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Sort/Merge

Program Number 360S-SM-023

This publication contains specifications for the IBM System/360 Operating System Sort/Merge program, including control statement preparation, program operation, I/O device assignment, and timing estimates. The program has generalized sorting and merging capabilities that can be tailored to the needs of particular installations and applications.

PREFACE

This publication is a guide for users of the System/360 Operating System Sort/Merge program. It contains a general description of the program and specific information about control statement formats, program operation, user-written routines, and efficient use of the program. A description of program-generated messages and timing estimates for over 5,000 sorting applications are also included.

The reader should have a thorough understanding of the material in the publications IBM System/360 Operating System: Introduction, Form C28-6534, and IBM System/360 Operating System: Concepts and Facilities, Form C28-6535.

A working knowledge of general sorting and merging techniques is also assumed. General information about sorting and merging is contained in the IBM publication Sorting Techniques, Form C20-1639.

The following publications, that are referred to throughout this text, also contain pertinent information:

IBM System/360 Operating System: Control Program Services, Form C28-6541

IBM System/360 Operating System: Data Management, Form C28-6537

IBM System/360 Operating System: Job Control Language, Form C28-6539

IBM System/360 Operating System: Linkage Editor, Form C28-6538

IBM System/360 Operating System: Storage Estimates, Form C28-6551

IBM System/360 Operating System: System Generation, Form C28-6554

This publication has been revised to support the Release #10 version of the Sort/Merge program. Therefore, the information contained should not be used until that version is available.

In addition, this publication includes preliminary timings to enable the user to estimate Sort/Merge performance for applications using the IBM 2314 Direct-Access Storage Facility.

Fourth Edition (February 1967)

This publication is a major revision of Form C28-6543-2 and obsoletes it and prior editions. In addition to incorporating information released in Technical Newsletter N28-2153, this revision includes a new appendix containing job control language examples and sort/merge cataloged procedures; support for the IBM 2301 Drum Storage Drive is also included, as well as information on designing user-written routines that do not require link editing, a new formula for calculating direct-access intermediate storage requirements, and timing information for the IBM 2301 Drum Storage Drive and the IBM 2314 Direct-Access Storage Facility.

Specifications contained herein are subject to change from time to time. Any such change will be reported in subsequent revisions or Technical Newsletters.

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This publication contains the reference information needed by a user of the System/360 Operating System Sort/Merge program. The sort/merge program is designed to fulfill the sorting and merging requirements of System/360 installations that use magnetic-tape and direct-access input/output (I/O) devices.

The sort/merge program can order data sets into a predesignated collating sequence. The generalized characteristics of the sort/merge program allow it to perform a variety of sorts and merges. Because of this ability, the sort/merge program can simplify many data processing applications that require the sequential updating of previously created data sets.

REQUIREMENTS

The basic machine requirements for use of the sort/merge program are:

- A System/360 model that is large enough to use System/360 Operating System and provide at least 15,500 bytes of main storage for sort/merge program execution.
- At least one selector or one multiplexor channel.
- At least one IBM 2311 Disk Storage Drive (which may be the system residence device) or one IBM 2301 Drum Storage Drive or at least three magnetic tape units.

CAPABILITIES

The sort/merge program sequences the logical records of a data set according to the contents of a control word, which can contain from 1 through 12 control fields. Control fields, which occupy the same portion of each logical record in a data set, can be collated into either ascending sequence or descending sequence.

Any data set that consists of fixed-length or variable-length, blocked or unblocked records (only FB, VB, F and V format codes are supported by the sort/merge program) and can be accessed by the queued sequential access method (QSAM) is acceptable as input or output to the sort/merge program. Input and output units can be any I/O device that operates with QSAM.

The sort/merge program uses sorting and merging techniques that take full advantage of different machine configurations and data set sizes. These techniques are designed to provide the most efficient operation for users of the sort/merge program. For example, the read backward feature is used to eliminate tape rewind time. The program also uses a specialized technique for processing variable-length records. This technique approaches the efficiency of a fixed-length sort or merge.

The technique used to accomplish a given sort/merge program application depends upon information supplied to the program by the user. This information is supplied through sort/merge control statements. Control statements, which define the application to be performed, can be supplied to the sort/merge program in the operating system input stream or as parameters passed by another program.

The user can write his own routines to perform many functions during a sort/merge program execution. User-written routines are given control by the sort/merge program at sort/merge program exits. These exits, in the sort/merge program, allow a user-written routine to insert, summarize, delete, and alter logical records. Errors that may arise during execution of the sort/merge program can sometimes be corrected by user-written routines.

RELATIONSHIP TO OPERATING SYSTEM/360

The sort/merge program is a member of the System/360 Operating System and operates under the supervisory control of the operating system control program. Execution of the sort/merge program must be initiated according to operating system conventions, and any data sets used by the sort/merge program must be defined according to operating system standards. The checkpoint and label-checking (standard and nonstandard) facilities of the operating system can be used during a sort/merge program execution at the user's option.

The sort/merge program can be tailored to the needs of a particular installation when the operating system for that installation is generated.

The sort/merge program is designed to perform two applications:

- Sort a data set of an unknown order into a predesignated order.
- Merge up to sixteen previously sorted data sets into a single sorted data set.

The sequence into which each record is sorted or merged is based on the contents of its control word. A control word can contain up to 256 bytes of information; it has from 1 through 12 control fields. A control field occupies the same portion of each logical record in a given data set. Each control word, along with the record in which it appears, is ordered into either ascending or descending sequence on the basis of standard IBM System/360 collating sequences.[1]

Nonstandard collating can be achieved without physically changing control fields. A routine written by the user can modify one or more control fields each time the sort/merge program collates a logical record. The modified control fields are used for collating purposes only; they do not replace the fields in the logical record. A user-written routine to accomplish control field modification is entered at a sort/merge program exit. (Sort/merge program exits are discussed in the section "Program Modification.")

The maximum control field lengths for the various data formats accepted by the sort/merge program are:

- Character, fixed-point, or normalized floating-point (1 through 256 bytes).
- Packed or zoned decimal (1 through 16 bytes).
- Binary (1 bit through 256 bytes).

Note: The first byte of a floating-point field is interpreted as a signed exponent. The rest of the field (1 through 255 bytes of information) is interpreted as the fraction.

Control fields must be contained within the first 4,092 bytes of a logical record.

The sort/merge program will accept control fields that overlap; that is, the end of one control field may share data with the beginning of another control field.

[1] The collating sequence for character and binary data is absolute; that is, characters and binary fields are not interpreted as having signs. For packed decimal, zoned decimal, fixed-point, and normalized floating-point data, collating is algebraic; that is, each quantity is interpreted as having an algebraic sign.

ENVIRONMENTAL REQUIREMENTS

The sort/merge program operates with any level of the operating system that can make at least 15,500 bytes of main storage available for sort/merge program execution. Of this storage, 12,000 bytes are required by the sort/merge program, and 3,500 by system functions.

Variable amounts of intermediate storage (depending upon the size of the input data set) are needed to perform sorting applications. This storage may be allocated on either magnetic-tape or direct-access devices. The program needs at least three magnetic tape units or one direct-access device for intermediate storage.

The amount of main storage available to the sort/merge program affects the maximum size of physical records that the program can handle. Figure 1 is a summary of the maximum physical record size that the sort/merge program will accept for a given amount of main storage. This table assumes that the minimum number of intermediate storage data sets are assigned, and no control fields are extracted. Maximum logical record size is equal to maximum physical record size. Minimum logical record size is 18 bytes. Conditions such as extracted control fields or large numbers of intermediate storage data sets require additional main storage.

Main Storage Available for the Sort	Maximum Record Size for Tape Intermediate Storage	Maximum Record Size for IBM 2311 Disk Intermediate Storage	Maximum Record Size for IBM 2301 Drum Intermediate Storage
15,500 (minimum)	400 bytes	400 bytes	400 bytes
18K[2] (18,432)	2,000 bytes	2,000 bytes	2,000 bytes
44K (45,056)	6,800 bytes	3,600 bytes	6,800 bytes
50K (51,200)	8,000 bytes	3,600 bytes	8,000 bytes
100K (102,400)	18,000 bytes	3,600 bytes	18,000 bytes
200K (and up) (204,800)	32,000 bytes	3,600 bytes	20,458 bytes
[2]The value of K is 1,024 bytes.			

Figure 1. Estimated Maximum Physical Record Sizes for Input and Output

SORT SPECIFICATIONS

Control fields for a sorting application are defined in a SORT control statement. (This statement is described in the section "Control Statements.") Specifications for the sort are:

- The sort accepts as input a blocked or unblocked sequential data set containing fixed-length or variable-length records.
- Any I/O device that can be used with the queued sequential access method (QSAM) is acceptable for the input and output data sets.
- Up to 32 tape units or 6 direct-access devices may be used for intermediate storage, but tape units, 2311 disk drives, and 2301 drums may not be mixed.
- User-written routines can summarize, insert, delete, lengthen, shorten, or otherwise alter records while they are being sorted.
- Execution of the sort can be initiated by control statements in the operating system input stream, or through the use of ATTACH, LINK, or XCTL macro-instructions by another program.

MERGE SPECIFICATIONS

Control fields for a merging application are defined in a MERGE control statement. (This statement is described in the section "Control Statements.") Merge specifications are:

- The merge accepts as input blocked or unblocked sequential data sets containing fixed-length or variable-length records. All records for a given application must be of the same format.
- Input data sets may have different blocking factors.
- All I/O is accomplished using QSAM.
- Up to 16 input data sets can be merged in one pass.
- The merge provides exits for user-written routines to summarize, insert, delete, lengthen, shorten, or otherwise alter records as they leave the merge.

ERROR CORRECTION FACILITIES

The sort/merge program allows a user to write routines that can correct error conditions that might arise during execution of the program. These routines are entered from exits in the sort/merge program. (A full explanation of these exits is given in the section "Program Modification.")

Two types of error conditions can be handled at sort/merge program exits:

- I/O errors that cannot be corrected by the operating system.
- Errors that arise by specification of an input data set size that is larger than the estimated intermediate storage

capacity calculated by the sort for a given application.

I/O ERRORS

Control is passed to a user-written I/O error routine only when the operating system cannot correct the error condition.

If a permanent read error is encountered, the user-written routine may accept the physical record as it is, attempt to correct the error, skip the record, or request termination.

If an uncorrectable write error is encountered, the user-written routine can perform any necessary abnormal end-of-task operations before the program is terminated.

If user-written routines are not supplied, the program issues the message IER061A-I/O ERR xxx, where xxx represents the number of the unit on which the error occurred. Then the program terminates.

EXCEEDING INTERMEDIATE STORAGE CAPACITY

The sort/merge program estimates a maximum intermediate storage capacity (Nmax) from the information supplied to it at the beginning of each sort. Using Nmax, the program tries to determine the possibility of exhausting intermediate storage while the program is running. If intermediate storage were exhausted, program termination would occur.

The user has the option of supplying either an actual or estimated input data set size to the program. This is accomplished with a control statement. If the user supplies an actual data set size, and the supplied size is larger than Nmax, the program terminates before starting to sort. If the user supplies an estimate or incorrect (smaller than Nmax) data set size, and the number of records processed while sorting reaches Nmax, the program gives control to a user-written routine, if one is supplied. The user-written routine can take one of the following actions:

- Attempt to sort the entire input data set with available intermediate storage.
- Continue sorting with only part of the input data set.
- Terminate the program.

If a user-written routine is not supplied, the sort continues to process records beyond Nmax. If the intermediate storage capacity is actually sufficient to contain all the records in the input data set, the sort completes normally; when intermediate storage is not sufficient, sort capacity is exceeded and the program terminates.

The sort generates a separate message for each of the three possible error conditions. These messages are:

IER041A-N GT NMAX: This message is generated when a user-supplied exact data set size is greater than Nmax.

IER046A-SORT CAPACITY EXCEEDED: This message is generated when the sort has used all available intermediate storage while processing.

IER048I-NMAX REACHED: This message is generated when the sort has exceeded Nmax records, and exit E16 is used.

(A full description of all program messages is contained in Appendix B.)

OPERATING SYSTEM FACILITIES

The sort/merge program uses the operating system label-checking and checkpoint facilities. Information about operating system label-checking facilities can be found in the publication IBM System/360 Operating System: Data Management. Information about checkpoints is contained in the publication IBM System/360 Operating System: Control Program Services.

The sort/merge program also makes extensive use of the operating system data management facilities. All data sets necessary for program operation must be defined in data definition statements (DD statements) that appear in the operating system input stream with the sort/merge control statements for a job. (DD statements are described in the publication IBM System/360 Operating System: Job Control Language.)

The sort/merge program needs a definition of the application to be performed before it can operate on the input data supplied to it. This definition includes:

- A general description of the input data.
- Control field specifications.
- A description of modifications to be made by user-written routines.

Sort/merge control statements are used to supply this information.

Each control statement is thoroughly checked for validity before it is acted upon by the sort/merge program. If the program finds an error, it issues a diagnostic message. (Descriptions of these messages can be found in Appendix B.) However, it is impossible to detect all errors or inconsistent combinations of entries. For this reason, accurate preparation of control statements is necessary.

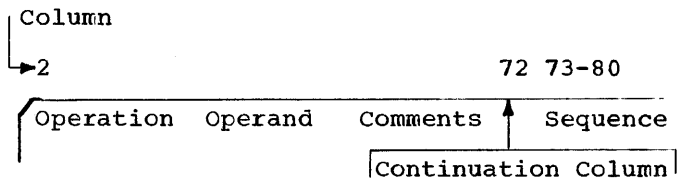
GENERAL DESCRIPTION

Control statement formats for all System/360 sort/merge programs are constant, even though operating environments and data descriptions are different. Compatibility of control statements among System/360 sort/merge programs is discussed later in this section. The five control statements that are acted upon by the operating system sort/merge program are:

Statement	Definition
SORT	This statement provides information about control fields and data set size. It is required when the program is to perform a sorting application.
MERGE	This statement provides the same information as the SORT control statement. It is required when the program is to perform a merging application.
RECORD	This statement provides record-length and format information to the program. It is required when user-written routines modify record lengths.
MODS	This statement associates user-written routines with particular sort/merge program exits. It is required when user-written routines are to be entered at sort/merge program exits.
END	This statement signifies the end of a related group of sort/merge control statements. It is required when a group of related sort/merge control statements are not followed immediately by a JOB control statement. (The JOB control statement is discussed in the publication IBM System/360 Operating System: Job Control Language.)

CONTROL STATEMENT FORMAT

All sort/merge control statements have the same general format:



The control statements are free-form; that is, the operation definer, operand(s), and comments may appear anywhere in a statement, as long as they appear in the proper order, and are separated by one or more blank characters. Column 1 of each control statement must be blank.

The various fields that may appear on a sort/merge control statement are discussed in the following text.

Operation: This field must not extend beyond column 71 of the first card. It contains an operation definer, i.e., a word that identifies the statement type to the sort/merge program. The operation definers recognized by the sort/merge program are: SORT, MERGE, RECORD, MODS, and END. The operation field must be the first field in a statement. In Figure 2, the statement definer SORT is in the operation field of the sample control statement.

Operand: This field must be separated from the operation field by at least one blank

character. If present, this field must begin on the first card of the statement. Operands are used to supply parameters to the sort/merge program. Each operand is made up of an operand definer, or keyword (a group of characters that identifies the operand type to the sort/merge program). Value(s) may be associated with a keyword. The three possible operand formats are:

- keyword=(value$_1$,value$_2$,...,value$_n$)
- keyword=value
- keyword

An example of each of these formats is shown in Figure 2. The operand field is made up of one or more operands separated by commas.

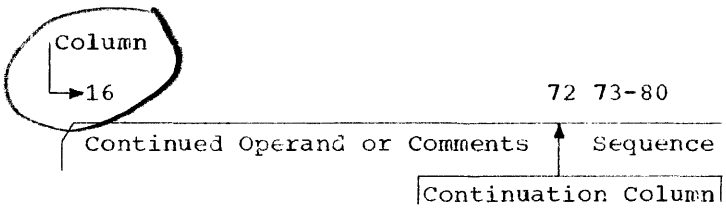
Comments: This field must be separated from the operand field by at least one blank character. It may contain any information desired by the user. Message IER009A appears for each statement containing comments.

Continuation Column (72): Any character other than a blank in this column specifies that the present statement is continued on the next card. In Figure 2, X is used to specify that the next card contains more information pertaining to this SORT control statement.

Column 73-80: This field may be used for any purpose desired by the user. It may be used for identification, or as shown in Figure 2, for sequencing.

Continuation Cards

The format of the sort/merge continuation card is:



The continuation column and columns 73-80 of a continuation card fulfill the same purpose as they do on the first card of a control statement. Columns 1 through 15 of a continuation card must be blank. The maximum number of continuation cards allowed for each type of control statement is shown in the following table:

Control Statement Type	Maximum Number of Continuation Cards
SORT	5
MERGE	5
RECORD	5
MODS	19
END	none allowed

A continuation card is treated as a logical extension of the preceding card. Thus, either an operand or a comments field may begin on one card and continue on the next. The following rules apply to continuing operands or comments fields:

- If there is a continuation of an operand, the next character of the continued operand must appear in column 16 of the continuation card; columns 1-15 must be blank.
- If only comments are continued, column 16 of the first continuation card must be left blank; columns 1-15 must also be blank.
- If an operand continues through column 71, the next character of the operand must appear in column 16 of the continuation card.
- An operand may be broken between two cards without filling the first card through column 71 in either of two ways:
  1. At the end of a complete operand followed by a comma and a blank.
  2. At the end of any of the values in an operand of the type: keyword=(value$_1$,value$_2$,...,value$_n$), followed by a comma and a blank.

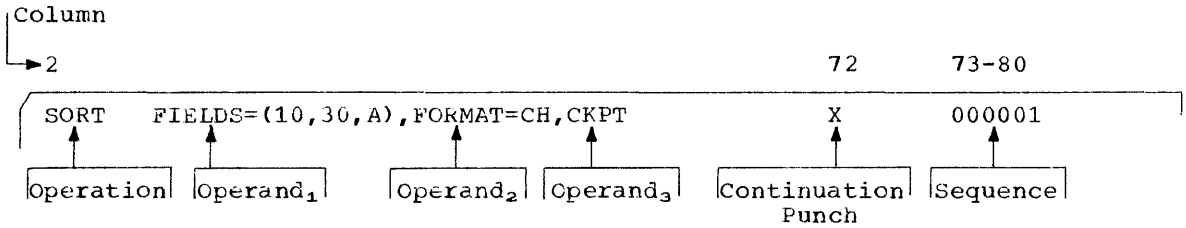


Figure 2. Control Statement Example

CONTROL STATEMENT PREPARATION

The following rules apply to control statement preparation:

- Column 1 of each control statement must contain a blank.
- The operation field must be the first field on the first card of a control statement. It may not appear on a continuation card.
- The operand field, if present, must begin on the first card of a control statement. Operands can appear in any order following the blank(s) after the operation field. The last operand in a statement must be followed by at least one blank.
- Embedded blanks are not allowed in operands. Anything following a blank is considered part of the comments field. Thus, all of the following are interpreted as incorrect values:

```
,2 56,
, 256,
,256 ,
, 256 ,
```

- Values may be written with a maximum of eight alphameric characters.
- Commas, equal signs, parentheses, and blanks are used only as field delimiters. They must not be used in values.
- Each type of control statement may appear only once for each execution of the sort/merge program.
- No more than 25 control statement cards are allowed for a sort/merge program execution.

SORT CONTROL STATEMENT

The SORT control statement is used when a sort is to be performed. It supplies specifications for control fields.

PARAMETERS AND OPTIONS

The format of the SORT control statement is shown in Figure 3. The first field of the statement must be the operation definer SORT.

Parameters

The operand that supplies control field specifications must appear on the SORT control statement. The keyword of this operand is FIELDS.

Two possible formats for the FIELDS operand are shown in Figure 3. The one at the top of the figure is used when control fields containing different data formats are used; the other is used, optionally, when all control fields contain data of the same format.

Four values must be specified for each control field defined. These values are represented by p, m, f, and s in Figure 3.

The major control field is specified first on the SORT control statement, and successive minor control fields are specified following the major control field. Up to 12 control fields can be used. Thus, in Figure 3, p_1,m_1,f_1,s_1 are the specifications for the major control field, and $p_2,m_2,f_2,s_2,\ldots,p_{12},m_{12},f_{12},s_{12}$ are the specifications for the successive minor control fields.

The following text describes the value associated with the FIELDS operand:

p

specifies the beginning (high-order location) of a control field, relative to the beginning of a logical record. The first (high-order) byte in a logical record is byte 1, the second is byte 2, etc. All fields, except binary must begin on a byte boundary. Binary values are given in bytes and bits, following these rules:

The byte location relative to the beginning of the logical record is given first, followed by a period;

$$\text{SORT}\left\{\begin{array}{l}\text{FIELDS}=(p_1,m_1,f_1,s_1,p_2,m_2,f_2,s_2,\ldots,p_{12},m_{12},f_{12},s_{12})\\ \text{FIELDS}=(p_1,m_1,s_1,p_2,m_2,s_2,\ldots,p_{12},m_{12},s_{12}),\text{FORMAT}=x\end{array}\right\}[,\text{SIZE}=y][,\text{SKIPREC}=z][,\text{CKPT}]$$

Figure 3. SORT Control Statement Format

then the bit location relative to the beginning of the byte is given. The resulting notation looks like -- bytes.bits.

The first (high-order) bit of a byte is bit 0; the remaining bits are numbered 1 through 7.

Thus, 1.0 represents the beginning of a logical record. A field beginning on the third bit of the third byte of a logical record is represented as 3.2. When the beginning of a field falls on a byte boundary (d-1 bytes from the beginning of a logical record), it may be represented in one of three ways:

d.0
d.
d

m

specifies the length of the control field. The length of a control field that is a whole number (d) bytes long can be expressed in one of three ways:

d.0
d.
d

All control fields (except binary) must be a whole number of bytes long. Binary fields are expressed in the notation -- bytes.bits. The number of bits specified must not exceed 7. A control field two bits long would be represented as 0.2.

f

specifies the format of the data in the control field. If f is used, it can be any one of the following two-character abbreviations:

CH -- Character
ZD -- Zoned decimal
PD -- Packed decimal
FI -- Fixed-point
BI -- Binary
FL -- Floating-point

If all the control fields contain the same type of data, this parameter may be omitted and the optional FORMAT=x operand is used.

The table below contains the data formats, indicates if they are signed, and shows the maximum control field length for each format.

FORMAT	SIGNED	NUMBER OF BYTES
CH	NO	1-256
ZD	YES	1-16
PD	YES	1-16
FI	YES	1-256
BI	NO	1 bit - 256 bytes
FL	YES	1-256

s

specifies whether the control field is to be ordered in ascending or descending sequence, or whether the control field is to be modified by a user-written routine before ordering. One of the following one-character codes must be used:

A -- Ascending sequence
D -- Descending sequence
E -- User modification

If a user-written routine modifies the control field, the sort/merge program orders the field in absolute ascending sequence following the modification. (See Exit E61, described in the section "Program Modification," for further information.)

Options

The following text explains the optional operands that may be used with the SORT control statement.

FORMAT=x: If all the control fields are of the same type, this operand may be used, in place of the f parameter of the FIELDS operand, to specify the data format. If all control fields are not of the same type, the f parameter of the FIELDS operand must be used. The possible values of x for the FORMAT operand are the same as those for the f parameter.

SIZE=y: This operand specifies the number of logical records in the input data set. The value y can be either the actual data set size or an estimate.

If the actual data set size is supplied, it should be the number of records given to the sort by the input data set, and should not include records inserted by a user-written routine. The value specified in the SIZE parameter is placed in the IN field of message IER047A or IER054I. If the number of records in the input data set, as counted by the sort/merge program, does not agree with the value of the SIZE parameter, the sort terminates.

When the value of y is an estimate, it must be preceded by an E. If this operand is not present, the program assumes that:

- With tape intermediate storage, the input data set can be contained on one volume at the blocking factor used by the sort. (Approximations of this blocking factor can be found in Appendix C.)
- With direct-access intermediate storage, the input data set will fit into the space allocated.

SKIPREC=z: This operand is used to have the sort/merge program skip z records before starting to process the input data set. This operand may be used if the input data set exceeded storage capacity in a preceding execution of the sort/merge program, and only the remaining portion of the data set is to be sorted. The remainder of the input data set can be sorted by skipping over the logical records sorted during the preceding run. (The number of logical records sorted during a partial run is specified by the sort in a message.) The output from the two sort runs can then be merged to complete the operation. If a user-written routine inserts or deletes records in a run during which sort capacity was exceeded, a user-written routine must be used to reposition the modified data set before the second part of the data set can be sorted.

CKPT: This operand tells the sort/merge program to activate the checkpoint facilities of the operating system.

PROGRAMMING NOTES

The following programming notes apply to the use of the SORT control statement:

- All control fields must be located within the first 4,092 bytes of a logical record.
- All floating-point data must be normalized before the sort/merge program can collate it properly. (A user-written routine may be used to normalize floating-point data at execution time.) The E option for the value s in the FIELDS operand must be specified for the fields that are to be modified.
- The maximum length of a packed decimal or zoned decimal field is 16 bytes.
- The total number of bytes occupied by all control fields must not exceed 256. When calculating this total, a binary field is considered to occupy a byte if it occupies any portion of it. Thus, if a binary field begins on byte 2.6 and is 3 bits long, it is considered to occupy 2 bytes, even though only 3 bits are used.

SORT STATEMENT EXAMPLES

The following text contains examples of SORT control statements. Each example is explained in the text associated with it.

Example A

This example shows a simple SORT control statement:

```
Column
→2
 SORT FIELDS=(2.0,5.0,CH,A),SIZE=29483
```

The statement instructs the sort/merge program to perform a sort based on one control field containing character data into ascending order. The control field begins in the second byte of each record and is five bytes long. The size of the input data set is 29,483 logical records.

