number in the range given below. Do not include a comma in your answer.

1-65535

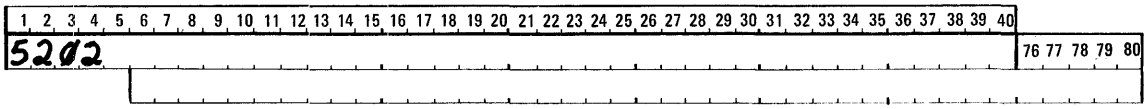
Default is 1000.



2. In which column do you want the Assembler to quit processing source statements? Specify a number in the following range:

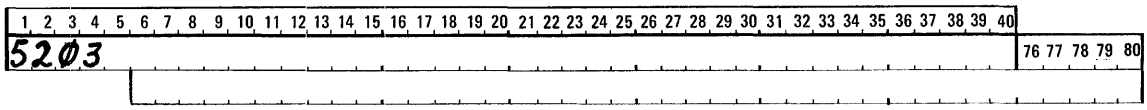
41-120

Default is 72.



3. How many lines per page do you want printed on your Assembler Language listing? Specify a decimal number. The answer to this question depends upon the size of your paper and the number of lines per inch that your printer prints.

Default is 56.



4. Does your computer have the floating-point hardware feature? Specify one:

YES

NO

Default is NO.

```
5204
```

COBOL LANGUAGE

1. How many cards are there in your average COBOL program? Specify a number in the range given below. Do not include a comma in your answer.

1-65535

Default is 1000.

```
5301
```

2. In which column do you want the COBOL compiler to quit processing COBOL source statements? Specify a number in the range given below.

41-120

Default is 72.

```
5302
```

3. How do you want your USASI COBOL errors handled? Specify one:

WARNING

FATAL

Default is FATAL.

```
5303
```

A. CONTROL LANGUAGE STATEMENTS FOR SYSTEM GENERATION

These are the Control Language statements needed to execute the System Generation programs. Only the statements for JOBONE, JOBTWO, JOB2A, and JOB2B (the formal SYSGEN jobs) are shown here. Insert your input data (answers to Checklist questions) where shown. Refer to Appendix B in the **MRX/OS System Generation Reference** manual for specific details about keyword parameters. The shaded //CALL statements are valid only for Procedure B. See the **MRX/OS System Generation Reference** manual, Section 4, for details.

JOBONE CLS

```
//JOB       NAME=JOBONE, TYPE=1 [,USER=] [,PRIORITY=]
//CALL      PROC=SGALLOC, NUCLOC=____, MSGLOC=7, SYSVOL=____
//CALL      PROC=SGCOPYA, LIST=YES, INFILE=$SYSLODLIB,
//          OUTFILE=$SYSLODLIB, OCAT=NO, OLOC=____, ONUM=____,
//          INVOL=____, OUTVOL=____
//CALL      PROC=SGCPYCAT, INVOL=____, OUTVOL=____
//CALL      PROC=SGCOPY, INFILE=SYSGEN-MAC-BACKUP,
//          OUTFILE=$SYSMACLIB
//EXEC      PGM=LIBUTIL
//PAR       COMMAND=DELETE, MEM=$OSCEPL,MEM=$OSCEPL2, MTYPE=ABS
//DEF       ID=LIST, DEV=PRINTER
//DEF       ID=OUTPUT, STA=(P,O), FIL=$SGOBJ, VOL=volume identifier
//CALL      PROC=GENPROC1
//DATA      FIL=CHECKLISTDATA
  •
  •         Insert input data (answer to Checklist questions) here.
  •
//EOJ
```

* Omit for Procedure B.
** Omit for Type 2 and Type 3.

JOBTWO CLS

Defaults are underlined in the //CALL statements for GENPROC3.

```
//JOB     NAME=JOBTWO, TYPE=1 [,USER=] [,PRIORITY=]
//CALL    PROC=GENPROC2
//CALL    PROC=GENPROC3, SYSVOL=____, DEVADDR=_____
//        [ ,FULLGEN= {YES} ] [ ,STDNUC= {YES} ] [ ,OBJNAME= {your name} ]
                    {NO }              {NO }               {$SGOBJ   }
//        [ ,RESLOC= {nnn } ]
                     {YES }
                     {NO  }
//CALL    PROC=GENPROC4
//CALL    PROC=SGMERGE, SYSVOL=_____
//CALL    PROC=SGPURGE, FILE=$SYSLODLIBA
//CALL    PROC=SGRTNCAT, INVOL=____, OUTVOL=____
//EOJ
```

Omit the //CALL statement to GENPROC3 for Type 3 SYSGENs.