Example B

This example illustrates a sorting application with five control fields and a data set containing 10,693 logical records. Note that a continuation card is required.

```
Column
→2
 SORT FIELDS=(7.0,3.0,CH,D,1.0,5.0,FI,A,
                                    Column
                                    →72
  398.4,7.6,BI,D,99.0,230.2,BI,A,4X
Column
→16
 52.0,8.0,FL,A),SIZE=10693,CKPT
```

The specifications for each control field, proceeding from major to minor, require the program to:

1. Sort a character field into descending order. It begins on byte 7 and is 3 bytes long.

2. Sort a fixed-point field into ascending order. It begins on byte 1 and is 5 bytes long.

3. Sort a binary control field into descending order. It begins on bit 4 of byte 398 and is 7 bytes and 6 bits long.

4. Sort a binary control field into ascending order. It begins on byte 99 and is 230 bytes and 2 bits long.

5. Sort a normalized floating-point field into ascending order. It begins on byte 452 and is 8 bytes long.

The maximum control word size -- 256 bytes -- is reached in this example. The third control field actually occupies 9 bytes, since bytes 398 and 406 are partially filled by the control field. The fourth control field occupies 231 bytes, since 2 bits of the control field are in byte 330 of each logical record.

This example also specifies checkpoints to be taken by the operating system.

Example C

Three of the control fields in this statement call for a user-written routine at a sort/merge program exit. Note that this example contains a continuation statement.

```
Column
2
SORT FIELDS=(3.0,8.0,ZD,E,76.2,3.4,BI,E,
                                  Column
                                  72
40.0,6.0,CH,D,100.0,8.0,FL,E),X

Column
16
SIZE=E30000
```

(See Exit E61 in the section "Program Modification," for information about control field modification.)

Specifications for the control fields tell the program that:

1. A user-written routine modifies a zoned decimal field that begins on byte 3 of each record and is 8 bytes long.

2. A user-written routine modifies a binary control field that begins on bit 3 of byte 76, and is 3 bytes and 4 bits long. The field passed to the user-written routine will be 4 bytes long, beginning with byte 76.

3. There is a character control field beginning on byte 40 and containing 6 bytes of information. It is to be sorted in descending order.

4. There is an 8-byte field containing unnormalized floating-point information, beginning on byte 100. The user-written routine is required, in this case, to normalize the floating-point information before it is used by the sort.

This example contains an estimate of the number of logical records in the input data set -- 30,000.

Example D

This example shows the use of the FORMAT operand:

```
Column
2
SORT FIELDS=(25,4,A,48,8,A),FORMAT=ZD,
  SIZE=2304
```

Since both control fields contain zoned decimal information, the FORMAT operand may be used. Note that since the fields begin on byte boundaries and are a whole number of bytes long, the period is not necessary.

The input data set, which is 2,304 logical records, is to be sorted into ascending sequence based on the contents of two control fields -- a 4-byte field beginning on byte 25, and an 8-byte field beginning on byte 48.

MERGE CONTROL STATEMENT

The MERGE control statement is used when a merge is to be performed. Specifications for control fields are given in the same format as those associated with the SORT control statement.

PARAMETERS AND OPTIONS

The two possible formats for the MERGE control statement are shown in Figure 4. The operation definer -- MERGE -- must be the first field in the statement.

There are two differences between the parameters and options acceptable with the MERGE control statement and those acceptable with the SORT control statement:

- The SKIPREC operand is not used with the MERGE control statement. This operand is ignored if included.
- The value y in the SIZE operand refers to the total number of logical records in all the input data sets.

PROGRAMMING NOTES

The notes given with the explanation of the SORT control statement also apply to the MERGE control statement.

MERGE STATEMENT EXAMPLES

The parameters in the MERGE control statements shown in the following text are similar to those in the SORT control statement examples given earlier in this section.

Example A

This example contains the same control field definition as SORT Example A:

```
Column
↳2
MERGE FIELDS=(2.0,5.0,CH,A),SIZE=57364
```

The SIZE value -- 57,364 -- in this example is the total number of records in all the data sets used as input to the merge.

Example B

This MERGE control statement example contains the same control field information as SORT Example D:

```
Column
↳2
MERGE FIELDS=(25,4,A,48,8,A),FORMAT=ZD,
      SIZE=10849
```

The number of records in all the input data sets to this merging application is 10,849.

RECORD CONTROL STATEMENT

The RECORD control statement provides a definition of the logical records being sorted or merged. It is required only when user-written modification routines change record lengths.

PARAMETERS AND OPTIONS

The format of the RECORD control statement is shown in Figure 5. The first field in the operation must be the statement definer -- RECORD.

```
RECORD TYPE=x,LENGTH=(l1,l2,l3,l4,l5)
```

Figure 5. RECORD Control Statement Format

```
MERGE { FIELDS=(p1,m1,f1,s1,p2,m2,f2,s2,...,p12,m12,f12,s12)
      { FIELDS=(p1,m1,s1,p2,m2,s2,...,p12,m12,s12,),FORMAT=x } [,SIZE=y][,CKPT]
```

Figure 4. MERGE Control Statement Format

If this statement is included, both operands -- TYPE and LENGTH -- must appear in it.

TYPE OPERAND: The TYPE operand specifies whether the input records to the sort/merge program are fixed- or variable-length format. One of the following characters must be substituted for the x value:

F -- If the records are in fixed-length format.

V -- If the records are in variable-length format.

LENGTH OPERAND: The value l_1 in this operand is required if the RECORD control statement is used. The values l_2 and l_3 are used only if user-written routines modify lengths in the sort or final merge phase of the program. (A description of user-written routines and program phases is contained in the section "Program Modification.") The values l_4 and l_5 are used only when variable-length records are being defined.

FIXED-LENGTH RECORD DEFINITIONS

The following describes the LENGTH operand values for fixed-length record definition:

l_1

is the length of each record in the input data set. If the RECORD control statement is included, this value is required. This value should be the same as the value specified in the LRECL subparameter of the DCB parameter of the SORTIN DD statement. If the values are not the same, the value specified on the DD statement is used. (DD statement parameters are discussed in the section "Program Operation.")

l_2

is the length of each record handled by the sort phase. If this value is not given, it is assumed to be equal to l_1. If user-written routines change record lengths in the sort phase of the program, this value must be included. The l_2 value is not used in merging applications.

l_3

is the length of each record in the output data set. If this value is not given, it is assumed to be equal to l_2, if a sort is being done, or l_1, if a merge is being done. If user-written routines change record lengths in the final merge phase of the program, l_3 must be included. This value should be the same as the value specified in the LRECL subparameter of the DCB parameter of the SORTOUT DD statement. If the values are not the same, the value specified on the DD statement is used. (DD statement parameters are discussed in the section "Program Operation.")

VARIABLE-LENGTH RECORD DEFINITIONS

The following describes the LENGTH operand values for variable-length records:

l_1

is the maximum length of each record in the input data set. This value is required if the RECORD statement is included. This value should be the same as the value specified in the LRECL subparameter of the DCB parameter of the SORTIN DD statement. If the values are not the same, the value specified on the DD statement is used. (DD statement parameters are discussed in the section "Program Operation.")

l_2

is the maximum length of each record handled by the sort phase. If this value is not given, it is assumed to be equal to l_1. If user-written routines change the maximum record length in the sort phase of the program, this value must be included. The l_2 value is not used in merging applications.

l_3

is the maximum length for each record in the output data set. If this value is not given, it is assumed to be equal to l_2, if a sort is being done, or l_1, if a merge is being done. If user-written routines change the maximum record length in the final merge phase of the program, l_3 must be included. This value should be the same as the value specified in the LRECL subparameter of the DCB parameter of the SORTOUT DD statement. If the values are not the same, the value specified on the DD statement is used. (DD statement parameters are discussed in the section "Program Operation.")

l_4

is the minimum length for records in the input data set. If this value is not given, it is assumed to be equal to the minimum record size necessary to contain the control fields defined in the SORT control statement or the minimum physical record length allowed by the operating system, whichever is

greater. This value need not be included if a merge is being done.

ls

is the record length that occurs most frequently in the input data set (modal length). If this value is not given, it is assumed to be equal to the average of the maximum and minimum record lengths in the input data set.

PROGRAMMING NOTES

The following list of programming notes applies to the use of the RECORD control statement:

- The lengths specified for variable-length records must include the 4-byte count field that the operating system places at the beginning of each record.
- When a direct-access device is used for intermediate storage, logical record length cannot exceed the capacity of one track. (See Figure 1.)
- The minimum logical record length of input data set records is 18 bytes.
- The record format (F or V) must be the same as the format specified in the RECFM subparameter of the DCB parameter of the SORTIN and SORTOUT DD statements. If the formats are not the same, the format specified on the SORTIN DD statement is used. (DD statement parameters are discussed in the section "Program Operation.")
- When an operand of the type, keyword=($value_1$,$value_2$,...,$value_n$), is used, values may be omitted if they are equal to those assumed by the program. The following rules apply to omitting values from a LENGTH operand:
  - Values can be dropped from right to left. Thus, if all values after $value_2$ are equal to those assumed by the program, the operand may be written -- keyword=($value_1$,$value_2$).
  - If values are dropped from the middle or from left to right, commas must be used to signify their omission. Thus, if $value_2$ is equal to the value assumed by the program, the operand may be written -- keyword=($value_1$,,$value_3$).
  - If only the first value of a series is needed, the parentheses are optional. An operand of this type may be written as either keyword=value or keyword=(value).

RECORD EXAMPLES

The following examples illustrate the use of the RECORD control statement.

Example A

This example shows a fixed-length record definition:

```
Column
↳2
 RECORD TYPE=F,LENGTH=(60,40,50)
```

The record length is modified in both the sort phase (to 40 bytes) and the final merge phase (to 50 bytes).

Example B

This example illustrates a variable-length record definition with modifications in both the sort phase and the final merge phase:

```
Column
↳2
 RECORD TYPE=V,LENGTH=(200,175,180,50,100)
```

The maximum record length in the input data set is 200 bytes. The sort phase modification reduces the maximum record length to 175 bytes. Five bytes are then added to each record in the final merge phase modification, making the maximum record length in the output data set 180 bytes. The minimum record length in the input data set is 50 bytes, and the most frequent record length (modal length) in the input data set is 100.

Example C

This example shows a RECORD control statement for an application in which record lengths are changed only in the final merge phase:

Column

→ 2

```
RECORD TYPE=F,LENGTH=(76,,50)
```

The omission of the l_2 value is indicated by two commas. In this case, the records handled by the sort phase are the same size as those in the input data set.

MODS CONTROL STATEMENT

The MODS control statement tells the sort/merge program which program modification exits, if any, are used by user-written routines. It also associates a particular routine with a particular sort/merge program exit and provides specifications for the modification routine. (Detailed information about sort/merge program exits is contained in the section "Program Modification.")

PARAMETERS AND OPTIONS

The format of the MODS control statement is shown in Figure 6. The statement definer -- MODS -- must be the first field in the statement.

The MODS control statement has only one operand type. The operand definer, signified by "exit" in the format example, may be any of the three-character values used to refer to sort/merge program exits; for example, if the control statement is used to activate exit E28, the operand definer is E28. The values associated with this operand are:

n
: is the name of the routine (member name if the routine is in a library).

  If the routine has been link edited previously, the name must be the same as the operand definer, e.g., E19.

m
: is the amount of main storage, in bytes, that the routine occupies.

s
: is either the name of the DD statement in the sort job step that defines the partitioned data set in which the routine is located, or SYSIN if the routine appears in the system input stream. If routines are in a concatenated data set, s for all the routines must be the ddname of the data set.

N
S
: are the parameters that indicate the linkage editor requirements of a user-written routine. If the routine was link edited previous to its use in a sort/merge application, the parameter N is specified to indicate no additional link editing is required. The parameter S is specified if the routine can be link edited separately from the other user-written routines in its phase. Absence of these parameters indicates the routine must be link edited together with the other routines in its phase that also require link editing. (See the topic "Bypassing the Linkage Editor" in the section "Program Modification" for details on how to design routines.)

PROGRAMMING NOTES

The following programming notes apply to the use of the MODS control statement:

- The amount of main storage needed for the user-written routine should be specified as accurately as possible. If an estimate must be made, it should be high. The sort/merge program must have this information to properly allocate main storage for its own use.
- A separate DD statement is required for each system library that contains user-written routines for execution with the sort/merge program.
- When user-written routines are supplied through the system input stream (SYSIN), they must be arranged in numerical order (E11 before E15).
- Private libraries may also be used to contain user-written routines. (The use of private libraries is described

```
                                N                                N
MODS  exit=(n1, m1, s1, S) (,...,exit=(n17, m17, s17,S)
```

Figure 6. MODS Control Statement Format

in the publication IBM System/360 Operating System: Job Control Language.)

MODS EXAMPLES

The examples in the following text illustrate the use of the MODS control statement. (Definitions of the exits used in these examples appear in the section "Program Modification.")

Example A

The control statement in this example associates user-written routines with two sort/merge program exits:

```
Column
  2
MODS E15=(E15,554,MODLIB,N),E35=(E35,
   11032,MODLIB,N)
```

Both routines are members of the library defined by the DD statement that has the ddname MODLIB. The member names of the routines are the same as the exit numbers with which the routines are associated, E15 and E35. The first routine is 554 bytes; the second is 11,032 bytes. The parameter N appears for both routines which indicates that they are designed so they do not require link editing.

Example B

In this example, the value s -- SYSIN -- causes the sort/merge program to look for the user-written routine in the system input stream:

```
Column
  2
MODS E17=(CLSE,348,SYSIN)
```

The routine -- CLSE -- is included in object form in the input stream with the job step that initiates operation of the sort/merge program. No fourth parameter appears, so this routine must be link edited.

END CONTROL STATEMENT

The appearance of the END control statement indicates the end of all the control and continuation cards for a sort/merge program application.

PARAMETERS AND OPTIONS

Figure 7 illustrates the format of the end control statement. There are no options.

```
END
```

Figure 7. END Control Statement Format

PROGRAMMING NOTES

The following programming notes apply to the use of the END control statement:

- The END control statement must be used whenever user-written routines or data required by these routines are included in the system input stream with sort/merge control statements.
- A continuation card following an END control statement is not allowed.

CONTROL STATEMENT COMPATIBILITY

The System/360 Operating System sort/merge program acts upon five of the eight control statement types used by System/360 sort/merge programs -- SORT, MERGE, RECORD, MODS, and END. The three remaining control statement types -- INPFIL, OUTFIL, and OPTION -- are used only by other System/360 sort/merge programs. The operating system sort/merge program recognizes INPFIL, OUTFIL, and OPTION as valid control statement types, but does not act upon them.

The information contained in INPFIL and OUTFIL control statements is supplied to the operating system sort/merge program in DD statements. The information contained in the OPTION statement is specified at system generation time.

The SORT, MERGE, RECORD, and END control statements used by the other System/360 sort/merge programs are acceptable to the operating system sort/merge program. Pa-

rameters not recognized by the operating system sort/merge program are ignored. However, because of differences in parameter specification, the MODS control statements used by other System/360 sort/merge programs are not accepted.

Control statements of the operating system sort/merge program may be used with other sort/merge programs; however, operands that are not accepted by the other sort/merge programs are invalid and may cause the program to be terminated.

This section tells the user how to assign the data sets necessary for sort/merge program operation and how to initiate execution of the sort/merge program.

ASSIGNING INTERMEDIATE STORAGE

The intermediate storage necessary to perform a sorting application may be assigned on either magnetic-tape or direct-access devices, but not on a mixture of both.

All direct-access devices used as intermediate storage for a given application must be of the same type.

IBM 2400 Series Magnetic Tape Units may be used for intermediate storage. The sort can operate with a mixture of 7-track and 9-track tapes. If the sort input data set is on 7-track tape, the intermediate storage and output data sets may be on any combination of 7-track and 9-track tape or may be on 2311 disks or 2301 drums. However, if any I/O device other than 7-track tape is used for the sort input data set, tape intermediate storage data sets must not be 7-track tapes.

Variable-length record formats cannot be handled only when 7-track tape is used for intermediate storage.

If 7-track tapes are assigned for either input or output, the data converter may be used only when 7-track tapes are not assigned for intermediate storage. When 7-track tapes are assigned for intermediate storage, the data conversion feature cannot be used, and the translation feature cannot be used for binary data.

Either of the following types of direct-access devices may be used as intermediate storage for a sort:

- IBM 2311 Disk Storage Drive.
- IBM 2301 Drum Storage Drive.

INTERMEDIATE STORAGE REQUIREMENTS

Guidelines for assigning the optimum amount of intermediate storage for a given application are contained in the section "Efficient Program Use."

The following formulas can be used to calculate the amount of intermediate storage needed for a given application and device type.

Tape

The following formula can be used to calculate the number of tape intermediate storage data sets (n) necessary to complete a tape sort for a given data set size:

$$n = 2x + 2$$

The variable x represents the number of volumes (when x is greater than 1) required to contain the input data set with a blocking factor equal to that used for intermediate storage by the sort. (An approximate sort blocking can be obtained from the timing estimates in Appendix B.)

When x is equal to 1 (the input data set can fit on one tape volume at sort blocking), the sort requires only three intermediate storage data sets for the application.

To sort a two-volume data set at sort blocking, six tapes are needed for intermediate storage. A three-volume data set requires at least eight tapes.

A maximum of 32 magnetic tape units may be used as intermediate storage. This maximum permits the sorting of a 15-volume data set.

Direct-Access

The following formula can be used to calculate the approximate number of tracks (T) required to complete a direct-access sort for a given data set size. This formula assumes the input data set is randomly ordered. If the data set tends to be ordered in reverse of the desired sequence, more intermediate storage is necessary; conversely, if the input data set tends to be ordered in the desired sequence, less intermediate storage is necessary.

$$T = \frac{S(N)}{k(N-1)} + 2N$$

where:

N
: is the number of intermediate storage areas.

S
: is the number of records in the input data set.

The value of k is obtained from the following formula:

$$k = \frac{B}{(L)}$$

where:

B
: is 3,600 for the IBM 2311 Disk Storage Drive and 20,400 for the IBM 2301 Drum Storage Drive.

L
: is the length, in bytes, of each record. For variable-length records, L is the maximum record length.

Only the integer portion of k is used for calculating T. The remainder, whatever its value, should be disregarded.

The factors listed below affect the efficiency with which the sort/merge program can use intermediate storage space assigned on a 2301 drum:

- As the amount of main storage assigned to the program increases, the length of intermediate sequences increases, and more of each track can be used.

- As the number of tracks per intermediate storage area increases, a greater percentage of each area can be used. To use the 2301 drum efficiently, assign as few areas as possible (never less than three) and make them as large as possible.

At least three intermediate storage areas must be made available to the sort. Each of these areas is defined as a separate data set. The smallest area must contain at least three tracks. Up to six areas, on up to six separate devices, may be used.

For additional information on assigning intermediate storage efficiently, see the section "Efficient Program Use."

DEFINING DATA SETS

The data sets necessary for sort/merge program operation are defined in the normal manner, following operating system conventions. Standard DD statement names (ddnames) are used to tell the sort/merge program which data sets it may use and what the data sets are to be used for. The ddnames recognized by the sort/merge program are:

DDNAMES	DATA SET USE
SORTIN	used as the input data set for a sorting application.
SORTIN01 - SORTIN16	used as the input data sets for a merging application.
SORTWK01 - SORTWK32	used as the intermediate storage data sets for a sorting application.
SORTOUT	used as the output data set for sort/merge program applications.
SORTMODS	used when user-written routines are included in the input stream.

DD STATEMENT REQUIREMENTS

The sort/merge program requires that certain parameters be included in the DD statements that define data sets used by the program. These parameters are summarized in Table 1; the parameter, the condition under which it is required by the sort/merge program, a summary of the information contained in the parameter (as it is related to the sort/merge program), and the value assumed if the parameter is not included (default value) are given. The information in Table 1 applies to the DD statement as used to define data sets for use by the sort/merge program; parameters and subparameters which do not apply are not discussed. A full description of other DD statement parameters and subparameters is contained in the publication IBM System/360 Operating System: Job Control Language.

Table 2 is a summary of the DCB subparameters that are required by the sort/merge program if the DCB parameter is used. A more detailed discussion of these and other DCB subparameters is contained in the publication IBM System/360 Operating System: Control Program Services.

Table 1. Summary of DD Statement Parameters Required by the Sort/Merge Program

PARAMETER	CONDITION UNDER WHICH REQUIRED	SUMMARY OF PARAMETER VALUE	DEFAULT VALUE
DSNAME	When the DD statement defines a labeled input data set (e.g., SORTIN), or when the data set being created is to be kept or cataloged (e.g., SORTOUT).	Specifies the fully qualified name or the temporary name of the data set.	If omitted, the system assigns a unique name.
DCB	When the data set is used as the input or output data set, or when 7-track tape is used for intermediate storage, unless the DCB information is contained in the standard label of the data set.	Specifies information used to fill the data control block (DCB) associated with the data set.	----
UNIT	When the input data set is neither cataloged nor passed, or when the data set is being created.	Specifies (symbolically or actually) the type and quantity of I/O units required by the data set.	----
SPACE	When the DD statement defines a direct-access data set.	Specifies the amount of space needed to contain the data set.	----
VOLUME	When the input data set is neither cataloged nor passed, or when the output data set is on direct access and is to be kept or cataloged.	Specifies information used to identify the volume or volumes occupied by the data set.	----
LABEL	When the default value is not applicable.	Specifies information about labeling and retention for the data set.	The system assumes standard labeling.
DISP	When the default value is not applicable.	Indicates the status and disposition of the data set.	If omitted, the system assumes (NEW, DELETE)

Table 2. Summary of DCB Subparameters Required by the Sort/Merge Program

SUBPARAMETER	CONDITION UNDER WHICH REQUIRED	SUMMARY OF SUBPARAMETER VALUE	DEFAULT VALUE
DEN	When the data set is located on a 7-track 2400-series tape unit.	Specifies the density at which the tape was recorded.	200 bpi
TRTCH	When the data set is located on a 7-track 2400-series tape unit.	Specifies the technique used to record 8-bit bytes on a 7-track tape.	Converter not used, translatcr not used, odd parity.
RECFM	When the DCB parameter is required.	Specifies the format of the records in the data set.	----
LRECL	When the DCB parameter is required.	Specifies the maximum length (in bytes) of the logical records in the data set.	----
BLKSIZE	When the DCB parameter is required and RECFM specifies blocked records.	Specifies the maximum length (in bytes) of the physical records in the data set.	----

Each DD statement type required by the sort/merge program is discussed in the following text. Examples showing the use of required DD statement parameters are given.

SORTIN DD Statement

For a sort, the SORTIN data set may be a previously created data set that may be cataloged or uncataloged; or it may be inserted by a user-written routine at exit E15 (see the section "Program Modification"). A merge input data set may not be inserted by a user-written routine. The SORTIN data set may not be a DD DUMMY.

SORTIN Example: This example shows DD statement parameters that could be used to define a previously cataloged input data set:

```
DSNAME=INPUT,DISP=(OLD,DELETE),
DCB=(,RECFM=FB,BLKSIZE=800,LRECL=80)
```

These parameters cause the system to search the catalog for a data set named INPUT (DSNAME parameter). When found, the data set is associated with the ddname SORTIN and used by the sort/merge program. The control program obtains the unit assignment and volume serial number from the catalog, and types a mounting message to the operator. The DISP parameter (OLD) indicates that the data set is cataloged. DISP also indicates that the data set should be deleted (DELETE) after the current job step. The DCB parameter indicates that the data set contains fixed-length blocked records (RECFM) with a physical block length of 800 bytes (BLKSIZE) and a logical record length of 80 bytes (LRECL). (The DCB parameter is not actually required because the data set has standard labels. The parameter is shown only for the purpose of illustration.)

Multi-reel Input: If the input data set is contained on more than one reel of magnetic tape, the VOLUME parameter of the SORTIN DD statement must contain the number of tape reels and their serial numbers. In the following example, the input data set is on three reels that have the serial numbers 75836, 79661 and 72945:

```
VOLUME=(,,,3,SER=(75836,79661,72945))
```

Merge Input Data Sets

For a merge, SORTIN01 - 16 are the ddnames used to identify the DD statements that define input data sets. SORTIN01 is the name of the first DD statement; SORTIN02 is the name of the second, etc.

The maximum block size and the maximum record length of all the data sets to be merged must be defined in the DD statement SORTIN01.

Note: The formats of all inputs to a merge must be homogeneous i.e., the RECFM and LRECL subparameters must each specify the same value for the input data sets. Mixtures of fixed-length and variable-length records or of blocked and unblocked records are not allowed. Also, fixed-length records must all be of the same length.

SORTOUT DD Statement

The SORTOUT DD statement must define all the characteristics of the output data set. The following example shows DD statement parameters that could be used to characterize an output data set:

```
|DSNAME=OUTPT,UNIT=2400,DISP=(NEW,CATLG),
|DCB=(,RECFM=FB,LRECL=90,BLKSIZE=900)
```

The DISP parameter indicates that the data set is unknown to the operating system (NEW) and that it should be cataloged (CATLG) under the name OUTPT (DSNAME parameter). The UNIT parameter specifies that the data set is on a 2400-series tape unit. The DCB parameter specifies a fixed-length blocked data set (RECFM) with a logical record length of 90 bytes (LRECL) and a physical block size of 900 bytes (BLKSIZE).

SORTWK DD Statement

Intermediate storage data sets may be contained on either tape or direct-access units. When direct-access space is assigned, only the primary allocation is used by the sort and it must be contiguous. SORTWK data sets on 7-track tape units cannot use the data conversion feature. The TRTCH subparameter must be supplied, and must not specify data conversion. The DEN subparameter must also be supplied to set the density of 7-track work tapes. If it is not, the system assumes a density of 200 bpi.

Example A: The following DD statement parameters could be used to define a tape intermediate storage data set:

```
|UNIT=2400,LABEL=(,NL)
```

These parameters specify an unlabeled data set on a 2400-series tape unit. Since the DSNAME parameter is omitted, the system assigns a unique name to the data set. The omission of the DISP parameter causes the system to assume that the data set is new and that it should be deleted at the end of the current job step.

Example B: The following DD statement parameters could be used to define a direct-access intermediate storage data set:

```
|UNIT=2311,SPACE=(TRK,(200),,CONTIG)
```

These parameters specify a disk (2311) data set with a standard label (LABEL parameter default value). The SPACE parameter specifies that the data set is to be allocated 200 contiguous tracks. The system assigns a unique name to the data set and deletes it at the end of the job step.

SORTMODS DD Statement

The SORTMODS statement is required if user-written routines are included in the system input stream. It must not be included if user-written routines are not used. If all user-written routines are located in libraries, DD statements defining the libraries must be included.

The SORTMODS DD statement must define a temporary partitioned data set large enough to contain all the user-written routines that appear in the input stream. The sort/merge program transfers user-written routines to the SORTMODS data set before they are link edited for execution.