JOB2A CLS

Insert the second to the last //DEF statement only if you answered YES to question 8 in the Output Spooler section of the Checklist.

```
//JOB     NAME=JOB2A, TYPE=1 [,USER=] [,PRIORITY=]
//EXEC    PGM=LIBUTIL
//PAR     COMMAND=COPY
//DEF     ID=INPUT, FIL=$SYSPROCLIB, STA=P, VOL=_____
//DEF     ID=OUTPUT, FIL=$SYSPROCLIB, STA=P, SIZ=80, NUM=1560,
//        ORG=S, CON=YES, VOL=_____
//DEF     ID=CAT, FIL=$SYSELOG, STA=P, ORG=S, CON=YES, NUM=520,
        SIZ=40, CSD=NO, BLK=1, CAT=YES, LOC=_____
//DEF     ID=CAT, FIL=$OSSPLJA, STA=P, ORG=R, CON=YES, NUM=200,
        SIZ=54, CSD=NO, BLK=1, CAT=YES [,LOC=____ ] [,VOL=____ ]   } Optional
//DEF     ID=LIST, DEV=PRINTER
//EOJ
```

JOB2B CLS

This job is not required if you are using Procedure B for your SYSGEN jobs.

```
//JOB     NAME=JOB2B, TYPE=1 [,USER=] [,PRIORITY=]
//CALL    PROC=SGCOPYA, OSIZ=80, OCSD=YES, OLOC=NO,
//        INFILE=$SYSMACLIB, OUTFILE=$SYSMACLIB, ONUM=17550,
//        INVOL=____, OUTVOL=____, LIST=YES
//CALL    PROC=SGCOPYA, INFILE=$SGOBJ, OUTFILE=$SGOBJ,
//        ONUM=8000, INVOL=____, OUTVOL=____ LIST=YES
//EOJ
```

COMMENTS

1. If you specified YES in answer to question 5 in the Control Language Services section of the Checklist, USER= becomes a required parameter for your system generation //JOB statements.

2. If you are performing a Type 3 system generation (refer to question 1 in the SYSGEN Control section of the Checklist), omit the //CALL statement to GENPROC3 in JOBTWO.

3. Because all of the SYSGEN jobs must be run sequentially, do not put the next job in the card reader until the preceding job has finished executing.

B. DEVICE DESCRIPTIONS

Table B-1. I/O Equipment Table

Device Name	Generic Name	Equipment Type	Device Type
Line Printer	PRT	132 char, nonbuffered	50
Line Printer	PRT	132 char, buffered	51
IBM 1403 Printer	PRT	132 char, buffered	59
Magnetic Tape	TAPE8	800 bpi density	60
Magnetic Tape	TAPE16	1600 bpi density	68
Disc	DISC	200 cylinder	70