The following DD statement parameters could be used to define a SORTMODS data set:

```
|UNIT=2311,SPACE=(TRK,(10,,3))
```

These parameters allot ten tracks of a 2311 disk to the SORTMODS data set. Space for three directory entries (there must be one for each routine in the input stream) is also requested.

Shared Data Sets

A single tape unit may be assigned to two sort/merge data sets when the data sets are one of the following pairs:

- The input data set and the first intermediate storage data set (SORTWK01).

- The output data set and an intermediate storage data set. (If this assignment is made, the user cannot specify which physical device is to contain his output data set.)

- The input data set and the output data set.

The pooling facility is used to associate the output data set with an intermediate storage data set.

The parameter in the following example could be used to associate the SORTIN data set with either the SORTWK01 data set or the SORTOUT data set. It appears in the DD statement for SORTWK01 or SORTOUT.

```
UNIT=AFF=SORTIN
```

The AFF subparameter of the UNIT parameter causes the system to place the data set on the unit occupied by the data set associated with the ddname following the subparameter (SORTIN, in this case).

PROGRAMMING NOTES

The following programming notes apply to the assignment of input, intermediate storage, and output data sets to the sort/merge program:

- When input to the sort/merge program is a concatenated data set, all data sets in the concatenation must have identical attributes. If the concatenated data sets do not have identical attributes, (RECFM and LRECL are the same) records will be lost. This loss causes the sort to terminate if an actual data set size is specified in the SIZE parameter of the SORT control card because of the ensuing record off condition.

- The ddnames for intermediate storage and merge input data sets must be numbered in ascending sequence. SORTIN01 must be first, SORTIN02 second, etc. No numbers may be skipped.

- If user-written routines change logical record lengths, the actual length of the records in the input and output data sets should be specified in the SORTIN and SORTOUT DD statements, and on the RECORD control statement, if the statement is used.

INITIATING PROGRAM EXECUTION

There are two ways to initiate sort/merge program execution:

- By sort/merge control statements and the necessary data definition statements in the system input stream. A cataloged procedure may be used to supply some job control statements.

- By ATTACH, LINK or XCTL system macroinstructions issued by another program.

USING THE SYSTEM INPUT STREAM

When sort/merge program execution is initiated by control statements in the input stream, it is treated as any other task being executed under operating system control. Job control language statements -- JOB, EXEC and DD -- must be used to communicate with the operating system and the sort/merge program.

A JOB statement is required for the job that initiates sort/merge execution; job steps may precede and follow the sort/merge program. An EXEC statement is required for each job step. The EXEC statement that introduces the sort/merge job step can initiate execution directly or through a cataloged procedure. DD statements are required to define data sets used by the sort/merge program, the system, and, if necessary, the linkage editor.

Figure 8 illustrates the order in which control statements and information should be presented in the input stream. The following list describes the entries in this figure:

1. The JOB statement should appear first in the input stream. It contains information required by the operating system.

2. Preceding job steps might appear here.

3. The EXEC statement appears next. Through this statement it is possible to invoke one of the two sort/merge cataloged procedures, SORT and SORTD, or to call the sort/merge program by its name, either SORT or IERRCO00. (The cataloged procedures are discussed below; their contents appear at the end of Appendix A of this publication.)

4. The DD statements that define data sets used by the sort/merge program follow the EXEC statement. These are

the SORTIN, SORTOUT and SORTWK statements. DD statements that define partitioned data sets containing user-written routines also appear here, ordered according to exit number. If the user-written routines are located in the input stream, the SORTMODS DD statement must be included. If no cataloged procedure is used, the SORTLIB and SYSOUT DD statements must be included; they describe data sets used by the system. Also, if the linkage editor is required and no cataloged procedure is used, the SYSPRINT, SYSLMOD, SYSUT1 and SYSLIN DD statements must be included.

5. This DD statement indicates that sort/merge control statements follow. It also indicates that user-written routines and their data may appear in the input stream.

6. Sort/merge control statements must follow the DD statement shown in 5.

7. The END statement marks the end of sort/merge control statements.

8. User-written routines, if used, appear next. They must be ordered according to exit number.

9. Input data (used by user-written routines), if any, must appear next.

10. This data delimiter must appear as shown.

11. Any following job steps appear here.

12. The sort/merge application is followed by the JOB statement for the next job or a NULL statement.

Cataloged Procedure SORT

This cataloged procedure is designed to be used for sort/merge applications having user-written routines that require link editing. It contains an EXEC statement to call the sort/merge program, and DD statements that define data sets used by the linkage editor and the system. The procedure is invoked by the EXEC statement in the input stream. The operand of this statement should be EXEC PROC (procedure) = SORT (name of the procedure), or EXEC SORT.

This cataloged procedure may be used for all sort/merge applications, but it is inefficient for those that do not have user-written routines requiring link editing, since it causes allocation of unnecessary linkage editor data sets.

Cataloged Procedure SORTD

This cataloged procedure should be used for applications that have no user-written routines, or have user-written routines that were previously link edited (the N parameter must appear on the MODS statement for each routine). It contains an EXEC statement and two DD statements that define

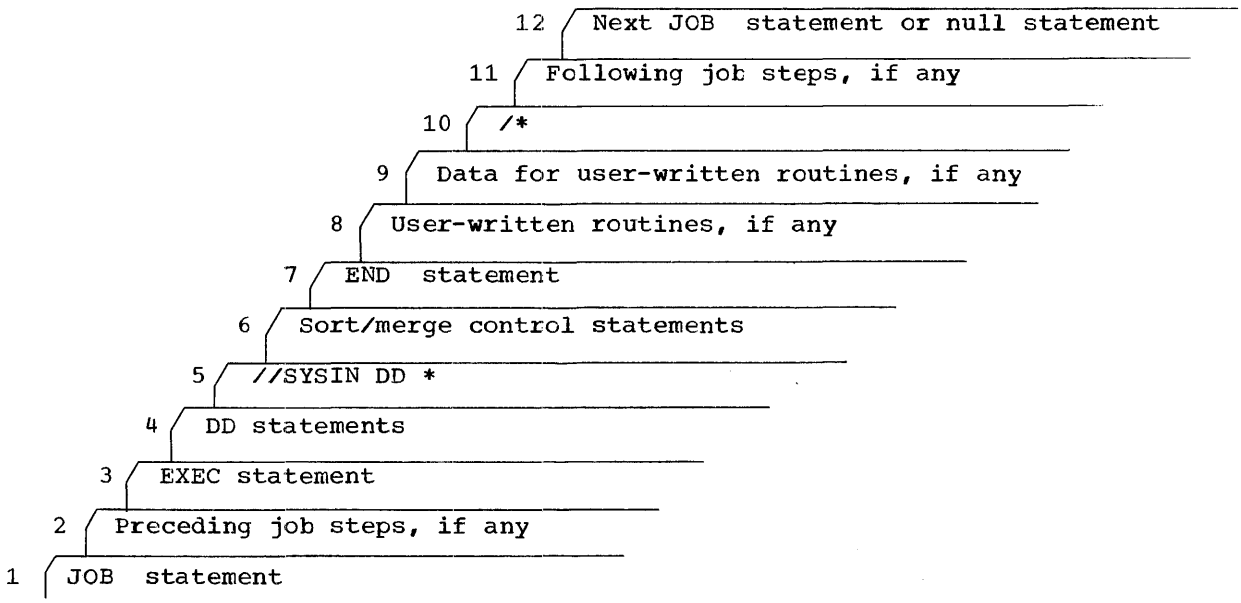


Figure 8. Order of Control Statements and Information

system data sets. To invoke the procedure, the operand EXEC PROC=SORTD or EXEC SORTD should appear on the EXEC statement in the input stream.

Since this cataloged procedure does not allocate linkage editor data sets, it should only be used for direct loading applications, i.e., those applications that do not use user-written routines that require link editing.

Initiating Execution Without a Cataloged Procedure

To use the sort/merge program without using a cataloged procedure, the EXEC statement must contain PGM=IERRCO00 or PGM=SORT in place of PROC=SORT or PROC=SORTD.

When using this method, it is necessary to supply additional DD statements. If user-written modification routines that require link editing are used, all of the following DD statements must be supplied:

SYSPRINT: Used by the linkage editor.

SYSLMOD: Used to contain output from the linkage editor.

SYSUT1: Used as a work area by the linkage editor.

SYSLIN: Used to contain input to the linkage editor.

SORTLIB: Contains load modules for the sort/merge program.

SYSOUT: Used as the system output data set.

If no user-written routines requiring link editing are used, only the last two DD statements, SORTLIB and SYSOUT, are required.

These DD statements are normally included in a sort/merge cataloged procedure at system generation. The information that must be included on each statement may be obtained from the cataloged procedures, which appears at the end of Appendix A of this publication. If an installation writes its own unique cataloged procedure, the information may be obtained from the list of cataloged procedures produced when the operating system is generated. If the system generation list is not available, a list of the cataloged procedures used by the sort/merge program can be obtained using the IEHLIST utility program. (The IBM-supplied cataloged procedures are named SORT; they are contained in the partitioned data set SYS1.PROCLIB.)

Input Stream Example

Figure 9 shows the job control language statements and the sort/merge control statements for a sorting application. Each card image in Figure 9 is discussed separately in the following text.

SORT001: The JOB control statement. The account number (A304F69) and programmer name fields are shown.

SORT002: The EXEC control statement that initiates execution of the sort/merge program.

SORT003: The DD statement defining the input to the sort/merge program. The omission of the DISP parameter causes the data set to be deleted following the current job step. The UNIT parameter indicates that the data set is on a 2400-series tape unit. Omission of the LABEL parameter causes the operating system to assume standard labels.

SORT004: The volume serial number of the input data set is 000010. Using this number and the DSNAME, the system is able to locate the data set and associate it with the ddname SORTIN.

SORT005: The input data set is a high density tape containing blocked fixed-length records. Logical records are 80 bytes long. The size of a physical record is 800 bytes. This information is optional, since it is in the standard label of this data set.

SORT006: The DD statement defining the output data set to be created by the sort/merge program. The name of the data set is OUTRECS.

SORT007: The output data set is a new data set. It will be cataloged.

SORT008: The output data set is on disk.

SORT009: The serial number of the volume on which the output data set is written.

SORT010: Six cylinders of space are to be allotted to the data set; each time the space assignment is depleted, an additional cylinder of space is to be added to the data set.

SORT011: The output data set contains fixed-length blocked records, with a logical record length of 90 bytes and a physical block length of 900 bytes.

SORT012: The DD statement defining a library that contains user-written routines. The name of the library is MODLIB.

SORT013: The library should not be deleted.

SORT014: The DD statement defining the first intermediate storage data set. The data set is on a 2400-series magnetic tape unit. It has no label.

SORT015: The DD statement defining the second intermediate storage data set.

SORT016: The DD statement defining the third intermediate storage data set.

SORT017: The DD statement defining the fourth intermediate storage data set.

SORT018: This DD statement defines the data set -- SYSIN -- that contains the sort/merge control cards for the application.

SORT019: The SORT control statement.

SORT020: The RECORD control statement.

SORT021: The MODS control statement.

SORT022: The delimiter statement signifies the end of the SYSIN data set.

USING ATTACH, LINK, OR XCTL

ATTACH, LINK, and XCTL macro-instructions can be used by a program already in operation to initiate operation of the sort; however, the sort/merge program does not allow a merge to be initiated in this manner. (For a full description of the ATTACH, LINK, and XCTL macro-instructions, see the publication IBM System/360 Operating System: Control Program Services. This publication also contains conventions for the passing of parameters.)

There are two differences between initiating sort operation in the input stream and initiating it by a macro-instruction. Sort DD statements must be supplied by the user when the sort is initiated by a macro-instruction. The information normally contained in sort/merge control statements is communicated to the sort in a parameter list and control statement images in main storage.

Supplying Needed DD Statements

When initiating sort/merge execution with ATTACH, LINK or XCTL, it is necessary to supply the following DD statements (normally supplied by a sort/merge cata-

```
//EXAMPLE  JOB (A304F69),PROGRAMMER                                  SORT001
//STEP1    EXEC PROC=SORT                                            SORT002
//SORTIN   DD   DSNAME=INPUT,UNIT=2400,                            X SORT003
//              VOLUME=SER=000010,                                 X SORT004
//              DCB=(,RECFM=FB,LRECL=80,BLKSIZE=800)                 SORT005
//SORTOUT  DD   DSNAME=OUTRECS,                                    X SORT006
//              DISP=(NEW,CATLG),                                  X SORT007
//              UNIT=DISK,                                         X SORT008
//              VOLUME=SER=000011,                                 X SORT009
//              SPACE=(CYL,(6,1)),                                 X SORT010
//              DCB=(,RECFM=FB,LRECL=90,BLKSIZE=900)                 SORT011
//USERLIB  DD   DSNAME=MODLIB,                                     X SORT012
//              DISP=(OLD,KEEP)                                      SORT013
//SORTWK01 DD   UNIT=2400,LABEL=(,NL)                                SORT014
//SORTWK02 DD   UNIT=2400,LABEL=(,NL)                                SORT015
//SORTWK03 DD   UNIT=2400,LABEL=(,NL)                                SORT016
//SORTWK04 DD   UNIT=2400,LABEL=(,NL)                                SORT017
//SYSIN    DD   *                                                    SORT018
 SORT      FIELDS=(2,5,CH,A),SIZE=E2000                             SORT019
 RECORD    TYPE=F,LENGTH=(80,,90)                                   SORT020
 MODS      E35=(CHNG1,1021,USERLIB)                                 SORT021
/*                                                                  SORT022
```

Figure 9. Sample Sorting Application

loged procedure) in the input stream with the job step that issues the macro-instruction that calls the sort:

SORTLIB: Contains load modules for the sort/merge program.

SYSOUT: Used as the system output data set.

The information that must appear on these statements may be obtained from the statements as they appear in the IBM-supplied cataloged procedures.

Passing Parameters to the Sort

The parameters passed to the sort consist of two control statement images -- SORT and RECORD -- in main storage, and the entry point addresses of two user-written routines (E15 and E35). These are the only user-written routines allowed when the sort/merge program is initiated by ATTACH, LINK or XCTL. These routines are part of the calling module. The control statement images are required; the user-written routines may be included at the user's option. The address field must contain zeros if the routines are not present.

A pointer to the parameter list must be placed in general register 1 before the control-passing macro-instruction is issued.

The parameter list is four bytes long beginning on a full-word boundary. The high-order bit in the high-order byte must contain a 1, and the rest of the high-order byte must contain zeros (X'80'). The remaining three bytes contain a pointer to a list of addresses used by the sort/merge program. This pointer points to the half-word boundary before the first full-word of the address list. This half-word contains (right adjusted in hexadecimal) the number of bytes in the address list, including four bytes for the optional sort name replacement field and four bytes for an optional main storage value, if they are present. The number of bytes in the address field shown includes the length of one these optional fields, if it is present.

The first address in the address list must begin on a full-word boundary. Each address is contained in the low-order three bytes of a full word. The format of the address list is as follows:

Unused	X'0020'
Starting address of SORT statement	
Ending address of SORT statement	
Starting address of RECORD statement	
Ending address of RECORD statement	
Address of routine for exit E15	
Address of routine for exit E35	
Optional Characters	
X'00'	Optional storage value

The starting and ending addresses of the SORT and RECORD control statement images are required parameters. The following rules apply when defining these images:

- The format rules for card statements apply, except a continuation character is not allowed if a SORT or RECORD control statement image extends beyond 71 characters; the images may be 351 bytes long. No comments are permitted.
- The first byte of each statement image must contain a blank character, and a blank must follow SORT and RECORD. No other blanks are allowed.

Entry-point addresses for user-written routines are optional. If an entry-point address is not used, a word of zeros must appear in its place in the list. (The exits are described in the section "Program Modification.")

Following the entry-point addresses the user can optionally specify four characters that replace the letters "SORT" in the ddnames of the standard DD statements that define the input, output, and intermediate storage data sets. This option must be chosen when the sort is initiated by ATTACH, LINK, or XCTL in a multiprogramming environment, and another sort/merge application appears in the same job step.

The user's four characters replace the letters "SORT" in references to the standard DD statements in the sort/merge modules. Any alphameric characters may be used, but the first must be alphabetic. If it is not, the characters are ignored and sort/merge module references remain unchanged. (For more information, see the

topic "Multiprogramming the Sort/merge Program" in the section "Efficient Program Use.")

Following the optional characters (or the entry-point addresses if the optional characters are not used) the user may specify the amount of main storage that the sort/merge program can use. The value specified here temporarily overrides the value specified at system generation time. For a discussion of the reasons for changing the storage value, see the topic "Altering Main Storage Allocation" in the section "Efficient Program Use".

The new value should appear, right justified, in the last three bytes of the field; it must be a binary number. The high-order byte must contain zeros. Since the sort/merge program requires a minimum of 12,000 bytes to operate, the new value may not be less than 12,000. If it is, the number 12,000 is chosen by default.

Passing Parameters With XCTL

When using XCTL to initiate the sort, special consideration must be given to the area where control information is stored. (Control information is the parameter list, address list, control statement images, modification routine addresses, and the optional characters.) This information should not reside in the module issuing the XCTL, because the module is frequently overlaid by the sort/merge program, thus destroying the control information.

Two methods are available for overcoming this problem. First, control information may reside in a task that attaches the module which issues the XCTL. Second, the module issuing the XCTL may first issue a GETMAIN macro-instruction and store control information in the main storage area obtained. This area is not overlaid when the XCTL is issued. The address of the control information in the area must be passed to the sort in general register 1.

The following text contains two examples. The first illustrates the passing of parameters to the sort. The second is an assembler-language coding example.

Example A

Figure 10 illustrates the passing of parameters to the sort.

General register 1 contains a pointer to the parameter list, which is at location 1000. The high-order bit in the word beginning at 1000 contains a 1.

The full word at location 1000 contains a pointer to the half-word preceding the first full word of the address list (location 1006). This half word contains, right adjusted in hexadecimal, the number of bytes in the address list (24 decimal).

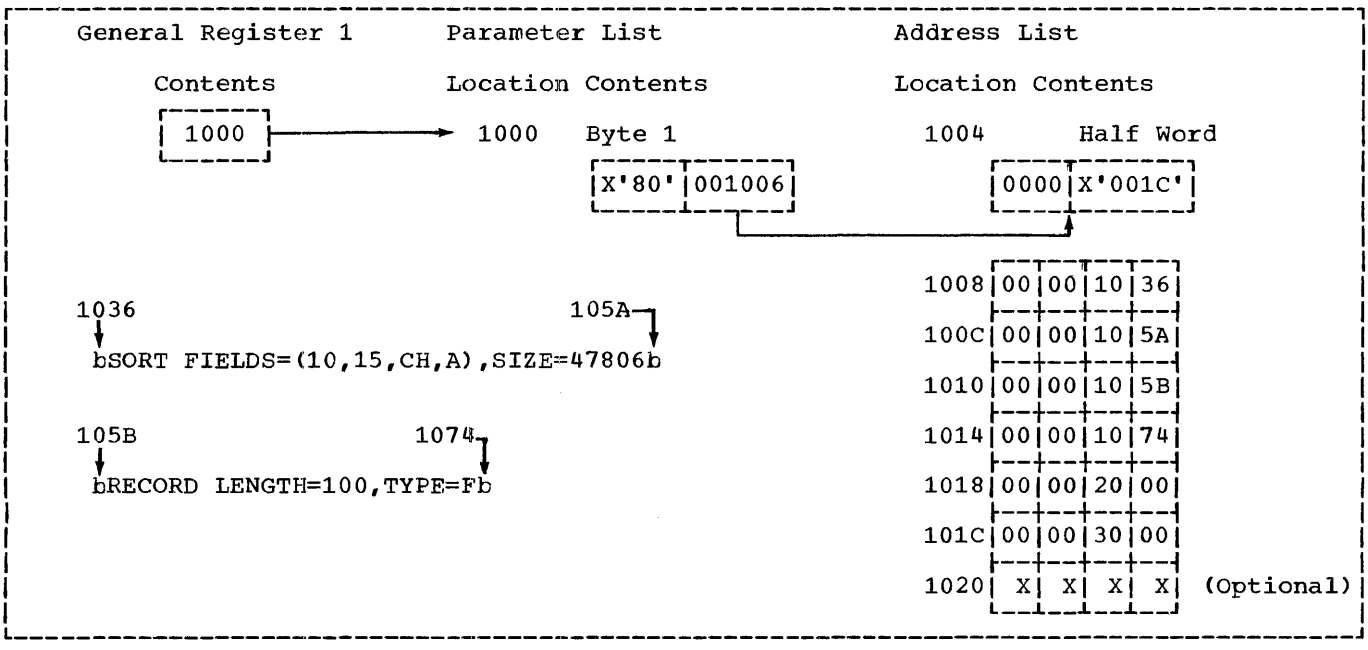


Figure 10. Passing Parameters to the Sort

The address list contains a pointer to the starting location (1036) and ending location (1059) of a SORT control statement, and the starting location (105A) and ending location (1073) of a RECORD control statement. (These statements are shown at the bottom left of the figure.)

The next two full words in the list contain the entry point addresses of a user-written routine for exit E15 (2000) and exit E35 (3000).

The last full word in the list may contain four characters represented by xxxx to replace the letters "SORT" in the ddnames of the standard DD statements.

No change is made to the amount of main storage allocated to sort/merge at system generation time.

The control statement images must be represented in EBCDIC. The symbol b in the figure stands for a blank character.

Example B

The following example shows, in assembler-language coding, how the parameters and card images in Example A could be generated and how control can be passed to the sort/merge program.

```
        LA      1,PARLST
        ATTACH  EP=SORT,MF=(E,(1))
        .
        .
        .
        CNOP    0,8
PARLST  DC      X'80'
        DC      AL3(ADLST)
        DC      X'0000'
ADLST   DC      X'001C'
        DC      A(SORTCD)
        DC      A(STCDED)
        DC      A(RCDCD)
        DC      A(RDCDED)
        DC      A(MOD1)
        DC      A(MOD2)
SORTCD  DC      C' SORT FIELDS=(10,15,CH,A),'
        DC      C'SIZE=4780'
STCDED  DC      C' '
RCDCD   DC      C' RECORD LENGTH=100,TYPE=F'
RDCDED  DC      C' '
        CNOP    0,8
        USING   *,15
MOD1    routine for exit E15
        .
        .
        .
        CNOP    0,8
        USING   *,15
MOD2    routine for exit E35
```

Programming Notes

The following programming notes apply to the use of ATTACH, LINK, and XCTL in initiating sort execution:

- The data sets necessary for sort program operation must be defined by the user, as specified earlier in this section.

- If exit E15 is activated, the sort/merge program ignores the SORTIN data set. The exit routine is responsible for passing all input records to the program. Similarly, the SORTOUT data set is ignored if exit E35 is activated. The exit routine at E35 is responsible for disposing of all output records. An address of zero is returned by the sort the first time these exits are used.

- When the sort finishes execution, control is passed back to either the user or the operating system, depending upon how the sort was invoked.

COMPLETION CODES

The sort/merge program returns a completion code to the operating system upon termination. This code may be interrogated by succeeding job steps. The codes are:

0 - Successful completion of sort/merge

16 - Unsuccessful completion of sort/merge

Successful Completion: When a sort/merge application has been successfully executed, a completion code of zero is returned to the operating system, and the sort terminates.

Unsuccessful Completion: If the sort, during execution, encounters an error that will not allow it to complete successfully, it returns a completion code of 16 to the operating system and terminates. (Such errors include an out-of-sequence condition or an uncorrectable I/O error.)

User-written routines can be executed during a sort/merge program execution to perform a variety of functions, such as deleting, inserting, altering, and summarizing logical records.

Control is passed to user-written routines at predesignated places in the executable code of the sort/merge program called sort/merge program exits.

Because these exits are located in particular program phases (and in one case, in a particular module), a general understanding of how the sort/merge program operates is prerequisite to understanding sort/merge program exits.

PROGRAM DESCRIPTION

The sort/merge program is a segmented program; that is, it is composed of parts that can operate independently. Generally, there are two levels of segmentation:

1. Phases -- large program components that accomplish a certain task.

2. Modules -- the independent routines of which phases are composed.

The sort/merge program is composed of five phases. All five phases are used for sorting applications, but only the first two and the last phases of the program are used for merging applications. The first two phases -- the definition and optimization phases -- are strictly initialization phases. Each of the remaining three phases -- the sort, intermediate merge, and final merge -- is divided into two components:

- An assignment component that initializes for the operation of the phase.

- A running component that performs the actual sorting or merging.

Figure 11 is a phase-level flowchart of the program. Each phase is explained in the following text.

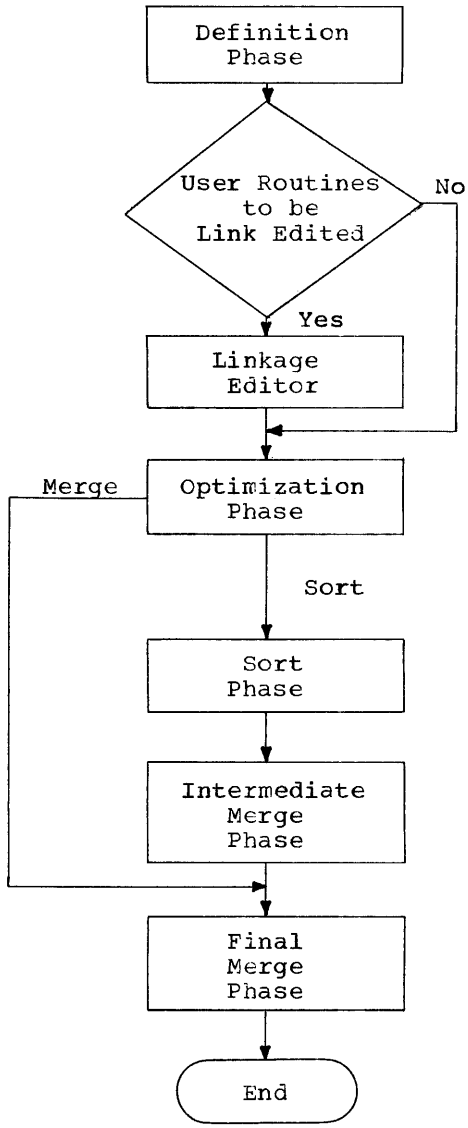


Figure 11. Phase-level Flowchart

DEFINITION PHASE

The definition phase reads and interprets sort/merge control statements and decides which phases, and which modules of each phase, should be used. This phase also decides which user-written routines, if any, must be link edited.

OPTIMIZATION PHASE

The optimization phase, using information obtained from the operating system and from DD statements, determines the optimum

method of using the CPU and I/O configuration available.