Table B-2. Telecommunications Equipment Table

Modem Name	Generic Name	Trans	Leased/ Switched	Use	Device Type
NONE (Local EIA-RS-232-C)	TP80	ASYNC	L	Switched Manual Dial/Answer	80
WE 103A, E, F WE 113B WE 202C,D 4-Wire	TP84	ASYNC	L	Switched Manual Dial/Answer	84*
WE 103F WE 202C,D 4-Wire } Multi-point	TP85	ASYNC	L	Switched Manual Dial/Answer	85
WE 103A,E WE 113B	TP86	ASYNC ASYNC	S	Answer (only)	86
WE 202C,D	TP88	ASYNC	L	Switched Manual Dial/Answer	88
2-Wire Secondary Channel	TP8A	ASYNC	S	Answer (only)	8A
WE 202C,D	TP8C	ASYNC	L	Switched Manual Dial/Answer	8C
2-Wire	TP8E	ASYNC	S	Answer (only)	8E
Split Speed	TP98	ASYNC	L	Switched Manual Dial/Answer	98
	TP9A	ASYNC	S	Answer (only)	9A
WE 201A,B WE 202C,D WE 203A WE 208A	TPA4	SYNC	L	Switched Manual Dial/Answer	A4
WE 201A,B WE 202C,D WE 203A WE 208A } Multi-point	TPA5	SYNC	L	Switched Manual Dial/Answer	A5
WE 201A WE 202C,D	TPA6	SYNC	S	Answer (only)	A6
WE 202C,D	TPA8	SYNC	L	Switched Manual Dial/Answer	A8
2-Wire Secondary Channel	TPAA	SYNC	S	Answer (only)	AA
WE 201A,B WE 202C,D WE 203A WE 208A	TPB4	SYNC	L	Switched Manual Dial/Answer	B4
WE 201A,B WE 202C,D WE 203A WE 208A } Mutli-point	TPB5	SYNC	L	Switched Manual Dial/Answer	B5
WE 201A WE 202C,D	TPB6	SYNC	S	Answer (only)	B6
WE 202C,D 2-Wire	TPB8	SYNC	L	Switched Manual Dial/Answer	B8
Secondary Channel	TPBA	SYNC	S	Answer (only)	BA

*84 is the line type used to describe direct line connections which do not include modems of 10, 15, or 30.

C. SYSTEM GENERATION EXAMPLES

SAMPLE 1: MINIMUM SYSTEM

Figure C-1 shows a system generation data deck (answers to Checklist questions) used to generate a Minimum 8KB resident operating system. The hardware environment under which this resident operating system has been designed to operate includes:

- 24KB main memory
- One buffered card reader with the early return feature located at device address 204 and used as the system input device (default accepted for data card 5102)
- One buffered printer located at device address 21E and used as the system output device
- One disc drive located at device address 300

Additional features present include:

- Maximum of 4 entries in the job queue
- Value of 60 for the TIME= keyword on //EXEC statements
- 800 cards in the average Assembler Language program

No COBOL compiler is present. Defaults selected include:

- $SGOBJ is the library containing the file of SYSGEN object modules updated by the SYSGEN programs
- No hardware ECC (error correction feature)
- Single partition system
- No Second Channel feature
- No disc Seek-on-Position software feature
- Priority of 1 for the PRIORITY= keyword on //JOB statements
- NO as the value of the keyword USER= on //JOB statements
- 72 as the column where the assembler should quit processing source language statements
- 56 lines per page on an Assembler Language listing

MEMOREX **Assembler Coding Form**

Punching Instructions

Graphic	Ø	/	I	Z		
Punch	ZERO	ONE	CAP. I	CAP. Z		

Date _____ Page 1 of 1

Programmer _____

Program SYSGEN for MINIMUM SYSTEM-INPUT DECK

NAME	OPERATION	OPERAND	IDENTIFICATION
1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16 17	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72	73 74 75 76 77 78 79 80
*SYSGEN CONTROL			
1ØØ2 MINIMUM			
*SYSTEM CONTROL			
2ØØ1 24KB		MAIN MEMORY SIZE	
*I/O DEVICES			
31ØØ YES		C.R.D. READER SYS.STAN INPUT DEVICE	
32ØØ NO		NO READER/PUNCH	
35ØØ 7Ø,3ØØ		ONE DRIVE SYSTEM	
*CONTROL LANGUAGE SERVICES			
51Ø1 4		MAX ENTRIES IN JOB QUEUE	
5104 6Ø		VALUE FOR TIME PARAMETER ON // EXEC CARD	
*ASSEMBLER LANGUAGE			
52Ø1 8ØØ		AVERAGE NUM CARDS IN ASM LANG PROGRAM	

SAMPLE ONE

*Do not insert these headings in your input deck.

C2

This system does not include clock processing (the timing feature). No entry is shown describing the printer because the default has been selected.