If needed, this phase also generates special routines to perform record comparisons. One of two routines -- the equals module or the extract module -- may be generated to make record comparisons. (Neither routine is used when sorting or merging is based on a single control field containing character data or binary data beginning on a byte boundary.) If one of these routines is used, it remains in main storage throughout execution of the program.

Equals Module

The equals module is used when there is more than one control field and all control fields contain character data or binary data beginning on a byte boundary. It is executed to resolve the collating of records when an equal comparison arises between two major control fields. This is done by comparing successive minor control fields until an unequal compare is made, thus determining the proper order of the two records. If all control fields are equal, the records are taken in the order which requires the least internal processing time.

Extract Module

The function of the extract module is to extract and group all of the control fields into one field so that a single compare instruction can be executed to collate the record.

The extract module is loaded for one of two reasons:

- If more than one control field is used and the equals module cannot be used to resolve collating.
- If specified by the user in either the SORT or MERGE control statement. (User specification is accomplished by taking the E option for the s parameters of the FIELDS operand. See the section "Control Statements," for further information.)

When the extract module is used, it is executed each time a logical record is processed. This is done to avoid carrying the extracted information with the records, which would increase I/O time and, therefore, total sort or merge time.

SORT PHASE

The job of the sort phase is to order the input data set into sequences and distribute these sequences onto intermediate storage data sets. The method of distribution is determined by the sorting technique being used.

If tape is being used as intermediate storage, the sequences may be put out in both ascending and descending order. This enables the intermediate merge phase, using the read-backward feature, to merge the sequences without rewinding tapes.

If direct-access intermediate storage is used, the sequences are distributed among the areas assigned to the program so that they may be merged in a minimum number of passes.

INTERMEDIATE MERGE PHASE

The intermediate merge phase is loaded and executed following completion of the sort phase. It performs successive merges of the strings produced by the sort phase. The merges are carried out from intermediate storage device to intermediate storage device, each successive merge decreasing the number of strings and increasing the average string length. When one more merge is required to create one long string (the output data set), control is given to the final merge phase.

FINAL MERGE PHASE

The final merge phase has two uses:

- It makes the final merge pass of a sorting application, thus creating the output data set.
- It merges the input data sets for a merging application to create the output data set.

Output from this phase can be on any output device supported by QSAM. After the execution of this phase, the sort system control component returns control to the operating system via the RETURN macro-instruction.

GENERAL INFORMATION

There are three types of exits available with the sort/merge program.

- Assignment component exits, one each for the sort, intermediate merge, and final merge phases.
- Running component exits, a number of which are associated with the running component of each program phase.
- A running component extract module exit.

User-written routines at assignment component exits are used to initialize other user-written routines at the exits in a phase's running component. This type of exit may be used to open any data sets needed by the user-written routines in a particular phase. The assignment components are overlaid and used as buffer areas by the running components. Any routines at the assignment component exits are also overlaid, unless they are link edited together with other routines in the phase.

Running component exits are used for a variety of purposes, including the deletion, summarization, insertion, or any other alteration to the logical records coming into or out of the phase. Routines at running component exits can also be used to correct some of the errors that may arise during execution of the sort/merge program, including I/O errors and exceeding Nmax. A running component exit can also allow the user to close any data sets used by the user-written routines in a particular phase.

The extract module exit is used to alter control fields before collating. One use for this exit is the normalization of floating-point control fields.

Figure 12 is a summary of the sort/merge program exits and their uses. The first digit of the exit number represents the phase in which the exit is located -- 1 for sort phase, 2 for intermediate merge phase, and 3 for final merge phase. The second digit represents the type of function that can be performed at the exit.

OPERATING CONSIDERATIONS

Two factors must be weighed when considering the use of sort/merge program exits:

- User-written routines occupy main storage that would otherwise be used for

Possible Use for Exit	Sort						Intermediate Merge					Final Merge					Extract
	E11	E15	E16	E17	E18	E19	E21	E25	E27	E28	E29	E31	E35	E37	E38	E39	E61
Assignment	X						X					X					
Nmax Error			X														
Logical Record Change		X						X					X				
Control Field Change																	X
Opening Data Sets	X						X					X					
Closing Data Sets				X					X					X			
Read Error Routine					X					X					X		
Write Error Routine						X					X					X	

Figure 12. Summary of Functions Permitted at Sort/Merge Program Exits

I/O buffers. The loss of buffer space is critical when the sort/merge program is operating in a small amount of main storage. By restricting buffer space, it is possible to make extra intermediate merge phase passes necessary.

- The execution of modification routines adds time to the overall sort/merge program execution time.

When sort/merge program exits are used, user-written routines must be associated with the appropriate sort/merge program exits, using the MODS control statement. (For further information, see the section "Control Statements.")

Notes: When the 18K Linkage Editor is used in the minimum amount of main storage, user-written routines are limited to 10 external references.

To provide the greatest flexibility in the use of modification exits, the sort/merge program passes control to the routines executed at these exits. The user, therefore, must assure the accuracy of his modification and the proper use of the exits. In particular, only valid return codes should be used.

BYPASSING THE LINKAGE EDITOR

User-written routines should be designed so they do not require link editing each time they are used in a sort/merge application. To save execution time by avoiding all use of the linkage editor during a sort/merge application, each user-written routine must meet the following requirements:

- It must exist as a load module on a library; its member name must be the same as its exit number, e.g., E16. The value s on the MODS statement that defines the routine must be the name of the DD statement which defines the library.
- It must have only one entry-point which is the module name.
- It must have no external references.
- All modules must be on the same library or must be defined as a concatenated data set with one ddname.

The parameter N should appear on the MODS statement for the routine to indicate it was previously link edited, and additional link editing is not required. This parameter must be specified for each routine that meets the requirements.

Another option is available to the routines at the assignment component exits, E11, E21, and E31. If these routines do not meet the requirements for bypassing the linkage editor, the user can still save execution time by designing them for separate link editing. The following are the requirements for separate link editing:

- Each routine must be a separate load module.
- The routine must contain no external references.
- One entry point must be the exit number.
- The routine must be overlaid after assignment time.

To indicate the routine is eligible for separate link editing, the parameter S should appear on the MODS statement.

If the routine is used to open data sets or to communicate with running component exit routines, separate link editing is not permitted, since the routine will contain external references.

When a user-written routine does not meet the requirements for bypassing the linkage editor or for separate link editing, no fourth parameter should appear on the MODS statement. The routine is then link edited together with all other routines in its phase that do not meet the requirements. In any phase, the user may mix routines that do not require link editing, routines that require separate link editing, and routines that must be link edited together.

LINKAGE CONSIDERATIONS

User-written routines may be placed either in a partitioned data set (library) or in the system input stream. The general assignment phase includes the name and location of user-written routines in the list of modules to be executed during each program phase. The user-written modules are loaded and executed with their associated program phase.

Each user-written routine must be assembled or compiled as a separate program. The same routine may appear at more than one sort/merge program exit, as long as it does not appear twice in any one program phase. In other words, the same read error routine may be used in all three program phases, but it cannot appear at more than one exit in any one phase.

Only one load module is allowed at a program exit. If more than one routine is needed at an exit, the routines must be assembled, compiled or link edited as one load module.

All the routines in a phase that require link editing may be placed in one partitioned data set member. The member must have an entry point for each of the routines activated. When routines are arranged in one member, their individual lengths as specified on the MODS statement are not important, but the sum of the lengths must be the total length of the module. All but one length can be zero, with the total member length specified for the remaining routine.

User-written routines must save and restore all general registers that are used at the modification exit.

The general registers used by the sort/merge program for linkage and communication of parameters follow operating system conventions. The registers used are:

- General register 1 -- This register is used to communicate the address of a parameter list to the called routine.
- General register 13 -- This register contains the address of an area, set aside by the sort/merge program, in which the user-written routine may save the contents of any general registers it needs for operation.
- General register 14 -- This register contains the address of the sort/merge program return point.
- General register 15 -- This register contains the address of the user-written routine. (It can be used as the base register by the user-written routine.) General register 15 is also used as a return-code register to communicate information to the sort/merge program. (A return code is a special bit structure placed in general register 15 before returning to the sort/merge program.)

The sort/merge program uses a CALL macro-instruction expansion to enter user-written routines; control can be returned to the sort/merge program through the use of the RETURN macro-instruction. The RETURN macro-instruction can also be used to set return codes when multiple actions are available at an exit. The SAVE macro-instruction can be used to save all general registers that are used by the user-written routine. If used the saved registers must be restored. This may be done using the RETURN macro-instruction.

All user-written routines must contain an entry point defined by an ENTRY or CSECT statement and use the sort/merge program exit number as the name of the entry point to the routine.

Examples

The CALL macro-instruction used by the sort/merge program to link to a user-written routine at the sort phase assignment component exit is written as follows:

```
      CALL    E11
```

This macro-instruction is expanded to form assembler language instructions and, when executed, places the return address in general register 14 and the user's entry point address in general register 15. The sort/merge program has already placed the register save area address in general register 13.

A user-written routine for the sort-phase assignment component exit could incorporate the following instructions:

```
        ENTRY   E11
        .
        .
        .
E11     SAVE    (5,9)
        .
        .
        .
        RETURN  (5,9)
```

This coding saves and restores the contents of general registers 5 through 9. The macro-instructions are expanded into the following assembler code:

```
        ENTRY   E11
        .
        .
        .
E11     STM     5,9,40(13)
        .
        .
        .
        LM      5,9,40(13)
        BR      14
```

If multiple actions are available at a sort/merge program exit, the action taken is communicated to the program by the return code set in general register 15. The following macro-instruction could be used to return to the sort/merge program with a return code of 12 in general register 15:

RETURN RC=12

(A full explanation of linkage conventions and the macro-instructions discussed in this section can be found in the publication IBM System/360 Operating System: Control Program Services.)

ASSIGNMENT COMPONENT EXITS (E11, E21, E31)

The assignment component of each sort/merge program phase has a program exit associated with it. These exits are used to perform other initialization functions for the user-written routines that operate with the running component of the phase.

The assignment component exit numbers assigned to each program phase are:

E11 -- Sort phase
E21 -- Intermediate merge phase
E31 -- Final merge phase

Linkage Conventions: Linkage conventions for assignment component exits are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E11	ENTRY E11 . . E11 SAVE (5,9) . . RETURN (5,9)

RUNNING COMPONENT EXITS

Each sort/merge program phase has a number of running component exits associated with it. Many of these exits perform the same function in each of the program's three phases. They are explained in the following text according to exit function.

LOGICAL RECORD CHANGE EXITS (E15, E25, E35)

The logical record change exits can be used to insert, delete, alter, or summarize records as they leave a program phase.

Exit E15

Exit E15 is used for inserting, deleting, shortening, lengthening, and otherwise altering records as they enter the program's sort phase. A user-written routine at this exit is executed each time a new record is brought into the phase. The address of a parameter list that contains the address of the new record is placed in general register 1. The parameter list starts on a full-word boundary and is one full-word long. The high-order byte of the word is not used. It is represented by XX in the figure below. The format of the parameter list is:

XX	Address of the New Record

When end-of-data set is reached on the input data set, the sort passes an address of zero in the parameter list. If there are no records in the input data set, the sort passes a zero address the first time the exit is used.

The action taken by the sort upon return from the user-written routine is based on the return code set in general register 15. The sort recognizes four such codes:

0 -- Alter or no action
4 -- Delete record
8 -- Do not return
12 -- Insert record

No Action: If no action is to be taken, the user-written routine places the address of the current input record in general register 1 and returns to the sort with a return code of 0 (zero).

Alter Records: To lengthen, shorten, or otherwise alter the current input record, the user-written routine must move the record to a work area, perform the modification, load the address of the modified record into general register 1, and return to the sort with a return code of 0 (zero).

Any alterations that change the physical size of a logical record should be communicated to the sort/merge program on a RECORD control statement. (See the section "Control Statements," for further information.)

Delete Records: To delete the current input record, the user-written routine returns to the sort with a return code of 4. Following a record deletion, the sort returns to the user-written routine with a new input record. An address need not be placed in register 1 when the 4 return code is issued.

Do Not Return: The sort keeps returning to the user-written routine until a return code of 8 is passed back to the sort. After this return, the exit is closed and not used again. An address need not be placed in register 1 when the 8 return code is issued.

This return code must be issued following end-of-data set on the input, unless the user is inserting records after end-of-data set.

Insert Records: The address of the record to be inserted before the current input record is placed in general register 1, and the user-written routine returns to the sort with a return code of 12.

Following a record insertion, the sort returns to the user-written routine without getting another input record. This allows the user-written routine to make more insertions if necessary.

Insertions can also be made following the last input record (after the sort places all zeros in the parameter list). The sort keeps returning to the user-written routine for more insertions until a return code of 8 is passed back to the sort.

Linkage Conventions: Linkage conventions for exit E15 are shown in the following table:

Code Used to Enter User-written Routine	Code Used to Return to Sort/Merge
LA 1,param CALL E15 . . param DC A(radrs)	ENTRY E15 . . E15 SAVE (5,9) . . LA 1,nwrec RETURN (5,9), RC=x

radrs is the record address passed by the sort
nwrec is the address returned to the sort
x is the return code

Exit E25

Exit E25 is used for summarizing or deleting records in the program's intermediate merge phase.

The addresses of two records are passed to the user-written routine as CALL macro-instruction parameters. These are addresses for:

- The record leaving the merge, which would normally follow the record in the output area.
- A record in an output area.

The address of a parameter list that contains the addresses of these two records is placed in general register 1. The parameter list starts on a full-word boundary and is two full-words long. The high-order bytes in both words contain zeros. The format of the parameter list is:

XX	Address of Record Leaving Merge
XX	Address of Record in Output Area

Each time a new intermediate merge output sequence is started, the first record of the sequence is placed in the output area. When the second record of the sequence leaves the merge, its address and the address of the record in the output area are passed to the user-written routine at exit E25. The sort does not allow the deletion of the record in the output area; therefore, the first record in any output sequence cannot be deleted.

If the record leaving the merge is deleted, the sort returns to the user-written routine with a new current record, leaving the same record in the output area. If the record leaving the merge is not deleted, that record takes the place of the record in the output area and the sort returns to the user-written routine with the address of the next record to leave the merge.

The action to be taken by the sort upon return from the user-written routine is based on the return code set in general register 15. The sort recognizes two such codes:

0 -- No action
4 -- Delete

No Action: If no action is to be taken, the user-written routine must load the address of the record leaving the merge

into general register 1 and return to the sort with a return code of 0 (zero).

Delete records: The record leaving the merge can be deleted by returning to the sort with a return code of 4. An address need not be placed in register 1 when a return code of 4 is issued.

Summarize records: Summarization may be accomplished by changing the record in the output area and then deleting the record leaving the merge. When the record leaving the merge is deleted, the sort returns to the user-written routine with a new record (leaving the same record in the output area),so that more summarization can take place. If summarization without deletion is required, it should be performed at exit E35, rather than at E25. In the intermediate merge phase, sequences may be produced in both ascending and descending order; each record may be processed one or more times during the phase.

The sort/merge program does not test for equal control fields before taking this exit. If the user wants to summarize records with equal control fields, he must test the fields himself.

Linkage Conventions: Linkage conventions for exit E25 are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
LA 1,param CALL E25 . . param DC A(rcara) DC A(otara)	ENTRY E25 . . E25 SAVE (5,9) . . LA 1,modrc RETURN (5,9), RC=x

rcara is the address of the record leaving the merge
otara is the address of the record in the output area
modrc is the address returned to the merge
x is the return code

PROGRAMMING NOTE

This programming note deals with the handling of status information by the user routine.

- The entire intermediate merge phase (including the E25 exit routine) will be reloaded into main storage for each merge pass. Thus, status information may not be retained within the exit routine; it must be carried in the records being merged.
- It may not be possible to summarize or delete all records desired at exit E25. Complete summarization occurs in Phase 3.

Exit E35

Exit E35 is used for summarizing, inserting, deleting, lengthening, shortening, and otherwise altering records as they leave the program's final merge phase.

The addresses of two records are passed to the user-written routine as CALL macro-instruction parameters. These are addresses for:

- The record leaving the merge, which would normally follow the record in the output area.
- A record in an output area.

A third parameter, which is used to control sequence checking, is also provided. The address of the parameter list is placed in general register 1. The parameter list starts on a full-word boundary and is three full-words long. The high-order bytes of the first two full-words are not used. The format of the parameter list is:

XX	Address of Record Leaving Merge
XX	Address of Record in Output Area
00 00 00	Sequence Check Switch

The address of the record in the output area is zero the first time the user-written routine is entered. At this time, the user can insert records at the beginning of the output data set. The address of the record leaving the merge is zero after the last record in the output data set has been processed. At this time, the user can insert records at the end of the output data set. When there are no

records in the input data set, both addresses are zero the first time the user-written routine is entered.

If the record leaving the merge is deleted, the sort returns to the user-written routine with a new record, without placing another record in the output area. If the record leaving the merge is not deleted, it takes the place of the record in the output area and the phase returns to the modification routine with the next record leaving the merge.

The sequence check switch is tested by the final merge phase before performing each sequence check on records being written on the output data set. If the word contains all zeros, the sequence check is performed. If the low-order byte of the word contains a 4, the sequence check is not performed. This switch, which is initially set to zeros, may be set and reset according to the needs of the user-written routine at exit E35. For example, if the user is altering control fields within records which would not collate properly in the output, the sequence check for that record should be eliminated.

The action to be taken by the merge upon return from the user-written routine is based on the return code set in general register 15. The merge recognizes four such codes:

```
 0 -- Alter or no action
 4 -- Delete record
 8 -- Do not return
12 -- Insert record
```

No Action: If no action is to be taken, the user-written routine must load the address of the record leaving the merge into general register 1 and return to the merge with a return code of 0 (zero).

Alter Records: To lengthen, shorten, or otherwise alter the record leaving the merge, the user-written routine must move the record to a work area, perform the modification, load the address of the modified record into general register 1, and return to the merge with a return code of 0 (zero).

All record alterations that change the physical size of the logical record should be communicated to the sort/merge program by a RECORD control statement. (For further information, see the section "Control Statements.")

Delete Records: The record leaving the merge can be deleted by returning to the merge with a return code of 4. An address need not be placed in register 1 when a return code of 4 is issued.

Do Not Return: The merge keeps returning to the user-written routine until a return code of 8 is passed back to the merge. After this return, the exit is closed and not used again. An address need not be placed in register 1 when the 8 return code is issued.

This return code must be issued when an address of zero is passed as the address leaving the merge unless the user is inserting records at the end of the output data set.

Insert Records: The address of the record to be inserted is placed in general register 1, and the user-written routine returns to the merge with a return code of 12.

Following a record insertion, the merge returns to the user-written routine without changing the record leaving the merge. This allows the user-written routine to make more insertions, if necessary. The collating sequence of records that are inserted must be maintained by the user. The sort/merge program does not perform a sequence check of records that are inserted. However, when the record leaving the merge is deleted and a new record inserted, the sequence check is performed.

Insertions can also be made following the last output record (to signify the end of the output data set the merge places all zeros in the first address of the parameter list). The merge keeps returning to the user-written routine for more insertions, until a return code of 8 is passed back to the merge.

Summarize Records: Summarization is accomplished by changing the record in the output area and then, if desired, deleting the record leaving the merge. When this is done, the merge returns to the user-written routine with a new record (the same record is left in the output area), so that more summarization can take place. If the record leaving the merge is not deleted, that record takes the place of the record in the output area and the merge returns to the user-written routine with a new record.

As with exit E25, the user must check for equal control fields.

Linkage Conventions: Linkage conventions for exit E35 are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
LA 1,param CALL E35 . . param DC A(rcara) DC A(otara) DC A(0)	E35 ENTRY E35 SAVE (5,9) . . MVI 11(1), . X'04' . LA 1,nwrec RETURN (5,9), RC=x
rcara is the address of the record leaving the merge otara is the address of the record in the output area nwrec is the address returned to the merge x is the return code	

NMAX ERROR EXIT (E16)

A user-written routine at exit E16 is entered when Nmax is exceeded during execution of the sort phase. (Nmax is the calculated estimate of the maximum number of input records that the sort can handle in a given amount of main and intermediate storage.)

The user-written routine at this exit may choose among three actions to be taken by the sort:

- Sort the records currently in the sort phase and continue the program with only part of the input data set.
- Continue sorting and attempt to complete the sort with the intermediate storage space which is actually available. (Enough space may be available to allow the program to complete processing. If enough is not available, the program generates a message and terminates.)
- Terminate the program.

The action to be taken is communicated to the sort by one of the following return codes:

0 -- Sort current records
4 -- Continue with available storage
8 -- Terminate the program

Linkage Conventions: Linkage conventions for this exit appear in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E16	ENTRY E16 . . E16 RETURN RC=x
x is the return code	

PROGRAMMING NOTE

- When input is variable-length records, Nmax is calculated using the maximum record length. Therefore, Nmax tends to be lower than the actual number of records the program can handle.
- If input data has no natural ordering, and if direct-access devices are used for intermediate storage, Nmax tends to be larger than the number the program can handle.
- Nmax is dynamically recalculated during the sort phase, and the final value may be less than the original estimate.

EXITS FOR CLOSING DATA SETS (E17, E27, E37)

User-written routines at these exits, which are executed once at the end of the phase with which they are associated, can be used to close any data sets used by other user-written routines that operate with the phase. They can also be used to perform any housekeeping functions associated with other user-written routines in the phase.

The phase with which each exit is associated is:

E17 -- Sort phase
E27 -- Intermediate merge phase
E37 -- Final merge phase

Linkage Conventions: The linkage conventions used with these exits appear in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E17	ENTRY E17 . . E17 CLOSE . . RETURN

READ/WRITE ERROR ROUTINES

The exits described in the following text may be used to incorporate user-written or installation-provided I/O error correction routines into the sort/merge program. Correction procedures are standard throughout the program. The parameters passed by the sort/merge program to a synchronous error routine when an uncorrectable I/O error is encountered are the same as those passed by QSAM. The information passed to the user's synchronous error routine is given in the following list:

General Register 0: This register always contains X'10' in the high-order byte. The remaining three bytes contain the address of the input/output block (IOB) associated with the error, as follows:

X'10'	IOB address

General Register 1: The high-order byte of this register always contains zeros. The remaining three bytes contain the address of the data control block (DCB) associated with the error, as follows:

00	DCB address

General Register 14: This register contains the return address of the sort/merge program.

General Register 15: This register contains the address of the user's synchronous error routine.

The user-written routines that process read or write error conditions may be located at the exits themselves or may reside permanently in main storage as part of the installations standard error handling procedures. The routines at these exits reside in main storage with the running portion of the sort or merge, but are executed once during the assignment portion of the phase. (E28 and E29 are reloaded and executed for each pass of the intermediate merge phase.)

Read Error Exits (E18, E28, E38)

A user-written routine at one of these exits may pass a parameter list containing the specifications for three data control block (DCB) fields -- SYNAD, EXLST, and EROPT -- to the sort/merge program. A user-written routine at exit E18 may pass a fourth DCB field -- EODAD -- to the sort/merge program. Any or all of these fields may be filled by the user-written routine.

The phase with which each exit is associated is:

E18 -- Sort phase
E28 -- Intermediate merge phase
E38 -- Final merge phase

These exits are first entered during the assignment component of each phase, so that the sort/merge program may obtain the parameter lists. The exits are entered again during the running components, at the points indicated by the options in the parameter lists. For example, if the EXLST option is chosen for exit E18, the sort/merge program enters E18 at its entry point during execution of the sort phase assignment component; the parameter list, including the EXLST address, is picked up at this time. During the running component, the exit is entered at the EXLST address when the input data set is opened.

The DCB fields are passed to the sort/merge program in a parameter list, the address of which is placed in general register 1 before the user-written routine returns to the sort/merge program. The parameter list must begin on a full-word boundary and be a whole number of full-words long. The high-order byte of each word contains a character code that identifies the parameter. Any word may be omitted. A word of all zeros signifies the end of the list. The format of the list is:

BYTE 1	BYTE 2	BYTE 3	BYTE 4
01	SYNAD field		
02	EXLST field		
03	0	0	EROPT
04	EODAD field		
00	0	0	0

A full description of these DCB fields can be found in the publication IBM System/360 Operating System: Control Program Services.

These fields are:

SYNAD: The SYNAD field contains the location of a user-written read synchronous error routine. This routine is entered only after the operating system has tried unsuccessfully to correct the error. It should be assembled as part of the user's modification routine at the read error exit. When the routine receives control, it should not store registers in the save area pointed to by general register 13.

EXLST: The EXLST field contains the location of a list which contains pointers to various user-written routines for user label checking and other functions not performed by data management. This list and the routines to which it points should be included in the user's modification routine at the read error exit.

EROPT: The EROPT code allows the user to specify what action should be taken if an uncorrectable input error is encountered. The three possible actions and the codes with which they are associated are:

x'80' -- Accept the record (physical block)
x'40' -- Skip the record
x'20' -- Terminate the program

If this parameter is included, one of these codes must appear in the low-order byte of the word. Bytes 2 and 3 of the word must contain zeros.

When the EROPT option is used, the SYNAD field (and the EODAD field of exit E18) must contain either of the following:

- The address of the user-written read synchronous error routine (or end-of-file routine in the EODAD field). These must be addresses within the modification routine.
- If no routines are provided, the fields must contain a X'01' in byte 4; bytes 3 and 2 must contain zeros. The instruction DC AL3(1) may be used to set up the field.

EODAD: The EODAD field is the address of user-written end-of-file routine. This parameter may be specified at exit E18 only. If it is included, the end-of-file routine should be included in the user's modification routine at the read error exit. This is used only for the SORTIN data set.

Linkage Conventions: Linkage conventions for these exits are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E18	ENTRY E18 . . E18 LA 1,parm RETURN CNOP 0,4 parm DC X'01' DC AL3(ser) DC X'02' DC AL3(lst) DC X'03' DC XL3(x) DC A(0) . . ser error routine . . lst address list

ser refers to the read synchronous error routine
lst refers to the EXLST address list
x is EROPT code

Write Error Exits (E19, E29, E39)

A user-written routine at one of these exits may pass a parameter list containing the specifications for two DCB fields -- SYNAD and EXLST.

The phase with which each exit is associated is:

E19 -- Sort phase
E29 -- Intermediate merge phase
E39 -- Final merge phase

These exits are first entered during the assignment component of each phase so that the sort/merge program may obtain the parameter lists. The exits are entered again during the running components, at the points indicated by the options in the parameter lists.

The DCB fields are passed to the sort/merge program in a parameter list, the address of which is placed in general register 1 before the user-written routine returns to the sort/merge program. The parameter list must begin on a full-word boundary and be a whole number of full-words long. The high-order byte of each word contains a character code that identifies the parameter. Either word may be omitted. A word of all zeros signifies the end of the list. The format of the list is:

BYTE 1	BYTE 2	BYTE 3	BYTE 4
01	SYNAD field		
02	EXLST field		
00	0	0	0

A full description of these DCB fields can be found in the publication IBM System/360 Operating System: Control Program Services. These fields are:

SYNAD: The SYNAD field contains the location of a user-written write synchronous error routine. This routine is entered only after the operating system has unsuccessfully tried to correct the error. It should be assembled as part of the user's routine at the write error exit.

EXLST: The EXLST field contains the location of a list that contains pointers to various user-written routines for user label checking and other functions not performed by data management. This list and the user-written routines to which it points should be included in the user's modification routine at the write error exit.

Linkage Conventions: Linkage conventions for these exits are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E19	ENTRY E19
	.
	.
	E19 LA 1,parm
	RETURN
	CNOP 0,4
	parm DC x'01'
	DC AL3(ser)
	DC x'02'
	DC AL3(lst)
	DC A(0)
	.
	.
	ser error routine
	.
	.
	lst address list

ser refers to the write synchronous error routine
lst refers to the EXLST address list

CONTROL FIEID MODIFICATION EXIT (E61)

A user-written routine at this exit can be used to lengthen, shorten, or alter any control field within a logical record. Control fields that are to be altered at this exit must be specified by the E option for the s parameters of the SORT or MERGE control statement. (See the section "Control Statements" for further information.) A user-written routine at exit E61 is entered each time one of the specified control fields is encountered.

The user should be familiar with the standard data formats used in System/360 before modifying control fields.

This exit is loaded with the running portion of each phase; it is associated with the extract module.

When the control fields are passed to the user-written routine, they have already been moved to an extract area. Because of internal manipulation by the sort/merge program, control fields appear in the extract area in the following formats:

Binary: Unchanged.

Character: Unchanged.

Fixed-point: The sign bit is inverted.

Positive floating-point: The sign bit is inverted.

Negative floating-point: The sign bit is inverted and the numeric portion of the number is in one's complement notation.

Packed decimal: The sign is considered a separate control field; it is inverted and placed before the numeric portion of the number. If the records are to be ordered in descending sequence, the numeric portion appears in one's complement notation. For ascending sequence, the numeric portion is unchanged.

Unpacked decimal: The control field is converted to packed decimal and treated as above.

For all fields except binary, the number of bytes passed to the user-written routine is equal to the final length specified in the m parameters of the SORT or MERGE control statement. The field returned to the sort/merge program must contain the same number of bytes.

All binary fields passed to the user-written routine contain a whole number of bytes. If a binary field does not begin and end on a byte boundary, the bits in the first and/or last byte that are not occupied by the control field are set to zeros in the extracted field.

The parameter list passed to the user-written routine (the address of which is placed in general register 1) begins on a full-word boundary and is two full-words long. It contains the number (in hexadecimal) of the control field in the low-order byte of the first word, and the address of the control field in the three low-order bytes of the second word, as follows:

BYTE 1	BYTE 2	BYTE 3	BYTE 4
00	00	00	01-0C
00	Control Field Address		

The user-written routine operates on the control field while it is in the extract area. When modification is complete, a return is made to the sort/merge program.

The user-written routine cannot physically change the length of the control field. If the length must be increased for collating purposes, the final length must be specified in the m parameter of the SORT or MERGE control statement. If, for collating purposes, the control field is to be shortened, the field passed back to the sort/merge program must be padded to the specified length before returning.

Upon return from this exit, the modified control field is collated in absolute ascending order.

Linkage Conventions: Linkage conventions for exit E61 are shown in the following table:

Code Used to Enter User-Written Routine	Code Used to Return to Sort/Merge
CALL E61	ENTRY E61 . . E61 SAVE (5,9) . . RETURN (5,9)

This section contains information to aid a user to achieve efficient use of the sort/merge program. The subjects covered are:

- Supplying information that optimizes program operation.
- Executing the sort/merge program in a multiprogrammed environment.
- Assigning intermediate storage.

SUPPLYING INFORMATION TO THE PROGRAM

Information supplied to the sort/merge program by a user aids the first two phases of the program to produce a fast, efficient sort or merge. When information, such as data set size and record format, is not supplied to the program, the first two program phases must make assumptions, which, if incorrect, lead to inefficiency.

DATA SET SIZE

The most important information a user can supply to the sort/merge program is an accurate data set size, using the SIZE operand of either the SORT or MERGE control statement. The exact number of records, if known, or an estimate that is as close as possible, should be given.

An accurate data set size allows the sort/merge program to make most efficient use of both main and intermediate storage. Performance is impaired if an accurate size is not supplied.

INPUT BLOCKING CONSIDERATIONS

Blocking input records improves sort/merge performance. Large core sizes allow larger blocks; small blocks should be used with large records.

RECORD FORMAT

When variable-length records are processed, a full description of the records in the input data set should be supplied to the program. This information allows the program to calculate the optimum buffer size for the particular data set.

The maximum length, minimum length, and modal length of a variable-length data set can be specified in a RECORD control statement.

SYSTEM GENERATION OPTIONS AND REQUIREMENTS

When the operating system for an installation is generated, a limit is placed on the amount of main storage that can be used by the sort/merge program. Several sort/merge program options are also available when the system is generated. System generation is described in the publication IBM System/360 Operating System: System Generation.

LIMITING MAIN STORAGE

At system generation, the user should specify the maximum amount of main storage to be used by the sort/merge program. If this specification is not made, the program assumes a maximum of 15,500 bytes of main storage for execution. The sort/merge program requests 12,000 bytes, leaving 3,500 for system functions.

Performance improves significantly as the sort/merge program is given more main storage. Approximately 44K bytes of main storage are required for efficient execution, and performance increases as more main storage is available.

The maximum amount of main storage that can be made available to the sort/merge program can be determined by subtracting the amount of storage required for system functions from the total amount available. The amount of main storage needed for execution of various operating system components is given in the publication IBM System/360 Operating System: Storage Estimates. The formula that may be used to calculate the maximum amount of main storage is given in the publication IBM System/360 Operating System: System Generation.

ALTERING THE MAIN STORAGE ALLOCATION

It is possible to override the amount of main storage which was specified at system generation time. This ability is useful when a sort/merge application is run in a multiprogramming environment. By reducing the amount of main storage allocated, sort/merge performance is intentionally impaired so that other programs can have the storage they need to operate simultaneously. By increasing the allocation, large sort/merge applications can operate efficiently at the expense of other jobs sharing the multiprogramming environment.

Changing the main storage allocation is done with the PARM parameter of the EXEC statement. The parameters should be written as follows: PARM='CORE=xxxxxx', where xxxxxx represents the main storage value the user wishes to operate with. The value xxxxxx cannot be less than 12,000, and at this value some combinations of I/O devices and record lengths may make a successful sort impossible.

An EXEC statement using this option might appear as follows:

```
//STEP  EXEC   SORT,PARM='CORE=025000'
```

The main storage value is changed only for the current job; afterwards, the value reverts to the one specified at system generation time.

SORT/MERGE PROGRAM OPTIONS

At system generation, the sort/merge program facilities required by an installation can be requested. Selecting only the required program facilities conserves library space. The user should note that an attempt to execute an option not selected causes abnormal termination of the sort/merge program. For example, if only a variable-length record sort has been generated, fixed-length records cannot be sorted.

The following list is a summary of the sort/merge facilities that can be included when the program is generated:

- Sort or merge fixed-length records.
- Sort or merge variable-length records.
- Sort or merge records over 256 bytes long.
- Operate with all allowable intermediate storage devices.
- Sort or merge multiple control fields.
- Use sort/merge program exits.
- Print non-critical program-generated messages.

MULTIPROGRAMMING THE SORT/MERGE PROGRAM

The following factors must be considered when executing the sort/merge program with other programs:

Since the sort/merge program may use many I/O devices for input, output, and intermediate storage, it should be assigned a relatively high priority to assure that devices are assigned and used. Otherwise, I/O devices may be tied up while the sort/merge program is waiting to gain control of the central processing unit.

The sort/merge tends to be I/O limited; therefore, it is better to multiprogram the sort/merge program with programs that are process limited.

When the sort is initiated by ATTACH, LINK, or XCTL in a multiprogramming environment, and another sort/merge application is executing, the standard ddnames must be modified so that they are unique. Modification is done by specifying four characters in the parameter list passed to the sort/merge program. These characters replace the letters "SORT" in the standard ddnames. (For more information, see the topic "Passing Parameters to the Sort" in the section "Program Operation.")

INTERMEDIATE STORAGE ASSIGNMENT

The sort/merge program operates efficiently when at least two selector channels are available for intermediate storage. A tape switching device also improves program performance, if the device is connected so that two channel paths exist between each device and the central processing unit running the sort/merge program.

When a small amount of intermediate storage is assigned to the program, more intermediate merge phase passes are required because the number of sequences that can be merged at one time is small.

Likewise, when a small amount of main storage is assigned to the program, more intermediate merge phase passes become necessary because the number of records that can be sorted internally is small,

and more sequences are produced. (A similar condition tends to occur when many intermediate storage data sets are assigned to the program, because the buffer space necessary to handle the data sets limits the amount of main storage that can be used for internal sorting.)

ASSIGNING DIRECT-ACCESS INTERMEDIATE STORAGE

Efficient use of devices, areas, and channels improves sort/merge performance. If UNIT=2311 or 2301 is specified on the DD statements that define intermediate storage data sets, the sort/merge program assigns areas, and some optimization occurs automatically. But maximum performance is achieved when the user follows these recommendations:

- Use as many physical devices as are available. (If more than one data set is placed on a disk, the data sets should be located as close together as possible to minimize arm movement.
- Use channel overlap when possible.
- Assign as few data sets as possible.
- Assign data sets of similar sizes.

Assigning more than the minimum number (three) of direct-access intermediate storage data sets decreases program efficiency, unless the data sets are assigned to different physical devices. The sort can handle a larger input data set if the maximum number (six) of direct-access data sets are assigned, but to preserve efficiency they should be assigned to six separate devices.

For example, if a 100-track area is available on each of three disk drives, the maximum number of records can be handled by defining six data sets, each 50 tracks long, two on each device. Although the maximum number of records is handled by this assignment, efficiency is reduced. If the size of the input data set permits, efficiency can be gained by defining fewer areas. Maximum efficiency can be achieved by assigning three 100-track data sets, each on a different device.

Figure 13 shows a method for specifying channel overlap. The SEP parameter on the SORTWK01, SORTWK03, and SORTOUT DD statements requests the Operating System to assign these data sets to a channel other than the one assigned to the SORTIN data set. The AFF parameter on the SORTWK02 and SORTWK04 DD statements requests a channel that is different than the channel assigned to the SORTWK01, SORTWK03, and SORTOUT data sets. The channel assigned to SORTWK02 and SORTWK04 may be the same as the one assigned to SORTIN, but it will not be the same as the one assigned to SORTWK01, SORTWK03, and SORTOUT.

The operating system will honor these channel assignment requests when the necessary channel and device resources are available. If the requests cannot be filled, the system assigns channels according to the resources it has. Therefore, the user should always specify channel overlap.

ASSIGNING TAPE INTERMEDIATE STORAGE

The tables in Appendix C can be used as guide lines for assigning tape intermediate storage.

Each table gives the most efficient number of intermediate storage data sets for a given logical record length and input blocking factor.

```
//SORTIN   DD  DSNAME=INPUT,VOLUME=SER=000001,UNIT=2311,DISP=(OLD,KEEP),    X
//             DCB=(,RECFM=FB,LRECL=80,BLKSIZE=3200)
//SORTWK01 DD  DSNAME=WORK1,VOLUME=SER=000002,UNIT=2311,                    X
//             SEP=SORTIN,SPACE=(TRK,(15),,CONTIG)
//SORTWK02 DD  DSNAME=WORK2,VOLUME=SER=000003,UNIT=2311,                    X
//             AFF=SORTIN,SPACE=(TRK,(15),,CONTIG)
//SORTWK03 DD  DSNAME=WORK3,VOLUME=SER=000004,UNIT=2311,                    X
//             SEP=SORTIN,SPACE=(TRK,(15),,CONTIG)
//SORTWK04 DD  DSNAME=WORK4,VOLUME=SER=000005,UNIT=2311,                    X
//             AFF=SORTIN,SPACE=(TRK,(15),,CONTIG)
//SORTOUT  DD  DSNAME=OUTPUT,VOLUME=SER=000006,UNIT=2311,DISP=(NEW,KEEP),   X
//             DCB=(,RECFM=FB,LRECL=80,BLKSIZE=3200),                       X
//             SEP=SORTIN,SPACE=(TRK,(50),,CONTIG)
```

Figure 13. DD Statements Illustrating Channel Overlap

The following terms and phrases are defined as they are used in this publication.

ascending sequence: A sequence of records such that the control word of each successive record collates equal to or greater than that of the preceding record.

assignment component: A sort/merge program component that establishes the basic constants needed for program execution and initializes running components for a specific application.

collating sequence: A determined sequence into which data can be sorted or merged.

control field: A group of contiguous data within a logical record; it forms all or part of a control word.

control word: A group of control fields used to order records according to the collating sequence during a sort or merge.

descending sequence: A sequence of records such that the control word of each successive record collates equal to or less than that of the preceding record.

input data set: The data set (or data sets) used as input to the sort/merge program.

intermediate storage data set: A partially sequenced data set that is either input to or output from an intermediate merge pass.

logical record: A group of contiguous characters which is processed as a unit by the sort/merge program.

major control field: The control field that is most significant in determining the collating sequence of a logical record.

merge: The process used to form one sorted sequence of logical records from two or more previously sorted sequences. Also, a program or routine that performs this function.

merge pass: The passing of all the logical records used as input to the sort/merge through a program phase which merges previously sorted sequences into fewer, longer sequences.

minor control field: A control field which is less significant than the major control field in determining the collating sequence of a logical record. Successive minor control fields are considered to be in decreasing order of significance.

modal length: The record length that occurs most frequently in a variable-length record data set used as input to the sort/merge program.

Nmax: The estimated maximum number of logical records of a given length that can be sorted using a given amount of intermediate storage.

output data set: The sequenced data set which is produced by a sort/merge program execution.

phase: A portion of the sort/merge program that is designed to perform a specific operation on all the logical records used as input to the sort/merge program.

physical record: A group of contiguous data read or recorded by an I/O device as one unit. A physical record may contain one or more logical records.

program exit: A place in the executable code of the sort/merge program component at which a user-written routine may be given control to perform various functions.

running component: A sort/merge program component that performs a sorting or merging operation on the data set used as input to the program. Running components are initialized by assignment components.

sequence: A group of logical records that have been collated into a predesignated order.

sort: The process used to collate the logical records in a data set of unknown order. Also, a program or routine that performs this function.

sort blocking factor: The blocking factor used by the sort/merge program for intermediate storage data set.

user-written routine: A routine written by the user to perform various functions at a sort/merge program exit.

This appendix contains examples of the job control language and sort/merge control statements that are required for typical sort/merge applications.

EXAMPLE 1

Example 1 is a sorting application. The input data set consists of blocked, fixed-length records on 9-track tape. One control field is used. Intermediate storage and output are on 9-track tape. No user-written modification routines are supplied.

01 The JOB statement introduces this job to the operating system. The card contains accounting information and programmer identification. Message level 0 is specified by default.

02 This EXEC statement invokes the cataloged procedure SORTD. It can be written as shown, or as EXEC PROC=SORTD. (The contents of the sort/merge cataloged procedures supplied by IBM are shown at the end of this appendix.)

03-05 The SORTIN DD statement describes the input data set. It is named INPUT, and is on a 9-track tape that has the serial number 000101. The tape is on a 9-track tape drive.

The DISP parameter shows that the data set was created previously and should be deleted from the system after this job step. The DCB parameter shows the data set was recorded at high density (800 bpi) and consists of blocked, fixed-length records with a logical record size of 80 and a physical record size of 800.

06-08 The SORTOUT DD statement describes the output data set. It will be recorded on a 9-track tape drive and cataloged after it is created. It will be placed on tape volume number 102. The format, density, and physical and logical record lengths are identical to those for SORTIN.

09-11 These DD statements define intermediate storage data sets. These temporary data sets are on 9-track tape drives. No other parameters need to be specified since the standard system default options are acceptable for this application.

12 The SYSIN DD * statement informs the operating system that a data set follows in the system input stream.

13 This SORT control statement tells the sort/merge program to sort on a control field that begins 20 bytes from the start of each logical record. The field is five bytes long and contains character data. It is to be sorted in ascending sequence. As shown by the SIZE parameter, the input file contains exactly 7,545 logical records.

14 This RECORD statement informs the sort/merge program that the input

```
//EXAMP1     JOB  A402,PROGRAMMER                                          01
//STEP1      EXEC SORTD                                                    02
//SORTIN     DD   DSNAME=INPUT,VOLUME=SER=000101,                      X   03
//                UNIT=2400,DISP=(OLD,DELETE),                          X   04
//                DCB=(,DEN=2,RECFM=FB,LRECL=80,BLKSIZE=800)                05
//SORTOUT    DD   DSNAME=OUTPUT,UNIT=2400,DISP=(NEW,CATLG),            X   06
//                VOLUME=SER=102,                                       X   07
//                DCB=(RECFM=FB,LRECL=80,BLKSIZE=800,DEN=2)                 08
//SORTWK01   DD   UNIT=2400                                                09
//SORTWK02   DD   UNIT=2400                                                10
//SORTWK03   DD   UNIT=2400                                                11
//SYSIN      DD   *                                                        12
  SORT     FIELDS=(20,5,CH,A),SIZE=007545                                  13
  RECORD   TYPE=F,LENGTH=80                                                14
  END                                                                      15
/*                                                                         16
```

Example 1

data set is composed of fixed-length, 80 byte records.

15 The END statement mark the end of sort/merge control statements.

16 The /* card marks the end of the SYSIN data set.

EXAMPLE 2

Example 2 is a sorting application. Input is estimated to be 5000 blocked, fixed-length logical records on 7-track unlabeled tape. The records are sorted according to three control fields. Six 7-track tapes are used for intermediate storage. Output is recorded on one 7-track tape. No user-written modification routines are employed.

01 This JOB statement provides the operating system with a name, EXAM2, for this job. The statement also contains accounting information and programmer identification. Message level 0 is requested by default.

02 This EXEC statement invokes execution of the cataloged procedure SORT. Although the procedure SORTD is more efficient for this application because no modification routines are included, the SORT procedure may be used.

03-06 The SORTIN DD statement defines the input data set for the sort/merge program. The data set is named INPUT, its serial number is 000101, and it is on a 7-track tape drive. The DCB subparameters indicate the tape was recorded at 800 bpi; it is composed of blocked, fixed-length records. Their logical record length is 100 bytes, and their physical block size is 300 bytes. The TRTCH=ET subparameter is required for 7-track tape; it indicates the tape was recorded with even parity, and BCDIC to EBCDIC conversion is required. The DISP parameter shows that the data set is in existence, but should not be retained after this job step. The data set is the first one, or only one, on this unlabeled volume.

07-08 The SORTOUT DD statement defines the output data set. It is named OUTPUT, and it is recorded on 7-track tape on the volume that has the serial number 000102. The other parameters of this statement are the same as those for SORTIN, with the exception of DISP. DISP indicates this data set will be created in this job step, and will be referred to by a subsequent step (not shown).

09-14 The DD statements define intermediate storage for the sort/merge program. The storage is on six 7-track, unlabeled tapes. These tapes are to be recorded at high density with even parity and BCDIC to EBCDIC conversion.

15 This DD statement indicates a data set follows in the input stream.

16 The FIELDS operand of this SORT control statement defines three control fields. The first begins 22 bytes from the start of each record. It is five bytes long, contains character data, and should be ordered in ascending sequence.

```
//EXAM2     JOB  A402,PROGRAMMER                                                    01
//STEP1     EXEC SORT                                                              02
//SORTIN    DD   DSNAME=INPUT,VOLUME=SER=000101,                            X     03
//               UNIT=2400-2,                                              X     04
//               DCB=(,DEN=2,RECFM=FB,LRECL=100,BLKSIZE=300,TRTCH=ET),     X     05
//               DISP=(OLD,PASS),LABEL=(,NL)                                     06
//SORTOUT   DD   DSNAME=OUTPUT,UNIT=2400-2,DISP=(NEW,CATLG),VOLUME=SER=102,  X     07
//               DCB=(RECFM=FB,LRECL=80,BLKSIZE=800,DEN=2,TRTCH=ET)              08
//SORTWK01  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   09
//SORTWK02  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   10
//SORTWK03  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   11
//SORTWK04  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   12
//SORTWK05  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   13
//SORTWK06  DD   UNIT=2400-2,LABEL=(,NL),DCB=(,DEN=2,TRTCH=ET)                   14
//SYSIN     DD   *                                                               15
 SORT FIELDS=(22.0,5.0,CH,A,30,6,CH,A,40,2,CH,D),SIZE=E5000                      16
  RECORD TYPE=F,LENGTH=100                                                       17
  END                                                                            18
/*                                                                               19
```

Example 2

The second field begins 30 bytes from the start of each record, contains six bytes of character data, and also should be ordered in ascending sequence. The last field begins after byte 40 and contains two bytes of character data. It should be ordered in descending sequence. The SIZE parameter shows that the input data set is estimated to be 5,000 logical records.

17 This RECORD control statement tells the sort/merge program that the input data set consists of fixed-length records of 100 bytes.

18 The END statement indicates that no more sort/merge control statements follow.

19 The /* card marks the end of the SYSIN data set.

EXAMPLE 3

This sorting application uses IBM 2311 Disk Storage Drives for input, intermediate storage and output. The input data set consists of fixed-length, unblocked records. A user-written routine at exit E15 is used; it shortens the records 30 bytes.

01-02 These are the basic JOB and EXEC statements.

03-05 This statement defines the input data set. It is on volume INP214 on an IBM 2311 Disk Storage Drive.

06-08 The output data set is composed of fixed-length, blocked records. The SPACE parameter indicates that 500 tracks are required by SORTOUT, and five tracks will be allocated each time space is exhausted.

09-11 Intermediate storage consists of 275 contiguous tracks. Specifying UNIT=2311 allows the system to obtain the space from available devices, so optimization will occur.

12 The SORTMODS DD statement is required when user-written routines appear in the system input stream. The routines are placed in the data set described by this statement. Ten disk tracks are reserved for the partitioned data set, along with three tracks for the directory.

13 A data set follows.

14 This SORT control statement defines a single control field and specfies an exact file size.

15 The fixed-length input records are shortened from eighty bytes to 50 bytes by a user-written routine in the sort phase.

16 This MODS statement informs the sort/merge program that a user-written routine exists for exit E15. The routine has an entry point called E15; it is 534 bytes long and is located on SYSIN. Link editing is necessary because the routine appears in the system input stream.

17 The standard END statement.

18 This statement marks the end of the object deck.

```
//EXAM3      JOB  A402,PROGRAMMER                                          01
//STEP1      EXEC SORT                                                     02
//SORTIN     DD   DSNAME=INPUT,VOLUME=SER=INP214                      X    03
//               UNIT=2311,DCB=(,RECFM=F,LRECL=80,BLKSIZE=80),        X    04
//               DISP=(OLD,DELETE)                                         05
//SORTOUT    DD   DSNAME=OUTPUT,VOLUME=SER=DLIB02,                    X    06
//               UNIT=2311,DCB=(,RECFM=FB,LRECL=50,BLKSIZE=500),      X    07
//               DISP=(NEW,KEEP),SPACE=(TRK,(500,5))                       08
//SORTWK01   DD   UNIT=2311,SPACE=(TRK,(275),,CONTIG)                      09
//SORTWK02   DD   UNIT=2311,SPACE=(TRK,(275),,CONTIG)                      10
//SORTWK03   DD   UNIT=2311,SPACE=(TRK,(275),,CONTIG)                      11
//SORTMODS   DD   UNIT=2311,SPACE=(TRK,(10,,3))                            12
//SYSIN      DD   *                                                        13
  SORT     FIELDS=(10,5,CH,A),SIZE=10000                                  14
  RECORD   TYPE=F,LENGTH=(80,50)                                          15
  MODS     E15=(E15,534,SYSIN)                                            16
  END                                                                     17
  Object deck for E15 must be here
/*                                                                        18
```

Example 3

EXAMPLE 4

Example 4 is a sorting application using disks for intermediate storage and 9-track tape for output. Input is variable-length, blocked records on 9-track tape. Two user modification routines are provided.

01-02 The basic JOB and EXEC statements.

03-05 This input data set consists of variable-length, blocked records on 9-track tape. Maximum logical record length is 60 bytes, and maximum physical record length, including the four byte length field, is 124 bytes.

06-09 The output data set is placed on the same unit as SORTIN, the input data set.

10-12 Intermediate storage consists of 200 contiguous tracks on each of three drives.

13 This DD statement describes the data set containing the user-written modification routines.

14 A data set follows.

15 This statement describes a control field and specifies an estimated file size of 25,500 logical records.

16 The input records are variable-length. Maximum logical record size is 60 bytes, and minimum size is 30 bytes. Model record length is 50 bytes.

17 User-written routines are provided for exits E15 and E35. Both have entry points equal to their exit numbers. The first routine is 554 bytes long; the second is 1,032 bytes. Both are contained in the data set described by the DD statement USERLIB. Neither requires link editing.

18-19 The standard END and /* statements.

EXAMPLE 5

This is an example of a sorting application that uses a drum for input, output and intermediate storage.

01-02 The basic JOB and EXEC statements.

03-05 The input data set consists of blocked, fixed-length records on an IBM 2301 Drum Storage Drive.

06-08 The output data set is recorded on 75 drum tracks. If this space is not sufficient, additional space will be allocated in blocks of ten tracks.

9-14 Six drum areas are provided for intermediate storage. Each area consists of 25 contiguous tracks.