SAMPLE 2: RESIDENT EXTENSION SYSTEM

Figure C-2 shows a system generation data deck (answers to Checklist questions) used to generate a Resident Extension (10 KB) operating system. The hardware configuration under which this resident has been designed to operate includes:

- 48KB main memory
- Hardware ECC (error correction feature)
- Two partitions, the first being 13056 bytes
- Performance Option 1
- Output Spooler feature
- Two dedicated printers at device addresses 21E, and 21A
- One dedicated reader/punch at device address 20C
- Printer blocking factor of 4 and reader/punch blocking factor of 2
- Maximum of 100 files in the job queue
- Job Accounting feature
- Second Channel feature
- One buffered card reader with early return feature at device address 204
- One buffered card reader/punch on device address 20C used as the standard system input device
- Three buffered printers at device addresses 21E, 21A, and 217
- One 800 bpi tape at device address 100
- Two 1600 bpi tapes at device addresses 107 and 10E
- Four discs at device addresses 300, 301, 302, and 303
- One device type 84 communications line at device address 001
- Three device type A4 communications lines at device address 002, 003, and 004

Additional features present include:

- Disc Seek-on-Position feature
- Two shared discs on device addresses 302 and 303
- PN on device address 21E and XX on device address 21A (UCS printers)
- Logical communications capability
- Maximum of 12 entries in the job queue
- PN is the default character set on //RTE statements
- Value of 30 for the TIME= keyword on //EXEC statements
- USER= keyword required on //JOB statements
- 120 as the column where the Assembler and the COBOL compiler quite processing source statements
- Floating-point hardware feature
- 1500 cards in the average COBOL program

Defaults selected include:

- Type 1 SYSGEN
- Resident Extension system
- $SGOBJ is the library containing the file of SYSGEN object modules updated by the SYSGEN programs
- SPL=YES on //RTE statements
- NUM=1000 for first and second position parameters on //RTE statements
- NUM=1000 on //DATA statements
- Priority of 1 as the value of the keyword USER= on //JOB statements
- 1000 cards in the average Assembler Language program
- 56 lines per page on an Assembler Language listing
- COBOL USASI errors are treated as fatal.

MEMOREX **Assembler Coding Form**

Punching Instructions

Graphic	Ø	2 or 1	I	Z			
Punch	ZERO	ONE	CAP. I	CAP. Z			

Date _____ Page 1 of 3

Programmer _____

Program SYSGEN DATA FOR RESIDENT EXTENSION OPERATING SYSTEM

NAME	OPERATION	OPERAND	IDENTIFICATION
*SYSGEN CONTROL			
*SYSTEM CONTROL			
2ØØ1 48KB		MAIN MEMORY SIZE	
2ØØ2 YES		ERR COR FEATURE	
2ØØ3 13Ø56		SIZE PARTITION 1 IN BYTES	
2ØØ5 YES		PERFORMANCE OPTION 1	
*OUTPUT SPOOLER			
25Ø1 YES		OUTPUT SPOOLER FEATURE PRESENT	
25Ø2 2		2 DEDICATED PRINTERS	
25Ø3		1 DEDICATED RDR/PNCH	
25Ø4 21E, 21A		PRINTER ADDRS ASGN TO SPOOLER	
25Ø5 4		PRINTER BLK FACTOR	
25Ø6 2		PUNCH BLK FACTOR	
25Ø7 1ØØ		MAX NO OF FILES ON SPOOLER QUEUE	
25Ø8 YES		JOB ACCT FEATURE PRESENT	
*I/O DEVICES			
3ØØØ YES		2ND CHAN FEATURE PRESENT	
31ØØ YES		BUF CRD RDR ON DEV ADDR 2Ø4	
32ØØ YES		BUF RDR/PCH ON DEV ADDR 2ØC	

SAMPLE TWO

*Do not insert these headings in your input deck.

MEMOREX **Assembler Coding Form**

Punching Instructions
Graphic: Ø | 1 or I | I | Z
Punch: ZERO | ONE | CAP I | CAP Z

Date _____ Page 2 of 3
Programmer _____
Program SYSGEN DATA FOR RESIDENT EXTENSION OPERATING SYSTEM