15 A data set follows.

16 The SORT statement defines a control field of binary data. Input file size is exactly 5,240 logical records.

17 This statement directly informs the sort/merge program of the input record format and logical record length.

```
//EXAM4      JOB  A402,PROGRAMMER                                          01
//STDEP1     EXEC SORT                                                     02
//SORTIN     DD   UNIT=2400,DSNAME=INPUT,VOLUME=SER=000101,          X     03
//                DCB=(,DEN=2,RECFM=VB,LRECL=60,BLKSIZE=124),       X     04
//                DISP=(OLD,PASS),LABEL=(,NL)                             05
//SORTOUT    DD   UNIT=AFF=SORTIN,DSNAME=OUTPUT,                    X     06
//                VOLUME=SER=000101,                                X     07
//                DCB=(,DEN=2,RECFM=VB,LRECL=60,BLKSIZE=124),       X     08
//                DISP=(NEW,PASS),LABEL=(,NL)                             09
//SORTWK01   DD   UNIT=2311,SPACE=(TRK,(200),,CONTIG)                      10
//SORTWK02   DD   UNIT=2311,SPACE=(TRK,(200),,CONTIG)                      11
//SORTWK03   DD   UNIT=2311,SPACE=(TRK,(200),,CONTIG)                      12
//USERLIB    DD   DSNAME=SORTMODS,DISP=OLD                                 13
//SYSIN      DD   *                                                        14
  SORT     FIELDS=(20,5,CH,A),SIZE=E25500                                 15
  RECORD   TYPE=V,LENGTH=(60,,,30,50)                                     16
  MODS     E15=(E15,554,USERLIB,N),E35=(E35,1032,USERLIB,N)               17
  END                                                                     18
/*                                                                        19
```

Example 4

```
//EXAM5      JOB  A402,PROGRAMMER                                          01
//STEP1      EXEC SORTD                                                   02
//SORTIN     DD   DSNAME=INPUT,VOLUME=SER=000101,                    X    03
//              UNIT=2301,DISP=(OLD,DELETE),                         X    04
//              DCB=(,RECFM=FB,LRECL=80,BLKSIZE=3200)                     05
//SORTOUT    DD   DSNAME=OUTPUT,VOLUME=SER=000101,                   X    06
//              UNIT=2301,DISP=(NEW,PASS),SPACE=(TRK,(75,10)),       X    07
//              DCB=(,RECFM=FB,LRECL=80,BLKSIZE=3200)                     08
//SORTWK01   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      09
//SORTWK02   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      10
//SORTWK03   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      11
//SORTWK04   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      12
//SORTWK05   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      13
//SORTWK06   DD   UNIT=2301,SPACE=(TRK,(25),,CONTIG)                      14
//SYSIN      DD   *                                                       15
  SORT     FIELDS=(35.0,10.0,BI,A),SIZE=5240                            16
  RECORD   TYPE=F,LENGTH=80                                             17
  END                                                                   18
/*                                                                      19
```

Example 5

18 The standard END and /* statements.

EXAMPLE 6

Example 6 is a merging application. The input data sets are on six 9-track tapes. Output also is recorded on 9-track tape.

01-02 The basic JOB and EXEC statements.

03-08 These DD statements describe the merge input data sets. All are on 9-track tapes and consist of fixed-length records with a blocking factor of three.

09-10 The merged data set is recorded on a 9-track tape at the same blocking factor and with the same format as the input data sets.

11 Sort/merge control statements follow.

12 The MERGE statement describes a control field that begins 30 bytes from the start of each record. The field is eight bytes long and contains character data. Ascending sequence is requested.

13-14 The standard END and /* statements.

SORT/MERGE CATALOGED PROCEDURES

The sort/merge program is supplied with two cataloged procedures; they are named SORT and SORTD. The SORT procedure should be used for applications that use user-written modification routines that were not link edited before their use in the sort/merge program, or routines that require separate link editing. If modification routines are previously link edited, or if no modification routines are used, the direct loading procedure SORTD should be used.

```
//EXAM6      JOB  A402,PROGRAMMER                                          01
//STEP1      EXEC SORTD                                                   02
//SORTIN01   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          03
//SORTIN02   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          04
//SORTIN03   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          05
//SORTIN04   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          06
//SORTIN05   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          07
//SORTIN06   DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240)          08
//SORTOUT    DD   UNIT=2400,DCB=(,RECFM=FB,LRECL=80,BLKSIZE=240),    X    09
//              DISP=(NEW,KEEP),VOLUME=SER=000102                         10
//SYSIN      DD   *                                                       11
  MERGE    FIELDS=(30,8,CH,A)                                           12
  END                                                                   13
/*                                                                      14
```

Example 6

SORT CATALOGED PROCEDURE CONTENTS

The control statements shown in Figure 14 are the contents of the SORT cataloged procedure supplied by IBM.

01 The stepname of the cataloged procedure is SORT. This EXEC card initiates the sort/merge program, which has the name IERRCO00.

02 The SYSOUT DD statement defines an output data set for system use. It is directed to system output class A.

03 SYSPRINT is defined as a dummy data set because linkage editor diagnostic output is not required.

04 This DD statement defines a data set for linkage editor output. Any system direct-access device is acceptable for the output. Fifty tracks are requested; this is the primary allocation. Twenty more tracks are requested if the primary allocation is not sufficient; this is the secondary allocation. Each time space is exhausted, the secondary allocation is requested. The last value is space for a directory, which is required because SYSLMOD is a new partitioned data set.

05 The SYSLIN data set is used by the sort/merge program to describe preedited input to the linkage editor. It is created on any system direct-access device, and it has space for 150 records with an average record length of 80. If the primary space allocation is exhausted, additional space is acquired in blocks large enough to contain ten records. No directory space is necessary.

06 The SORTLIB DD statement defines the data set that contains the sort/merge program modules. It has the qualified name SYS1.SORTLIB, and it is cataloged.

07-08 The SYSUT1 DD statement defines a work data set for the linkage editor. A system direct-access device is acceptable, as long as it is not a device that contains the SORTLIB, SYSLMOD or SYSLIN data sets. Fifty tracks are requested. The secondary allocation is 20 tracks.

SORTD CATALOGED PROCEDURE CONTENTS

The control statements shown in Figure 15 are the contents of the SORTD cataloged procedure supplied by IBM.

01 The stepname of this procedure is SORT. This EXEC statement initiates the sort/merge program.

02 System output is directed to system output class A.

03 This DD statement defines the data set containing sort/merge program modules.

LINK EDIT Required

```
//SORT     EXEC   PGM=IERRCO00                                          01
//SYSOUT   DD     SYSOUT=A                                              02
//SYSPRINT DD     DUMMY                                                 03
//SYSLMOD  DD     UNIT=SYSDA,SPACE=(TRK,(50,20,1))                      04
//SYSLIN   DD     UNIT=SYSDA,SPACE=(80,(150,10))                        05
//SORTLIB  DD     DSNAME=SYS1.SORTLIB,DISP=OLD                          06
//SYSUT1   DD     UNIT=(SYSDA,SEP=(SORTLIB,SYSLMOD,SYSLIN)),        X   07
//               SPACE=(TRK,(50,20))                                   08
```

Figure 14. The SORT Cataloged Procedure

```
//SORT     EXEC   PGM=IERRCO00                                          01
//SYSOUT   DD     SYSOUT=A                                              02
//SORTLIB  DD     DSNAME=SYS1.SORTLIB,DISP=OLD                          03
```

Figure 15. The SORTD Cataloged Procedure

NO LINK EDIT

The sort/merge program generates two kinds of messages -- those which result from critical error conditions and those which give information about the program's operation.

At system generation the printing of either all messages or only critical messages may be requested. The option to have messages printed on a printer or at the operator's console is also available.

The sort/merge program analyzes control statements in two stages. The first stage (Stage 1) analyzes the general format of control statements. The second stage (Stage 2) analyzes the information contained in sort/merge control statements and job control language statements. Stage 2 analyzes sort syntax and contents errors. Each statement of one type is scanned for errors and the first error detected stops the scan for that type statement. A message is printed, and the scan continues on successive statement types.

When a critical error is encountered in either stage, the message is printed and the control information analysis continues until the current stage is completed, then the program terminates. (If the error is encountered in Stage 1, termination is at the end of Stage 1; if the error is encountered in Stage 2, termination is at the end of Stage 2.) The action taken by the system upon encountering a critical control information error is described as either "Stage 1 termination" or "Stage 2 termination."

Messages are listed and explained in message code order, from IER001 to IER065. The last character of each message code signifies the severity of the message. One of two characters is used: A, when programmer action is required, or I, when the message serves an informative purpose only. The explanations of all critical messages begin with "Critical."

IER001A - COL 1 OR 1-15 NOT BLANK

Explanation: Critical. Column 1 of a sort/merge control statement is not blank, or columns 1 through 15 of a sort/merge continuation card are not blank.

System Action: Stage 1 termination.

User Response: Check control statements for nonblank characters in column 1, and continuation cards for nonblank characters in columns 1 through 15.

IER002A - EXCESS CARDS

Explanation: Critical. This message is generated for one of four reasons:

- More than 25 control cards are supplied to the sort/ merge program.
- Any control statement type is duplicated.
- The control statements passed to the sort/merge program during an ATTACH, LINK, or XCTL operation contain more information than is allowed for the statements passed.
- A control statement contains more than the allowable number of cards.

System Action: Stage 1 termination. All control cards above the 25 limit, or any duplicate type statements, are ignored. If the sort was activated by an ATTACH, LINK, or XCTL, no information is processed.

User Response: Check for too many control cards, duplicate statement types, and, if the sort was activated by an ATTACH, LINK, or XCTL, more information than allowed.

IER003A - NO CONTIN CARD

Explanation: Critical. A continuation card has been indicated by a nonblank character in column 72 of the previous card and no card follows.

System Action: Stage 1 termination.

User Response: Check for a keypunching error, or an overflow of parameters into column 72.

IER004A - ILLEGAL OP DELIMITER

Explanation: Critical. A control statement ends with a comma or other incorrect delimiter.

System Action: Stage 1 termination.

User Response: Check for operands that are incorrectly split between control and continuation cards.

IER005A - STMT DEFINER ERR

Explanation: Critical. A control statement that should contain an operation definer does not contain an acceptable one.

System Action: Stage 1 termination.

User Response: Check all statements for incorrect, misplaced, or misspelled operation definers.

IER006A - OP DEFINER ERR

Explanation: Critical. The first operand of a control statement does not begin on the same statement as the operation definer.

System Action: Stage 1 termination.

User Response: Check for statements that contain only the operation definer.

IER007A - SYNTAX ERR - xxx

Explanation: Critical. A control statement contains an error in syntax. xxx is a 3-character code ("S/M," "REC," or "MOD") that indicates the control statement in which the error occurred.

System Action: Stage 2 termination.

User Response: Check the control statements for syntax errors. Some of the more common syntax errors are:

- Unbalanced parentheses.
- Missing commas.
- Embedded blanks.

IER008A - FLD OR VALUE GT 8 CHAR - xxx

Explanation: Critical. A parameter of greater than 8 characters has been specified. xxx is a 3-character code ("S/M," "REC," or "MOD") that indicates the control statement in which the error occurred.

System Action: Stage 2 termination.

User Response: Check control statements for errors that characters.

IER009A - EXCESS INFO ON CARD - xxx

Explanation: More information than necessary appears in a control statement. This could possibly be caused by a syntax error which cannot be diagnosed by the program. xxx is a 3-character code ("S/M," "REC," or "MOD") that indicates the control statement in which the error occurred. This message is also printed when comments appear on a card.

System Action: The excess information is treated as a comment.

User Response: Check control statements, unless comments are intended.

IER010A - NO S/M CARD

Explanation: Critical. All control statements have been processed and no SORT or MERGE control statement has been found.

System Action: Stage 2 termination.

User Response: Supply a SORT or MERGE control statement.

IER011A - TOO MANY S/M KEYWORDS

Explanation: Critical. More than the maximum of 5 keyword operands defined on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for too many keyword operands.

IER012A - NO FLD DEFINER

Explanation: Critical. A SORT or MERGE control statement does not contain a control field definition.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for lack of a control field definition.

IER013A - INVALID S/M KEYWORD

Explanation: Critical. An invalid keyword operand has been detected on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for invalid keyword operand.

IER014A - DUPLICATE S/M KEYWORD

Explanation: Critical. A keyword operand is defined twice on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for a multiple defined keyword operand.

IER015A - TOO MANY PARAMETERS

Explanation: Critical. Too many parameters are associated with a keyword operand on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement keyword operands for too many parameters.

IER016A - INVALID VALUES IN FLD

Explanation: Critical. An invalid number of values is specified with a FIELDS operand on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check values in control field definitions on SORT or MERGE control statement.

IER017A - ERR IN D/L VALUE

Explanation: Critical. An invalid length or displacement value is specified in a control field definition on a SORT or MERGE control statement.

System Action: Stage 2 termination.

User Response: Check length and displacement values specified in SORT or MERGE control statement.

IER018A - CTL FLD ERR

Explanation: Critical. An error in specifying the type of control field defined in a SORT or MERGE control statement has been detected.

System Action: Stage 2 termination.

User Response: Check control field types on SORT or MERGE control statement for keypunching or other errors in specification.

IER019A - SIZE/SKIPREC ERR

Explanation: Critical. An error in specifying the SIZE operand in either a SORT or MERGE control statement, or the SKIPREC operand in a SORT control statement, has been detected.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for invalid SIZE or SKIPREC operand.

IER020A - INVALID REC KEYWORD

Explanation: Critical. An invalid operand definer has been found in a RECORD control statement.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for keypunching or other error in an operand definer.

IER021A - NO TYPE DEFINER

Explanation: Critical. A RECORD control statement has been found without a TYPE operand.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for lack of TYPE operand.

IER022A - RCD FORMAT NOT F/V

Explanation: Critical. An error in specifying the value associated with the TYPE operand of a RECORD control statement has been detected.

System Action: Stage 2 termination.

User Response: Check the RECORD control statement for keypunching or other errors resulting in TYPE operand value being some character other than F (fixed-length records) or V (variable-length records).

IER023A - NO LENGTH DEFINER

Explanation: Critical. The LENGTH operand of a RECORD control statement is not present.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for lack of LENGTH operand.

IER024A - ERR IN LENGTH VALUE

Explanation: Critical. An incorrect value is associated with the LENGTH parameter of a RECORD control statement.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for incorrectly specified length value.

IER025A - RCD SIZE GT MAX

Explanation: Critical. The logical record size specified on a RECORD control statement is greater than the maximum allowed by the program.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for incorrectly specified logical record length.

IER026A - L1 NOT GIVEN

Explanation: Critical. The LENGTH operand of a RECORD control statement lacks an l_1 value.

System Action: Stage 2 termination.

User Response: Check RECORD control statement for lack of l_1 value in LENGTH operand.

IER027A - CF BEYOND RCD

Explanation: Critical. A control field has been defined as beginning beyond the maximum record length specified in a RECORD control statement.

System Action: Stage 2 termination.

User Response: Check SORT or MERGE control statement for incorrectly specified control field displacement. Check RECORD control statement for incorrectly specified maximum record length (l_2).

IER028A - TOO MANY EXITS

Explanation: Critical. An attempt has been made to activate more than the maximum number of program exits allowed by the program (17).

System Action: Stage 2 termination.

User Response: Reduce the number of exits specified in the MODS control statement.

IER029A - IMPROPER EXIT

Explanation: Critical. This message is generated for one of two reasons:

- An exit other than the 17 allowed by the program has been activated on a MODS control statement.
- An exit in the sort or intermediate merge phase of the program has been activated during a merge application.

System Action: Stage 2 termination.

User Response: Check MODS control statement for keypunching error or other error resulting in specification of invalid program exit number. If a merge is being performed, check MODS control statement for exit numbers which refer only to sort or intermediate merge phase exits.

IER030A - MULTIPLY DEFINED EXIT

Explanation: Critical. A program exit has been defined twice in MODS control statement.

System Action: Stage 2 termination.

User Response: Check MODS control statement for multiply defined exits.

IER031A - INVALID MODS OP CHAR

Explanation: Critical. An invalid character in a parameter of a MODS control statement has been found.

System Action: Stage 2 termination.

User Response: Check the parameters of a MODS control statement for a length field containing something other than numeric data, a source or name field beginning with something other than an alphabetic character, or a source or length field containing a special character.

IER032A - EXIT E61 REQUIRED

Explanation: Critical. A SORT or MERGE control statement defines a control field calling for user-written routine (this is done by specifying E for the control field sequence indica- tor), and exit E61 is not activated by a MODS control statement.

System Action: Stage 2 termination.

User Response: Check MODS and SORT or MERGE control statements for keypunching errors resulting in the specification of an E type parameter on the SORT or MERGE control statement and no E61 on the MODS control statement.

IER033A - CF SEQ INDIC E REQUIRED

Explanation: Critical. Program exit E61 is activated and no control fields have been specified for user modification (E control field sequence parameter missing on SORT or MERGE control statement).

System Action: Stage 2 termination.

User Response: Check MODS, and SORT or MERGE control statements for keypunching errors resulting in the activation of exit E61 and the lack of an E type parameter on the SORT or MERGE control statement.

IER034A - PARAM ERR FOR MODS

Explanation: Critical. An incorrect number of parameters follow an operand definer on a MODS control statement, or SYSIN is specified on the MODS statement as the source for user-written routines, and no //SORTMODS card is present.

System Action: Stage 2 termination.

User Response: Check MODS control statement for parameter specification error.

IER035A - DUPLICATE MOD RTN IN PHASE

Explanation: The same user-written routine is being used for more than one exit in a sort/merge program phase, or two or more routines have the same name.

System Action: Stage 2 termination.

User Response: Check the MODS control statement for improper use of duplicate names. Duplicate names within a phase may be used only when the user-written routines are to be link edited together, and they are in one load module.

IER036I - B = xxxxxx

Explanation: This message communicates the blocking used by the sort for intermediate storage records. For fixed-length records, the blocking factor is substituted for xxxxxx in the message text. For variable-length records, the size of the buffer area is substituted for xxxxxx in the message text.

System Action: None.

User Response: None.

IER037I - G = xxxxxx

Explanation: This message communicates the number of logical records that can fit into the program's record storage area at one time during a sort. The number of records is substituted for the xxxxxx in the text of the message as shown above.

System Action: None.

User Response: None.

IER038I - NMAX = xxxxxx

Explanation: This message communicates an estimate of the maximum number of records that can be sorted using the intermediate storage and main storage available to the sort for the current application. The number replaces the xxxxxx in the text of the message as shown above.

System Action: None.

User Response: None.

IER039A - INSUFFICIENT CORE

Explanation: Critical. There is not enough main storage available to the sort to allow program execution.

System Action: The program terminates.

User Response: The sort requests main storage from 12,000 bytes to the maximum amount specified by the user at system generation. For any given execution, the minimum amount required depends upon the number of intermediate storage data sets, the logical record length, and the physical block length. Reducing the number of intermediate storage data sets reduces the amount of main storage required for buffer areas. If the number of intermediate storage data sets is at the minimum allowed for the application, reducing the physical block length may also reduce the amount of main storage needed for buffer areas. If such corrective action is not possible, the user-specified maximum must be increased.

IER040A - INSUFFICIENT WORK UNITS

Explanation: Critical. There is not enough intermediate storage available to the sort to allow program execution.

System Action: Stage 2 termination.

User Response: Check DD statements for errors. Check to see if less than three intermediate storage units were assigned. Assign more intermediate storage to sort. If direct-access devices are assigned, check to be sure that at least three areas or at least three tracks are specified on the DD statements.

IER041A - N GT NMAX

Explanation: Critical. The number of records specified in the SIZE operand of a SORT control statement is greater than the maximum sort capacity calculated by the program.

System Action: The program terminates unless data set size was estimated or not given; then sort continues.

User Response: Check SIZE operand of SORT control statement for error. If SIZE operand is correct, check DD statements for an error in assigning intermediate storage. If DD statements are correct, assign more intermediate storage to the program and rerun.

IER042A UNITS ASGN ERROR

Explanation: Critical. A. Different types of intermediate storage devices, or an invalid combination of input, work, and output devices have been assigned to the sort. B. Duplicate ddnames have been specified.

System Action: Stage 2 termination.

User Response: A. Assign intermediate storage so that all units are of the same type, i.e., all are either direct-access units or tape units. Only when 7-track tape is used for the input unit may it be used for the intermediate storage units and the output units. B. Check DD statements for duplication.

IER043A - DATA SET ATTRIBUTE NOT SPECIFIED

Explanation: Critical. DD statements that define the input and output data sets conflict with each other or lack any of the following information:

- Input or output blocking factor (BLKSIZE).
- Record format (RECFM).
- Logical record length (LRECL).

System Action: Stage 2 termination.

User Response: Supply needed information and rerun job.

IER044I - EXIT Exx ILLEGAL OPTION

Explanation: An invalid data control block field specification was passed to the sort/merge program at exit E18, E19, E28, E29, E38, or E39. The xx value in the above message text is replaced by the number of the exit at which the error occurred.

System Action: The invalid option is ignored.

User Response: Check the parameter list passed by the user-written routine against the following table before rerunning the application. An x indicates which options are allowed with the exit in question.

Option	E18	E19	E28	E29	E38	E39
SYNAD	x	x	x	x	x	x
EXLST	x	x	x	x	x	x
EROPT	x		x		x	
EODAD	x					

IER045I - END SORT PH

Explanation: The program's sort phase has been successfully executed.

System Action: None.

User Response: None.

IER046A - SORT CAPACITY EXCEEDED

Explanation: Critical. The sort has used up all available intermediate storage and the input data set has not been exhausted.

System Action: The program terminates.

User Response: If magnetic tape is used for intermediate storage, be sure all reels contain full length tapes. If they do, rerun application with more intermediate storage.

IER047A - RCD CNT OFF, IN xxxxxx, OUT xxxxxx

Explanation: Critical. The number of records entering and leaving a program phase are not equal; these numbers do not include records inserted or deleted by user-written routines. If an actual data set size was specified in the SIZE parameter of the SORT control statement, it is placed in the IN field of this message. This message can appear in phase 1 or phase 2. In phase 3 the message is RCD CNT OFF and record IER054I contains the count. The numbers replace the values specified as xxxxxx in the text of the message as shown above.

System Action: The program terminates.

User Response: Check for valid SIZE value. If correct, rerun the job.

IER048I - NMAX REACHED

Explanation: Critical. The sort has exceeded the calculated sort capacity while processing the input data set, and exit E16 is specified.

System Action: The user-written routine at exit E16 is entered. (See the section "Program Modification," for further information.)

User Response: None. (The number of records sorted is equal to the Nmax calculated by the sort. See sort message IER038I.)

IER049I - SKIP MERGE PH

Explanation: It is not necessary to execute the intermediate merge phase to complete a sorting application.

System Action: Control is passed directly from the sort phase to the final merge phase.

User Response: None.

IER050I - END MERGE PH

Explanation: The program's intermediate merge phase has been successfully executed.

System Action: None.

User Response: None.

IER051A - UNENDING MERGE

Explanation: Critical. There is not enough intermediate storage assigned to successfully complete the program's intermediate merge phase.

System Action: The program terminates.

User Response: Rerun the job after assigning more intermediate storage to the sort/merge program.

IER052I - EOJ

Explanation: The program's final merge phase has been successfully executed.

System Action: Return is made to the operating system for a normal end of task.

User Response: None.

IER053A - OUT OF SEQ

Explanation: Critical. The current record leaving the final merge phase is not in collating sequence with the last record blocked for output.

System Action: The program terminates.

User Response: If a user-written routine was modifying the records leaving the final merge phase at the time this message was generated, check the routine thoroughly. If not, rerun the job.

IER054I - RCD IN xxxxxx, OUT xxxxxx

Explanation: This message lists the number of records accepted by the sort as input and the number of records in the output data set. The numbers replace the xxxxxx in the text of the message as shown above. In a merging application, the RECORDS IN field is blank unless an actual data set size was specified in the SIZE parameter of the MERGE control card. When an actual size is specified, it is inserted in the IN field of the message.

System Action: None.

IER055I - INSERT xxxxxx, DELETE xxxxxx

Explanation: The number of records inserted and/or deleted during a sort/merge program execution replaces the values shown as xxxxxx in the above format.

System Action: None.

User Response: None.

IER056A - SORTIN/SORTOUT NOT DEFINED

Explanation: Critical. SORTIN and/or SORTOUT do not appear as ddnames on DD statements supplied to the sort/merge program. This message can also appear when DD statements are supplied for a merge, and a SORT control statement is given instead of a MERGE statement.

System Action: The program terminates.

User Response: Check DD statements for error.

IER057A - SORTIN NOT SORTWK01

Explanation: Critical. An intermediate storage data set other than SORTWK01 was assigned to the same I/O device as SORTIN.

System Action: The program terminates.

User Response: Check DD statements for error.

IER058A - SORTOUT A WORK UNIT

Explanation: Critical. SORTOUT was specified on the same I/O unit as an intermediate storage data set.

System Action: The program terminates.

User Response: Check DD statements for error.

IER059A - RCD LNG INVALID FOR DEVICE

Explanation: Critical. The logical record length in the input data set(s) is either less than 18 bytes, or is too large for the assigned intermediate storage devices. (For example, a logical record which can not be contained on one disk track is too large.)

System Action: The program terminates.

User Response: If the logical record length is too large, assign a different type of intermediate storage device. If the length is too small, redefine the sort with a logical record length of at least 18 bytes.

IER060A - DSCB NOT DEFINED

Explanation: Critical. A DD statement used to define a direct-access intermediate storage data set is incorrect.

System Action: The program terminates.

User Response: Check DD statements for error.

IER061A - I/O ERR xxx

Explanation: Critical. A permanent error occurred during an I/O operation on device xxx, where xxx represents the unit number of the device.

System Action: If no user options are specified, the program terminates. (For more information on user options, see the topic I/O ERRORS in the section "Sort/merge Program" and topic "Read/write Error Routines" in the section "Program Modification.")

User Response: If error persists, have the computing system checked.

IER062A - L E ERR

Explanation: Critical. The linkage editor found a serious error; execution of the sort/merge program is impossible.

System Action: The program terminates.

User Response: Check user-written modification routines for a link editing problem.

IER063A - OPEN ERR xxxxxxxx

Explanation: An error occurred during execution of the OPEN routine for data set xxxxxxxx, where xxxxxxxx represents the ddname of the data set being opened.

System Action: The program terminates.

User Response: Check for a missing DD statement.

IER064A - DELETE ERR

Explanation: The sort/merge program was unable to delete either itself or a user-written modification routine. This message should appear only when modification routines are used.

System Action: The program terminates.

User Response: Check modification routines. If no modification routines are used, and the program is running in a multiprogramming environment, rerun the job.