SAMPLE TWO

NAME	OPERATION	OPERAND	IDENTIFICATION
3300 51,	21E	PRINTER 1	
3301 51,	21A	PRINTER 2	
3302 51,	217	PRINTER 3	
3400 60,	100	TAPE 1 800 BPI	
3401 68,	107	TAPE 2 1600 BPI	
3402 68,	10E	TAPE 3 1600 BPI	
3500 70,	300	DISC 1	
3501 70,	301	DISC 2	
3502 70,	302	DISC 3	
3503 70,	303	DISC 4	
3601 YES		DISC SEEK ON POSITION FEATURE	
3700 302,	303	SHARED DISCS	
3800 21E,	PN, 21A., XX		
*TELECOMMUNICATIONS			
4001 4		NUM OF TCOM LINES	
4101 84,	001	TCOM LINE 1	
4102 A4,	002	TCOM LINE 2	
4103 A4,	003	TCOM LINE 3	
4104 A4,	004	TCOM LINE 4	
*CONTROL LANGUAGE SERVICES			
5101 12		NUM OF ENTRIES IN JOB QUEUE	
5102 READER/PUNCH		STAND INPUT DEVICE	

*Do not insert these headings in your input deck.

MEMOREX **Assembler Coding Form**

Punching Instructions

Graphic	Ø	or 1	I	Z		
Punch	ZERO	ONE	CAP. I	CAP. Z		

Date _____ Page 3 of 3

Programmer _____

Program SYSGEN DATA FOR RESIDENT EXTENSION OPERATING SYSTEM

NAME	OPERATION	OPERAND	IDENTIFICATION
1 2 3 4 5 6 7 8	10 11 12 13 14 15 16 17	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72	73 74 75 76 77 78 79 80
5104 30		VALUE OF TIME PARM ON //JOB STMTS	
5105 YES		USER= PARM ON //JOB STMTS	
5106 YES		SPL= PARM DEFAULT ON //RTE STMTS	
*ASSEMBLER LANGUAGE			
5202 120		COL WHERE ASSM QUITS PROCESSING SOURCE: TCOM LIMIT	
5204 YES		FLOAT PT HDWE FEATURE	
*COBOL LANGUAGE			
5301 1500		NUM OF CARDS IN AVG COBOL PROGRAM	
5302 120		COL WHERE COBOL QUITS PROCESSING SOURCE: TCOM LIMIT	

SAMPLE TWO

*Do not insert these headings in your input deck.

D. BYTE REQUIREMENTS FOR OPTIONAL FEATURES

The byte requirements for the various options that are available under both MRX operating systems are within 10% of the actual byte requirements.

Table D-1. Byte Requirements for Available Options

Option Name	Byte Requirement
Error Correction Feature (ECC Log)	160
Performance Option 1 (Resident Extension system only)	270
Performance Option 2 (Resident Extension system only)	250+X+Y+Z*
Job Accounting Feature (Resident Extension system only)	250
Output Spooler (Resident Extension system only)	4096**
Spooler Punch (Resident Extension System only)	220+142 x punch blocking factor
Second Selector Channel Feature	150
Additional Line Printers (each)	18
Magnetic Tape Controller, including One Tape Drive	462
Additional Tape Drives (each)	14
Additional Disc Drives (each)	14
Disc Seek-on-Position Feature	30
Logical Communications Feature (Resident Extension system only)	1650
Floating-point Hardware Feature	*8K control storage*

*Where X = nominal associative list length, Y = TCOM associative list length, and Z = Spooler associative list length.
**An additional 452 bytes are required for system labels and default buffers.

Table D-2. Printer Spooler Blocking Factors

Number of Printers*	Blocking Factor Range
1	1-14
2	1-14
3	1-7
4	1-5
5	1-3
6	1-3
7	1-2
8	1-2
9-14	1

*Byte requirements for spooled printer = 220 + 142 x blocking factor.

Use Table D-3 to calculate the byte requirements for each line type in your configuration. The basic driver byte requirement is 2046.

Table D-3. Byte Requirements for Telecommunications Lines

Line (Device) Type	Byte Requirement
80	2180
84	2354
85	2502
86	2442
88	2354
8A	2442
8C	2502
8E	2590
98	2406
9A	2494
A4	2850
A5	2850
A6	2938
A8	2706
AA	2794
B4	2980
B5	2980
B6	3068
B8	2836
BA	2924

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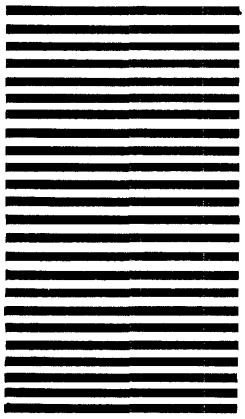

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