IER065A - PROBABLE DECK STRUCTURE ERROR

Explanation: Critical. The end of the SYSIN data set was found before all needed user modification modules were read.

System Action: The program terminates.

User Response: 1. Be sure the SYSIN data set contains all modification routines that the MODS statement specifies it will contain. 2. Check for misplaced job control language statements, especially a /* preceding a user modification module on SYSIN.

The following tables contain verified total execution times of the sort/merge program for more than 5,000 sorting applications. The tables can be used as a basis for estimating execution times for other applications. The times shown are total execution times, including the required control program executions, but excluding the rewind of final output on tape.

The values shown for input blocking are representative of typical sorting applications, and are shown only for illustration. These blockings may not be the most efficient for each configuration. The selection of optimal input blocking can only be done empirically.

The times shown are for fixed-length record sorts. Times for variable-length record sorts can best be approximated from the table values by using the modal length as the data record length. If modal length is not known, average length can be used.

The user should note that the timings are based on estimates of general operating system functions, and there are many possible combinations of functions. Variations in the control program, inclusion of additional system functions, user service routines and similar options cause empirical values obtained in timing sort applications to vary; they may not necessarily be identical to the values shown in the tables. Simple extrapolation to obtain timing values for I/O configurations not shown also gives values that should not be considered absolute.

The times shown reflect the following assumptions:

1. The logical records in the input data set are in random order. For an otherwise identical input data set in better than random order, sorting time may be less than that shown. If the input data is less than random order (that is, has some degree of sequencing inversely related to the desired output sequencing), sorting time may be greater.

2. Logical records are ordered into ascending and descending sequence on the basis of a single 10-byte character control field. On System/360 Models 30, 40, and 50, and on single data channel Models 65 and 75, sorting times may be greater than the table value if:
   a. a longer control field is used.
   b. a fixed-point, packed decimal, zoned decimal, binary (if not on a byte boundary), or floating-point control field is used.
   c. multiple control fields are used.

3. No user routines have been added to the program. For sorting applications where user routines are to be executed, their execution time, including linkage time, should be added to the times shown.

4. In two-channel, no-tape-switch cases, tape units are evenly distributed between the two channels. For sorting applications where tape units are not equally distributed between the channels, sorting times will almost certainly be greater than the times shown, through partial loss of I/O overlap.

5. Where 2311 disks or 2301 drums are specified, at least three logical areas are required for intermediate storage. If less than three devices are assigned, three logical areas are assumed. If three or more physical units are used, it is assumed that the logical areas will be assigned to different units. It is also assumed that all areas are equal in size. If storage space is unevenly distributed, sorting times may be greater than those shown. Moreover, theoretical sequence distribution is unlikely. For this reason, actual times may be greater than estimated.

6. The 2400 Series Magnetic Tape Units are 9-track units. Sorting times with 7-track units may be slightly greater than times shown.

7. In tape-switch cases, all intermediate tape units are accessed through the switch.

8. System residence is an IBM 2311 Disk Storage Drive.

9. The sort is not being multiprogrammed; no other task is using the CPU or input/output devices.

10. The minimum number of tape units used is five -- one input, three intermediate storage, and one output. If the input or output data sets are specified on the same units as intermediate

storage data sets, sorting times will be greater than those in the table.

11. Input/output operations are error free, and no checkpoints are taken.

12. The maximum data set size in the tables is a theoretical maximum. The actual maximum data set size for a particular application may vary from this value, especially if an accurate data set size is not given on the SORT control statement.

13. The sort blocking shown for each line is the largest sort blocking calculated for any of the cases in the line.

The tables are arranged according to the following hierarchy:

1. System/360 Model - Times for Models 30, 40, 50, 65, and 75 are provided.

2. Main storage used - Times are shown for representative amounts of main storage available for the sort/merge program throughout its execution.

3. Record Length - Times are shown for logical record lengths of 20, 80, 200, and 500 bytes.

4. No. CH - Times are shown for one and two selector channels. SW refers to the use of an IBM 2816 Switching Unit or an IBM 2404/2804 Simultaneous Tape Control. Either must be connected so that two channel paths exist between each tape drive and the central processing unit running the sort/merge program.

5. Work unit - Times are given for various I/O devices. The same device type is used for input, output, and intermediate storage in each case considered.

6. No. Units - Times for various numbers and types of intermediate storage devices are given.

7. Data set size - Times for up to 12 data set sizes (in thousands of records) are given for each case. In some cases, certain data set sizes may exceed the maximum possible data set size. CE is used to indicate sort capacity has been exceeded.

8. Max Size - The maximum data set size that can be sorted for the given machine configuration is shown.

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	150	1.8	2.7	4.3	8.2	11	22	33	45	58	71	98	160	943K	141	147
2400-1	30KC	5	1	NO	2400-1	100	1.8	2.5	3.6	6.0	7.7	15	23	31	38	47	65	110	1964K	109	209
2400-1	30KC	8	1	NO	2400-1	100	2.1	2.7	3.7	6.0	7.2	14	21	29	37	44	61	93	3010K	87	245
2400-2	60KC	3	1	NO	2400-2	150	1.7	2.4	3.7	6.8	8.3	17	27	36	46	56	77	120	943K	141	147
2400-2	60KC	5	1	NO	2400-2	100	1.8	2.3	3.2	5.2	6.5	13	18	25	31	38	52	83	1964K	109	209
2400-2	60KC	8	1	NO	2400-2	100	2.1	2.5	3.4	5.3	6.2	12	18	24	30	36	49	75	3010K	87	245
2400-3	90KC	3	1	NO	2400-3	150	1.7	2.3	3.5	6.3	7.7	16	24	33	42	51	70	110	943K	141	147
2400-3	90KC	5	1	NO	2400-3	100	1.8	2.3	3.1	4.9	6.1	12	17	23	29	35	48	76	1964K	109	209
2400-3	90KC	8	1	NO	2400-3	100	2.0	2.5	3.3	5.0	5.9	11	16	22	28	33	45	69	3010K	87	245
2311	156KC	1	1	NO	2311	125	1.6	2.4	3.4	6.6	7.8	14	21	33	40	48	CE	CE	191K	86	156
2311	156KC	2	1	NO	2311	125	1.6	2.3	3.2	5.8	6.9	13	18	29	35	42	55	81	382K	86	156
2311	156KC	3	1	NO	2311	125	1.7	2.4	3.2	5.8	6.9	13	18	28	35	41	54	80	574K	86	156
2400-1	30KC	3	2	NO	2400-1	80	1.7	2.5	3.7	6.9	8.3	18	27	36	47	56	79	120	877K	93	190
2400-1	30KC	5	2	NO	2400-1	40	1.8	2.4	3.4	5.5	6.6	14	20	28	34	41	58	85	1631K	68	270
2400-1	30KC	8	2	NO	2400-1	40	2.0	2.6	3.5	5.5	6.4	13	18	23	28	34	49	72	2266K	52	292
2400-2	60KC	3	2	NO	2400-2	80	1.7	2.3	3.5	6.2	7.4	16	23	32	41	49	69	110	877K	93	190
2400-2	60KC	5	2	NO	2400-2	40	1.8	2.3	3.2	5.0	6.0	12	17	24	30	36	50	74	1631K	68	270
2400-2	60KC	8	2	NO	2400-2	40	2.0	2.5	3.4	5.3	6.1	12	17	22	27	33	47	68	2266K	52	292
2400-3	90KC	3	2	NO	2400-3	80	1.7	2.3	3.4	6.0	7.2	15	22	30	39	47	65	99	877K	93	190
2400-3	90KC	5	2	NO	2400-3	40	1.8	2.3	3.1	4.9	5.8	12	17	23	29	34	48	70	1631K	68	270
2400-3	90KC	8	2	NO	2400-3	40	2.0	2.5	3.3	5.1	5.9	11	17	21	26	32	45	67	2266K	52	292
2311	156KC	2	2	NO	2311	150	1.6	2.3	3.2	5.8	6.9	13	22	28	35	41	55	100	377K	86	139
2311	156KC	3	2	NO	2311	150	1.7	2.4	3.2	5.8	6.9	13	22	28	35	41	54	100	565K	86	139
2400-1	30KC	3	2	YES	2400-1	80	1.7	2.3	3.4	6.1	7.3	15	23	31	40	48	67	110	877K	93	190
2400-1	30KC	5	2	YES	2400-1	40	1.8	2.3	3.1	4.9	5.8	12	17	23	29	34	48	71	1631K	68	270
2400-1	30KC	8	2	YES	2400-1	40	2.0	2.5	3.3	5.1	5.9	11	17	22	28	34	45	71	2266K	52	292
2400-2	60KC	3	2	YES	2400-2	80	1.7	2.3	3.3	5.9	7.0	15	22	29	38	45	63	95	877K	93	190
2400-2	60KC	5	2	YES	2400-2	40	1.7	2.3	3.0	4.7	5.6	11	16	22	27	32	46	67	1631K	68	270
2400-2	60KC	8	2	YES	2400-2	40	2.0	2.5	3.3	5.0	5.7	11	16	21	27	32	42	67	2266K	52	292
2400-3	90KC	3	2	YES	2400-3	80	1.7	2.2	3.3	5.8	6.9	14	21	29	37	44	62	93	877K	93	190
2400-3	90KC	5	2	YES	2400-3	40	1.7	2.2	3.0	4.7	5.5	11	16	22	27	32	45	66	1631K	68	270
2400-3	90KC	8	2	YES	2400-3	40	2.0	2.5	3.3	4.9	5.6	11	16	20	26	32	42	66	2266K	52	292

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	35	2.8	5.7	12	24	31	66	110	150	190	230	310	CE	232K	32	49
2400-1	30KC	5	1	NO	2400-1	25	2.5	4.4	7.8	16	20	43	65	93	120	140	200	400	496K	27	70
2400-1	30KC	8	1	NO	2400-1	25	2.6	4.5	7.8	16	19	39	63	83	110	140	200	300	752K	21	83
2400-2	60KC	3	1	NO	2400-2	35	2.2	4.0	7.3	15	19	39	61	83	110	140	180	CE	232K	32	49
2400-2	60KC	5	1	NO	2400-2	25	2.2	3.3	5.5	11	13	27	40	57	70	84	120	240	496K	27	70
2400-2	60KC	8	1	NO	2400-2	25	2.4	3.6	5.7	11	13	25	40	53	67	81	130	180	752K	21	83
2400-3	90KC	3	1	NO	2400-3	35	2.1	3.5	6.2	13	16	32	50	69	87	110	150	CE	232K	32	49
2400-3	90KC	5	1	NO	2400-3	25	2.1	3.1	4.8	8.7	11	23	34	48	59	70	100	200	496K	27	70
2400-3	90KC	8	1	NO	2400-3	25	2.3	3.3	5.1	8.9	11	22	34	45	56	68	110	150	752K	21	83
2311	156KC	1	1	NO	2311	30	2.4	3.8	7.8	14	17	CE	CE	CE	CE	CE	CE	CE	48K	21	54
2311	156KC	2	1	NO	2311	30	2.2	3.4	6.5	12	14	34	50	CE	CE	CE	CE	CE	97K	21	54
2311	156KC	3	1	NO	2311	30	2.2	3.2	6.2	11	13	32	47	62	110	CE	CE	CE	145K	21	54
2400-1	30KC	3	2	NO	2400-1	20	2.4	4.6	9.0	18	24	49	78	110	140	170	230	CE	218K	23	60
2400-1	30KC	5	2	NO	2400-1	15	2.3	3.9	6.9	14	17	34	51	67	92	110	150	240	407K	17	83
2400-1	30KC	8	2	NO	2400-1	15	2.5	3.9	5.7	12	14	29	42	55	69	82	130	190	566K	13	89
2400-2	60KC	3	2	NO	2400-2	20	2.0	3.3	6.0	12	15	30	47	64	81	98	140	CE	218K	23	60
2400-2	60KC	5	2	NO	2400-2	15	2.1	3.1	5.0	9.2	11	23	34	44	60	71	94	160	407K	17	83
2400-2	60KC	8	2	NO	2400-2	15	2.3	3.4	4.6	8.4	9.9	21	29	38	47	56	83	130	566K	13	89
2400-3	90KC	3	2	NO	2400-3	20	2.0	3.1	5.5	11	14	27	42	57	72	87	130	CE	218K	23	60
2400-3	90KC	5	2	NO	2400-3	15	2.1	3.0	4.7	8.3	10	20	32	42	56	67	89	150	407K	17	83
2400-3	90KC	8	2	NO	2400-3	15	2.3	3.3	4.5	8.1	9.6	20	28	36	45	53	79	120	566K	13	89
2311	156KC	2	2	NO	2311	40	2.2	3.4	6.5	12	18	34	50	CE	CE	CE	CE	CE	95K	21	45
2311	156KC	3	2	NO	2311	40	2.2	3.2	6.2	11	17	32	47	82	110	CE	CE	CE	142K	21	45
2400-1	30KC	3	2	YES	2400-1	20	2.2	3.9	7.4	15	19	39	62	83	110	130	180	CE	218K	23	60
2400-1	30KC	5	2	YES	2400-1	15	2.2	3.4	5.6	11	13	26	42	55	74	88	150	240	407K	17	83
2400-1	30KC	8	2	YES	2400-1	15	2.4	3.7	5.7	11	13	27	42	55	69	82	130	190	566K	13	89
2400-2	60KC	3	2	YES	2400-2	20	1.9	3.0	5.1	9.3	12	24	38	51	65	78	110	CE	218K	23	60
2400-2	60KC	5	2	YES	2400-2	15	2.0	2.8	4.3	7.6	9.1	18	28	37	49	59	94	160	407K	17	83
2400-2	60KC	8	2	YES	2400-2	15	2.3	3.2	4.6	8.1	9.7	19	29	38	47	56	83	130	566K	13	89
2400-3	90KC	3	2	YES	2400-3	20	1.9	2.9	4.9	8.9	12	23	36	49	62	74	110	CE	218K	23	60
2400-3	90KC	5	2	YES	2400-3	15	2.0	2.8	4.2	7.3	8.7	18	27	36	47	56	89	150	407K	17	83
2400-3	90KC	8	2	YES	2400-3	15	2.2	3.1	4.5	7.9	9.4	19	28	36	45	53	79	120	566K	13	89

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	20	5.7	15	30	66	84	190	290	CE	CE	CE	CE	CE	93K	13	19
2400-1	30KC	5	1	NO	2400-1	15	4.2	9.5	20	41	51	110	180	320	400	470	CE	CE	183K	10	25
2400-1	30KC	8	1	NO	2400-1	15	4.4	9.0	18	38	51	110	180	240	300	350	470	CE	254K	8	31
2400-2	60KC	3	1	NO	2400-2	20	3.7	8.4	17	36	46	98	160	CE	CE	CE	CE	CE	93K	13	19
2400-2	60KC	5	1	NO	2400-2	15	3.0	5.9	12	23	29	60	96	170	220	260	CE	CE	183K	10	25
2400-2	60KC	8	1	NO	2400-2	15	3.3	5.8	11	22	29	57	97	130	160	200	260	CE	254K	8	31
2400-3	90KC	3	1	NO	2400-3	20	3.1	6.6	13	27	34	71	120	CE	CE	CE	CE	CE	93K	13	19
2400-3	90KC	5	1	NO	2400-3	15	2.7	5.0	9.1	18	22	45	72	130	160	190	CE	CE	183K	10	25
2400-3	90KC	8	1	NO	2400-3	15	3.0	5.0	8.8	18	23	44	74	98	130	150	200	CE	254K	8	31
2311	156KC	1	1	NO	2311	15	3.6	8.8	16	CE	CE	CE	CE	CE	CE	CE	CE	CE	18K	8	20
2311	156KC	2	1	NO	2311	15	3.2	7.0	13	31	38	CE	CE	CE	CE	CE	CE	CE	36K	8	20
2311	156KC	3	1	NO	2311	15	2.9	6.4	12	29	35	93	CE	CE	CE	CE	CE	CE	55K	8	20
2400-1	30KC	3	2	NO	2400-1	10	4.5	11	23	48	63	140	210	CE	CE	CE	CE	CE	87K	9	22
2400-1	30KC	5	2	NO	2400-1	10	3.8	8.3	17	35	43	92	150	200	250	300	CE	CE	157K	6	28
2400-1	30KC	8	2	NO	2400-1	10	3.9	7.8	14	29	35	67	120	160	190	230	300	1300	301K	5	30
2400-2	60KC	3	2	NO	2400-2	10	3.1	6.4	13	26	34	71	120	CE	CE	CE	CE	CE	87K	9	22
2400-2	60KC	5	2	NO	2400-2	10	2.8	5.2	9.8	20	24	50	77	110	140	160	CE	CE	157K	6	28
2400-2	60KC	8	2	NO	2400-2	10	3.0	5.2	8.1	17	20	37	62	81	110	120	160	690	301K	5	30
2400-3	90KC	3	2	NO	2400-3	10	2.7	5.2	9.9	20	26	53	83	CE	CE	CE	CE	CE	87K	9	22
2400-3	90KC	5	2	NO	2400-3	10	2.6	4.6	8.4	17	20	41	65	87	110	130	CE	CE	157K	6	28
2400-3	90KC	8	2	NO	2400-3	10	2.9	4.8	7.2	15	17	32	53	69	86	110	140	550	301K	5	30
2311	156KC	2	2	NO	2311	15	3.2	7.0	13	31	38	CE	CE	CE	CE	CE	CE	CE	36K	8	20
2311	156KC	3	2	NO	2311	15	2.9	6.4	12	29	35	93	CE	CE	CE	CE	CE	CE	55K	8	20
2400-1	30KC	3	2	YES	2400-1	10	3.9	8.9	19	38	50	110	170	CE	CE	CE	CE	CE	87K	9	22
2400-1	30KC	5	2	YES	2400-1	10	3.3	6.8	14	28	34	72	150	200	250	300	CE	CE	157K	6	28
2400-1	30KC	8	2	YES	2400-1	10	3.7	6.9	13	27	35	67	120	160	190	230	300	1300	301K	5	30
2400-2	60KC	3	2	YES	2400-2	10	2.7	5.3	11	21	27	56	87	CE	CE	CE	CE	CE	87K	9	22
2400-2	60KC	5	2	YES	2400-2	10	2.5	4.4	7.9	16	19	39	77	110	140	160	CE	CE	157K	6	28
2400-2	60KC	8	2	YES	2400-2	10	2.8	4.5	7.8	15	20	37	62	81	110	120	160	690	301K	5	30
2400-3	90KC	3	2	YES	2400-3	10	2.4	4.4	8.1	16	21	42	66	CE	CE	CE	CE	CE	87K	9	22
2400-3	90KC	5	2	YES	2400-3	10	2.4	4.0	6.9	14	17	33	65	87	110	130	CE	CE	157K	6	28
2400-3	90KC	8	2	YES	2400-3	10	2.8	4.3	7.2	14	17	32	53	69	86	110	140	550	301K	5	30

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	10	16	43	89	190	250	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-1	30KC	5	1	NO	2400-1	10	9.8	27	56	120	150	410	CE	CE	CE	CE	CE	CE	66K	3	7
2400-1	30KC	8	1	NO	2400-1	10	9.7	24	50	110	150	290	500	660	CE	CE	CE	CE	100K	3	8
2400-2	60KC	3	1	NO	2400-2	10	8.9	23	48	99	130	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-2	60KC	5	1	NO	2400-2	10	6.0	15	31	64	80	220	CE	CE	CE	CE	CE	CE	66K	3	7
2400-2	60KC	8	1	NO	2400-2	10	6.1	14	28	58	78	160	270	350	CE	CE	CE	CE	100K	3	8
2400-3	90KC	3	1	NO	2400-3	10	6.7	17	34	70	92	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-3	90KC	5	1	NO	2400-3	10	4.7	11	22	46	57	160	CE	CE	CE	CE	CE	CE	66K	3	7
2400-3	90KC	8	1	NO	2400-3	10	4.9	11	21	43	57	110	190	250	CE	CE	CE	CE	100K	3	8
2311	156KC	1	1	NO	2311	6	12	30	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	7K	7	7
2311	156KC	2	1	NO	2311	6	9.2	23	48	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	7	7
2311	156KC	3	1	NO	2311	6	9.1	22	47	110	CE	CE	CE	CE	CE	CE	CE	CE	21K	7	7
2400-1	30KC	3	2	NO	2400-1	10	22	58	120	270	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-1	30KC	5	2	NO	2400-1	10	14	37	77	170	210	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-1	30KC	8	2	NO	2400-1	10	9.2	23	48	110	150	320	CE	CE	CE	CE	CE	CE	67K	1	10
2400-2	60KC	3	2	NO	2400-2	10	12	31	64	140	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-2	60KC	5	2	NO	2400-2	10	8.0	21	42	87	110	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-2	60KC	8	2	NO	2400-2	10	5.7	13	26	55	76	170	CE	CE	CE	CE	CE	CE	67K	1	10
2400-3	90KC	3	2	NO	2400-3	10	9.9	26	52	120	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-3	90KC	5	2	NO	2400-3	10	6.7	17	34	70	94	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-3	90KC	8	2	NO	2400-3	10	4.9	11	21	44	65	140	CE	CE	CE	CE	CE	CE	67K	1	10
2311	156KC	2	2	NO	2311	6	9.2	23	48	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	7	7
2311	156KC	3	2	NO	2311	6	9.1	22	47	110	CE	CE	CE	CE	CE	CE	CE	CE	21K	7	7
2400-1	30KC	3	2	YES	2400-1	10	18	47	96	210	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-1	30KC	5	2	YES	2400-1	10	12	29	60	130	210	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-1	30KC	8	2	YES	2400-1	10	7.7	18	38	80	150	320	CE	CE	CE	CE	CE	CE	67K	1	10
2400-2	60KC	3	2	YES	2400-2	10	9.7	25	50	110	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-2	60KC	5	2	YES	2400-2	10	6.5	16	32	66	110	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-2	60KC	8	2	YES	2400-2	10	4.9	11	21	42	76	170	CE	CE	CE	CE	CE	CE	67K	1	10
2400-3	90KC	3	2	YES	2400-3	10	8.4	21	43	93	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-3	90KC	5	2	YES	2400-3	10	5.7	14	27	56	94	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-3	90KC	8	2	YES	2400-3	10	4.3	8.6	17	35	65	140	CE	CE	CE	CE	CE	CE	67K	1	10

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	350	1.6	2.2	3.6	6.3	8.1	17	26	36	45	55	76	130	1047K	449	586
2400-1	30KC	5	1	NO	2400-1	350	1.8	2.1	3.0	4.9	6.2	12	18	24	31	39	51	82	2756K	309	695
2400-1	30KC	8	1	NO	2400-1	250	2.1	2.4	3.0	4.7	5.7	12	16	23	28	34	48	71	5564K	304	807
2400-2	60KC	3	1	NO	2400-2	350	1.6	2.1	3.2	5.3	6.8	14	21	29	36	44	61	96	1047K	449	586
2400-2	60KC	5	1	NO	2400-2	350	1.8	2.1	2.8	4.4	5.4	9.9	15	20	25	32	42	67	2756K	309	695
2400-2	60KC	8	1	NO	2400-2	250	2.0	2.4	2.9	4.3	5.1	9.7	14	20	24	28	40	59	5564K	304	807
2400-3	90KC	3	1	NO	2400-3	350	1.6	2.0	3.0	5.0	6.3	13	19	27	34	40	56	88	1047K	449	586
2400-3	90KC	5	1	NO	2400-3	350	1.7	2.0	2.7	4.2	5.1	9.4	14	19	24	30	39	62	2756K	309	695
2400-3	90KC	8	1	NO	2400-3	250	2.0	2.3	2.8	4.1	4.8	9.1	13	18	22	26	37	55	5564K	304	807
2311	156KC	1	1	NO	2311	125	1.5	1.8	2.3	4.0	4.6	8.0	12	15	23	27	35	CE	218K	181	880
2311	156KC	2	1	NO	2311	125	1.5	1.8	2.3	3.9	4.5	7.8	12	15	22	26	34	52	436K	181	880
2311	156KC	3	1	NO	2311	125	1.5	1.8	2.3	3.9	4.5	7.8	12	15	22	26	34	52	655K	181	880
2400-1	30KC	3	2	NO	2400-1	200	1.6	2.1	3.0	5.4	6.4	14	21	28	36	44	61	97	1025K	312	592
2400-1	30KC	5	2	NO	2400-1	125	1.8	2.1	2.8	4.4	5.6	11	15	21	26	31	44	67	2740K	230	921
2400-1	30KC	8	2	NO	2400-1	125	2.0	2.3	2.9	4.4	5.2	9.9	14	18	23	30	39	58	4914K	182	923
2400-2	60KC	3	2	NO	2400-2	200	1.6	2.0	2.9	4.9	5.9	12	19	25	32	39	54	86	1025K	312	592
2400-2	60KC	5	2	NO	2400-2	125	1.7	2.0	2.7	4.1	5.1	9.4	14	19	23	28	39	59	2740K	230	921
2400-2	60KC	8	2	NO	2400-2	125	2.0	2.3	2.8	4.2	4.8	9.3	13	18	22	27	38	55	4914K	182	923
2400-3	90KC	3	2	NO	2400-3	200	1.5	2.0	2.8	4.8	5.7	12	18	24	31	37	52	82	1025K	312	592
2400-3	90KC	5	2	NO	2400-3	125	1.7	2.0	2.7	4.0	5.0	9.1	13	18	23	27	38	57	2740K	230	921
2400-3	90KC	8	2	NO	2400-3	125	2.0	2.3	2.8	4.1	4.7	9.0	13	17	22	26	36	53	4914K	182	923
2311	156KC	2	2	NO	2311	125	1.5	2.0	2.6	3.8	4.3	8.6	13	16	22	27	35	52	434K	181	798
2311	156KC	3	2	NO	2311	125	1.5	1.9	2.5	3.6	4.2	8.2	12	15	21	26	34	49	651K	181	798
2400-1	30KC	3	2	YES	2400-1	200	1.6	2.0	2.8	4.9	5.8	12	19	24	32	38	53	84	1025K	312	592
2400-1	30KC	5	2	YES	2400-1	125	1.7	2.0	2.7	4.1	5.1	9.2	13	19	23	27	38	57	2740K	230	921
2400-1	30KC	8	2	YES	2400-1	125	2.0	2.3	2.8	4.1	4.7	9.0	13	18	22	26	37	54	4914K	182	923
2400-2	60KC	3	2	YES	2400-2	200	1.5	2.0	2.8	4.7	5.6	12	18	23	30	36	50	79	1025K	312	592
2400-2	60KC	5	2	YES	2400-2	125	1.7	2.0	2.6	4.0	4.9	8.9	13	18	22	26	37	55	2740K	230	921
2400-2	60KC	8	2	YES	2400-2	125	2.0	2.3	2.8	4.0	4.6	8.7	13	17	21	25	35	52	4914K	182	923
2400-3	90KC	3	2	YES	2400-3	200	1.5	2.0	2.7	4.6	5.5	11	17	23	30	35	49	78	1025K	312	592
2400-3	90KC	5	2	YES	2400-3	125	1.7	2.0	2.6	3.9	4.9	8.7	13	18	22	26	36	54	2740K	230	921
2400-3	90KC	8	2	YES	2400-3	125	2.0	2.3	2.8	4.0	4.6	8.6	12	17	21	25	35	51	4914K	182	923

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	85	2.2	4.1	8.2	17	22	48	76	110	140	170	240	CE	258K	88	205
2400-1	30KC	5	1	NO	2400-1	50	2.0	3.4	5.8	12	14	30	47	68	85	110	150	240	749K	92	263
2400-1	30KC	8	1	NO	2400-1	50	2.3	3.4	5.6	11	13	27	43	56	77	92	130	210	1424K	76	284
2400-2	60KC	3	1	NO	2400-2	85	1.9	3.1	5.4	11	14	29	45	62	79	98	140	CE	258K	88	205
2400-2	60KC	5	1	NO	2400-2	50	1.9	2.8	4.3	7.6	9.3	19	30	42	52	62	89	150	749K	92	263
2400-2	60KC	8	1	NO	2400-2	50	2.2	2.9	4.3	7.4	8.7	18	28	36	49	58	77	130	1424K	76	284
2400-3	90KC	3	1	NO	2400-3	85	1.8	2.8	4.7	8.9	12	24	37	51	65	81	110	CE	258K	88	205
2400-3	90KC	5	1	NO	2400-3	50	1.8	2.6	3.9	6.6	8.1	17	25	35	44	52	74	120	749K	92	263
2400-3	90KC	8	1	NO	2400-3	50	2.1	2.8	4.0	6.5	7.7	15	24	31	41	49	65	110	1424K	76	284
2311	156KC	1	1	NO	2311	30	1.6	2.5	3.6	5.8	7.0	18	CE	CE	CE	CE	CE	CE	55K	45	298
2311	156KC	2	1	NO	2311	30	1.6	2.4	3.5	5.6	6.6	17	24	32	CE	CE	CE	CE	110K	45	298
2311	156KC	3	1	NO	2311	30	1.6	2.4	3.5	5.5	6.6	17	24	32	39	47	CE	CE	165K	45	298
2400-1	30KC	3	2	NO	2400-1	45	2.0	3.4	6.4	13	17	35	55	76	97	120	170	CE	256K	77	208
2400-1	30KC	5	2	NO	2400-1	30	1.9	3.0	4.7	9.1	11	23	37	50	63	79	110	170	700K	57	319
2400-1	30KC	8	2	NO	2400-1	30	2.2	3.1	4.3	8.0	9.5	21	30	39	48	57	87	130	1273K	45	314
2400-2	60KC	3	2	NO	2400-2	45	1.8	2.6	4.4	8.0	11	21	33	46	57	71	96	CE	256K	77	208
2400-2	60KC	5	2	NO	2400-2	30	1.8	2.6	3.7	6.5	7.7	16	24	32	41	50	69	110	700K	57	319
2400-2	60KC	8	2	NO	2400-2	30	2.1	2.7	3.6	6.1	7.1	15	21	27	32	39	57	85	1273K	45	314
2400-3	90KC	3	2	NO	2400-3	45	1.7	2.5	4.1	7.3	9.4	19	29	41	51	63	86	CE	256K	77	208
2400-3	90KC	5	2	NO	2400-3	30	1.8	2.5	3.6	6.0	7.1	14	22	29	38	45	63	97	700K	57	319
2400-3	90KC	8	2	NO	2400-3	30	2.1	2.7	3.6	6.0	6.9	14	20	25	31	37	55	81	1273K	45	314
2311	156KC	2	2	NO	2311	30	1.7	2.3	3.6	5.8	6.9	16	23	30	CE	CE	CE	CE	109K	45	272
2311	156KC	3	2	NO	2311	30	1.7	2.1	3.3	5.2	6.1	14	20	26	33	51	CE	CE	164K	45	272
2400-1	30KC	3	2	YES	2400-1	45	1.9	3.0	5.4	11	13	28	44	60	77	94	140	CE	256K	77	208
2400-1	30KC	5	2	YES	2400-1	30	1.9	2.7	4.1	7.3	8.7	18	29	38	50	60	84	150	700K	57	319
2400-1	30KC	8	2	YES	2400-1	30	2.1	2.8	4.1	7.0	8.3	17	26	34	46	55	73	130	1273K	45	314
2400-2	60KC	3	2	YES	2400-2	45	1.7	2.4	3.8	6.8	8.6	17	27	37	46	56	77	CE	256K	77	208
2400-2	60KC	5	2	YES	2400-2	30	1.8	2.4	3.4	5.5	6.5	13	20	26	34	40	56	92	700K	57	319
2400-2	60KC	8	2	YES	2400-2	30	2.1	2.6	3.6	5.6	6.6	13	19	25	32	39	52	85	1273K	45	314
2400-3	90KC	3	2	YES	2400-3	45	1.7	2.4	3.7	6.5	8.3	17	25	35	44	54	73	CE	256K	77	208
2400-3	90KC	5	2	YES	2400-3	30	1.8	2.4	3.3	5.3	6.3	12	19	25	32	38	54	88	700K	57	319
2400-3	90KC	8	2	YES	2400-3	30	2.1	2.6	3.5	5.5	6.4	12	19	24	31	37	50	81	1273K	45	314

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	30	3.9	9.4	21	45	59	130	210	290	CE	CE	CE	CE	104K	46	98
2400-1	30KC	5	1	NO	2400-1	25	3.3	6.6	13	28	37	79	130	180	240	300	400	CE	298K	36	104
2400-1	30KC	8	1	NO	2400-1	25	3.2	6.1	12	25	32	69	110	170	210	260	340	510	565K	30	117
2400-2	60KC	3	1	NO	2400-2	30	2.8	5.7	12	25	32	68	110	160	CE	CE	CE	CE	104K	46	98
2400-2	60KC	5	1	NO	2400-2	25	2.5	4.3	7.8	16	21	44	67	93	130	160	220	CE	298K	36	104
2400-2	60KC	8	1	NO	2400-2	25	2.6	4.2	7.3	15	19	39	59	91	120	140	190	280	565K	30	117
2400-3	90KC	3	1	NO	2400-3	30	2.4	4.5	8.9	18	24	49	77	110	CE	CE	CE	CE	104K	46	98
2400-3	90KC	5	1	NO	2400-3	25	2.3	3.6	6.2	13	16	32	50	68	93	120	160	CE	298K	36	104
2400-3	90KC	8	1	NO	2400-3	25	2.5	3.7	5.9	11	15	30	44	69	83	110	140	210	565K	30	117
2311	156KC	1	1	NO	2311	15	2.2	3.5	5.6	15	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	125
2311	156KC	2	1	NO	2311	15	2.2	3.3	5.3	14	17	CE	CE	CE	CE	CE	CE	CE	44K	18	125
2311	156KC	3	1	NO	2311	15	2.1	3.2	5.0	13	16	30	CE	CE	CE	CE	CE	CE	66K	18	125
2400-1	30KC	3	2	NO	2400-1	20	3.2	7.3	16	33	42	92	150	210	CE	CE	CE	CE	102K	31	98
2400-1	30KC	5	2	NO	2400-1	15	2.9	5.4	11	22	27	60	93	130	170	200	310	CE	279K	19	120
2400-1	30KC	8	2	NO	2400-1	15	3.0	5.3	9.0	20	24	45	77	110	130	160	210	420	509K	18	129
2400-2	60KC	3	2	NO	2400-2	20	2.4	4.5	8.7	18	23	50	79	120	CE	CE	CE	CE	102K	31	98
2400-2	60KC	5	2	NO	2400-2	15	2.3	3.7	6.3	13	16	33	51	70	86	110	170	CE	279K	19	120
2400-2	60KC	8	2	NO	2400-2	15	2.5	3.8	5.8	12	14	25	42	56	69	82	110	230	509K	18	129
2400-3	90KC	3	2	NO	2400-3	20	2.1	3.7	6.7	14	17	36	57	79	CE	CE	CE	CE	102K	31	98
2400-3	90KC	5	2	NO	2400-3	15	2.2	3.2	5.2	9.6	12	25	38	51	63	77	130	CE	279K	19	120
2400-3	90KC	8	2	NO	2400-3	15	2.4	3.4	4.9	9.1	11	20	32	42	52	62	81	180	509K	18	129
2311	156KC	2	2	NO	2311	15	2.0	3.6	5.6	13	16	CE	CE	CE	CE	CE	CE	CE	43K	18	110
2311	156KC	3	2	NO	2311	15	1.9	3.2	4.8	12	14	26	CE	CE	CE	CE	CE	CE	65K	18	110
2400-1	30KC	3	2	YES	2400-1	20	2.9	6.1	13	27	34	74	120	170	CE	CE	CE	CE	102K	31	98
2400-1	30KC	5	2	YES	2400-1	15	2.6	4.5	8.2	17	23	48	71	120	140	180	250	CE	279K	19	120
2400-1	30KC	8	2	YES	2400-1	15	2.7	4.5	7.8	16	20	42	65	110	130	160	210	320	509K	18	129
2400-2	60KC	3	2	YES	2400-2	20	2.2	3.9	7.1	15	19	40	62	88	CE	CE	CE	CE	102K	31	98
2400-2	60KC	5	2	YES	2400-2	15	2.2	3.2	5.2	9.6	13	26	39	60	75	94	130	CE	279K	19	120
2400-2	60KC	8	2	YES	2400-2	15	2.4	3.3	5.1	9.2	12	23	36	56	68	82	110	170	509K	18	129
2400-3	90KC	3	2	YES	2400-3	20	2.0	3.2	5.6	11	14	29	45	63	CE	CE	CE	CE	102K	31	98
2400-3	90KC	5	2	YES	2400-3	15	2.1	2.9	4.4	7.7	10	20	36	46	57	71	97	CE	279K	19	120
2400-3	90KC	8	2	YES	2400-3	15	2.3	3.1	4.6	7.9	9.7	20	29	42	52	62	81	140	509K	18	129

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	5.7	15	32	67	87	CE	CE	CE	CE	CE	CE	CE	41K	15	33
2400-2	60KC	5	1	NO	2400-2	15	4.2	9.6	20	41	52	130	200	290	CE	CE	CE	CE	116K	14	40
2400-2	60KC	8	1	NO	2400-2	15	4.0	9.0	18	38	46	110	170	220	280	350	510	CE	222K	8	49
2400-3	90KC	3	1	NO	2400-3	20	4.4	11	23	47	61	CE	CE	CE	CE	CE	CE	CE	41K	15	33
2400-3	90KC	5	1	NO	2400-3	15	3.4	7.2	14	29	37	85	140	210	CE	CE	CE	CE	116K	14	40
2400-3	90KC	8	1	NO	2400-3	15	3.4	6.9	14	27	33	76	120	160	200	250	360	CE	222K	8	49
2311	156KC	1	1	NO	2311	6	3.3	6.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	51
2311	156KC	2	1	NO	2311	6	3.1	5.8	15	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	51
2311	156KC	3	1	NO	2311	6	2.9	5.2	14	27	33	CE	CE	CE	CE	CE	CE	CE	25K	7	51
2400-1	30KC	3	2	NO	2400-1	10	7.3	20	43	92	130	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-1	30KC	5	2	NO	2400-1	10	5.6	14	29	61	75	170	270	460	CE	CE	CE	CE	106K	9	40
2400-1	30KC	8	2	NO	2400-1	10	5.2	11	24	44	64	130	190	290	490	620	CE	CE	179K	7	45
2400-2	60KC	3	2	NO	2400-2	10	4.4	11	23	48	63	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	5	2	NO	2400-2	10	3.7	7.8	16	32	40	84	140	240	CE	CE	CE	CE	106K	9	40
2400-2	60KC	8	2	NO	2400-2	10	3.7	6.4	13	24	34	65	97	150	260	330	CE	CE	179K	7	45
2400-3	90KC	3	2	NO	2400-3	10	3.5	7.8	17	34	44	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	5	2	NO	2400-3	10	3.1	5.9	12	23	29	59	94	170	CE	CE	CE	CE	106K	9	40
2400-3	90KC	8	2	NO	2400-3	10	3.2	5.1	9.7	17	25	46	68	110	190	240	CE	CE	179K	7	45
2311	156KC	2	2	NO	2311	6	3.4	6.1	15	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	45
2311	156KC	3	2	NO	2311	6	3.0	5.1	13	24	43	CE	CE	CE	CE	CE	CE	CE	25K	7	45
2400-1	30KC	3	2	YES	2400-1	10	6.1	16	35	74	97	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-1	30KC	5	2	YES	2400-1	10	4.7	11	23	47	58	160	240	370	CE	CE	CE	CE	106K	9	40
2400-1	30KC	8	2	YES	2400-1	10	4.5	11	21	44	55	130	190	290	390	490	CE	CE	179K	7	45
2400-2	60KC	3	2	YES	2400-2	10	3.8	8.7	19	39	50	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	5	2	YES	2400-2	10	3.2	6.3	12	25	31	78	130	190	CE	CE	CE	CE	106K	9	40
2400-2	60KC	8	2	YES	2400-2	10	3.2	6.3	12	24	29	65	97	150	200	250	CE	CE	179K	7	45
2400-3	90KC	3	2	YES	2400-3	10	3.1	6.4	13	27	35	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	5	2	YES	2400-3	10	2.7	4.9	8.9	18	22	55	84	130	CE	CE	CE	CE	106K	9	40
2400-3	90KC	8	2	YES	2400-3	10	2.9	5.0	8.7	17	21	46	68	110	150	190	CE	CE	179K	7	45
2400-1	30KC	3	1	NO	2400-1	20	9.5	27	59	130	170	CE	CE	CE	CE	CE	CE	CE	41K	15	33
2400-1	30KC	5	1	NO	2400-1	15	6.5	17	36	77	98	230	370	550	CE	CE	CE	CE	116K	14	40
2400-1	30KC	8	1	NO	2400-1	15	5.9	16	33	69	86	200	310	420	520	650	960	CE	222K	8	49

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	150	1.5	2.1	3.3	6.2	7.7	16	25	34	44	53	73	120	943K	141	147
2400-1	30KC	4	1	NO	2400-1	150	1.5	2.0	2.9	4.9	6.1	12	19	25	32	39	53	82	1324K	122	153
2400-1	30KC	6	1	NO	2400-1	100	1.5	2.0	2.8	4.5	5.3	11	16	21	28	33	44	70	2416K	98	225
2400-1	30KC	8	1	NO	2400-1	100	1.7	2.1	2.8	4.4	5.3	11	16	21	27	32	45	67	3010K	87	245
2400-2	60KC	3	1	NO	2400-2	150	1.4	1.8	2.6	4.5	5.5	11	17	23	29	35	48	75	943K	141	147
2400-2	60KC	4	1	NO	2400-2	150	1.4	1.8	2.4	3.8	4.6	8.4	13	17	22	27	36	56	1324K	122	153
2400-2	60KC	6	1	NO	2400-2	100	1.5	1.9	2.4	3.6	4.2	7.4	12	15	20	23	31	48	2416K	98	225
2400-2	60KC	8	1	NO	2400-2	100	1.6	1.9	2.5	3.6	4.2	7.5	11	15	19	23	31	47	3010K	87	245
2400-3	90KC	3	1	NO	2400-3	150	1.4	1.7	2.4	4.0	4.8	9.4	15	20	25	30	41	64	943K	141	147
2400-3	90KC	4	1	NO	2400-3	150	1.4	1.7	2.2	3.4	4.1	7.5	12	15	19	23	31	48	1324K	122	153
2400-3	90KC	6	1	NO	2400-3	100	1.5	1.8	2.3	3.3	3.8	6.6	10	13	17	20	27	42	2416K	98	225
2400-3	90KC	8	1	NO	2400-3	100	1.6	1.9	2.4	3.4	3.9	6.7	9.7	13	17	20	27	41	3010K	87	245
2311	156KC	1	1	NO	2311	125	1.3	1.9	2.6	4.9	5.7	9.8	14	23	29	34	CE	CE	191K	86	156
2311	156KC	2	1	NO	2311	125	1.3	1.8	2.3	4.1	4.7	8.0	12	19	23	28	36	53	382K	86	156
2311	156KC	3	1	NO	2311	125	1.3	1.8	2.3	4.0	4.6	7.8	11	19	23	27	35	52	574K	86	156
2400-1	30KC	3	2	NO	2400-1	80	1.4	1.9	2.8	5.0	5.9	13	19	25	33	39	55	84	877K	93	190
2400-1	30KC	4	2	NO	2400-1	80	1.4	1.8	2.5	4.0	5.0	9.5	15	20	24	31	40	64	1003K	92	201
2400-1	30KC	6	2	NO	2400-1	40	1.5	1.9	2.6	4.1	4.8	8.9	13	16	20	26	34	50	1831K	67	281
2400-1	30KC	8	2	NO	2400-1	40	1.6	2.0	2.6	3.9	4.4	8.3	12	15	18	23	32	46	2266K	52	292
2400-2	60KC	3	2	NO	2400-2	80	1.4	1.7	2.3	3.9	4.6	8.9	14	18	24	28	39	58	877K	93	190
2400-2	60KC	4	2	NO	2400-2	80	1.4	1.7	2.2	3.3	4.0	7.2	11	15	18	23	29	46	1003K	92	201
2400-2	60KC	6	2	NO	2400-2	40	1.5	1.8	2.3	3.4	3.9	6.9	11	13	16	21	27	39	1831K	67	281
2400-2	60KC	8	2	NO	2400-2	40	1.6	1.9	2.4	3.4	3.9	6.9	9.4	12	15	18	25	36	2266K	52	292
2400-3	90KC	3	2	NO	2400-3	80	1.3	1.7	2.2	3.6	4.3	8.2	13	17	22	26	35	53	877K	93	190
2400-3	90KC	4	2	NO	2400-3	80	1.4	1.7	2.1	3.1	3.8	6.8	9.8	14	16	21	27	42	1003K	92	201
2400-3	90KC	6	2	NO	2400-3	40	1.5	1.7	2.3	3.3	3.7	6.4	9.5	13	15	19	25	37	1831K	67	281
2400-3	90KC	8	2	NO	2400-3	40	1.6	1.9	2.3	3.3	3.8	6.4	9.1	12	14	17	24	35	2266K	52	292
2311	156KC	2	2	NO	2311	150	1.3	1.8	2.3	4.1	4.7	8.0	15	19	23	28	36	69	377K	86	139
2311	156KC	3	2	NO	2311	150	1.3	1.8	2.3	4.0	4.7	7.8	15	19	23	27	35	67	565K	86	139
2400-1	30KC	3	2	YES	2400-1	80	1.4	1.8	2.5	4.2	5.0	10	15	20	27	32	44	67	877K	93	190
2400-1	30KC	4	2	YES	2400-1	80	1.4	1.7	2.3	3.5	4.3	7.8	12	16	20	25	32	51	1003K	92	201
2400-1	30KC	6	2	YES	2400-1	40	1.5	1.8	2.4	3.5	4.0	7.1	11	14	18	22	29	46	1831K	67	281
2400-1	30KC	8	2	YES	2400-1	40	1.6	1.9	2.5	3.5	4.0	7.1	11	14	18	22	29	45	2266K	52	292
2400-2	60KC	3	2	YES	2400-2	80	1.3	1.6	2.2	3.5	4.1	7.8	12	16	20	24	33	49	877K	93	190
2400-2	60KC	4	2	YES	2400-2	80	1.4	1.6	2.1	3.0	3.6	6.4	9.1	13	15	19	25	40	1003K	92	201
2400-2	60KC	6	2	YES	2400-2	40	1.5	1.7	2.2	3.1	3.5	6.0	8.8	12	14	18	23	36	1831K	67	281
2400-2	60KC	8	2	YES	2400-2	40	1.6	1.9	2.3	3.2	3.6	5.9	8.7	12	15	18	23	35	2266K	52	292
2400-3	90KC	3	2	YES	2400-3	80	1.3	1.6	2.1	3.4	3.9	7.5	11	15	19	23	32	47	877K	93	190
2400-3	90KC	4	2	YES	2400-3	80	1.4	1.6	2.0	2.9	3.5	6.2	8.8	12	15	19	24	38	1003K	92	201
2400-3	90KC	6	2	YES	2400-3	40	1.5	1.7	2.2	3.0	3.4	5.8	8.5	11	14	17	22	35	1831K	67	281
2400-3	90KC	8	2	YES	2400-3	40	1.6	1.9	2.3	3.1	3.5	5.8	8.5	11	14	17	22	34	2266K	52	292

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2311	156KC	1	1	NO	2311	30	2.1	3.2	6.7	12	15	CE	CE	CE	CE	CE	CE	CE	48K	21	54
2311	156KC	2	1	NO	2311	30	1.9	2.8	5.3	9.2	12	28	41	CE	CE	CE	CE	CE	97K	21	54
2311	156KC	3	1	NO	2311	30	1.8	2.6	4.8	8.1	9.8	25	37	49	83	CE	CE	CE	145K	21	54
2400-1	30KC	3	1	NO	2400-1	35	2.5	5.3	11	23	29	62	97	140	180	220	290	CE	232K	32	49
2400-1	30KC	4	1	NO	2400-1	35	2.2	4.2	7.8	17	22	45	71	95	130	160	210	530	345K	31	53
2400-1	30KC	6	1	NO	2400-1	25	2.2	3.8	7.0	14	18	38	59	81	100	130	180	310	630K	24	76
2400-1	30KC	8	1	NO	2400-1	25	2.2	4.0	7.1	14	18	36	59	78	98	130	190	280	752K	21	83
2400-2	60KC	3	1	NO	2400-2	35	1.9	3.4	6.2	13	16	34	53	73	92	120	160	CE	232K	32	49
2400-2	60KC	4	1	NO	2400-2	35	1.8	2.9	4.8	9.2	12	25	39	52	66	82	110	280	345K	31	53
2400-2	60KC	6	1	NO	2400-2	25	1.9	2.7	4.5	8.2	11	21	33	44	55	69	94	170	630K	24	76
2400-2	60KC	8	1	NO	2400-2	25	1.9	2.9	4.6	8.3	10	21	33	43	54	67	110	150	752K	21	83
2400-3	90KC	3	1	NO	2400-3	35	1.7	2.8	4.8	9.2	12	25	38	52	66	82	110	CE	232K	32	49
2400-3	90KC	4	1	NO	2400-3	35	1.7	2.4	3.9	7.1	9.0	18	28	38	48	60	79	200	345K	31	53
2400-3	90KC	6	1	NO	2400-3	25	1.8	2.4	3.7	6.4	7.9	16	24	33	41	51	69	120	630K	24	76
2400-3	90KC	8	1	NO	2400-3	25	1.8	2.6	3.8	6.6	7.8	16	24	32	40	50	74	110	752K	21	83
2311	156KC	2	2	NO	2311	40	1.9	2.8	5.4	9.2	15	28	41	CE	CE	CE	CE	CE	95K	21	45
2311	156KC	3	2	NO	2311	40	1.8	2.6	4.8	8.2	14	26	37	67	84	CE	CE	CE	142K	21	45
2400-1	30KC	3	2	NO	2400-1	20	2.2	4.2	8.5	17	22	47	74	110	130	160	220	CE	218K	23	60
2400-1	30KC	4	2	NO	2400-1	20	2.0	3.6	6.5	13	17	36	53	76	94	120	170	CE	250K	23	68
2400-1	30KC	6	2	NO	2400-1	15	2.1	3.4	5.9	12	15	30	44	58	77	97	130	200	441K	16	86
2400-1	30KC	8	2	NO	2400-1	15	2.1	3.5	5.3	11	13	28	41	53	66	79	120	180	566K	13	89
2400-2	60KC	3	2	NO	2400-2	20	1.7	2.8	5.0	9.5	13	25	40	54	69	83	120	CE	218K	23	60
2400-2	60KC	4	2	NO	2400-2	20	1.7	2.5	4.0	7.4	9.4	20	29	41	51	62	86	CE	250K	23	68
2400-2	60KC	6	2	NO	2400-2	15	1.8	2.5	3.9	6.9	8.4	17	24	32	42	52	68	110	441K	16	86
2400-2	60KC	8	2	NO	2400-2	15	1.9	2.7	3.6	6.5	7.7	16	23	29	36	43	64	94	566K	13	89
2400-3	90KC	3	2	NO	2400-3	20	1.6	2.4	3.9	7.1	9.0	19	29	39	50	60	83	CE	218K	23	60
2400-3	90KC	4	2	NO	2400-3	20	1.6	2.2	3.3	5.7	7.2	15	21	30	37	45	62	CE	250K	23	68
2400-3	90KC	6	2	NO	2400-3	15	1.7	2.2	3.3	5.5	6.7	13	19	24	31	38	50	74	441K	16	86
2400-3	90KC	8	2	NO	2400-3	15	1.8	2.5	3.2	5.4	6.2	12	17	22	27	32	47	70	566K	13	89
2400-1	30KC	3	2	YES	2400-1	20	2.0	3.6	7.0	14	18	38	60	81	110	130	180	CE	218K	23	60
2400-1	30KC	4	2	YES	2400-1	20	1.8	3.1	5.4	11	14	29	43	61	76	93	130	CE	250K	23	68
2400-1	30KC	6	2	YES	2400-1	15	2.0	3.0	4.9	9.2	13	26	38	54	67	80	130	200	441K	16	86
2400-1	30KC	8	2	YES	2400-1	15	2.0	3.3	5.3	11	13	26	41	53	66	79	120	180	566K	13	89
2400-2	60KC	3	2	YES	2400-2	20	1.6	2.5	4.2	7.8	9.8	20	32	43	55	66	92	CE	218K	23	60
2400-2	60KC	4	2	YES	2400-2	20	1.6	2.3	3.5	6.1	7.7	16	23	33	40	49	68	CE	250K	23	68
2400-2	60KC	6	2	YES	2400-2	15	1.7	2.2	3.3	5.5	7.1	14	21	29	36	43	68	110	441K	16	86
2400-2	60KC	8	2	YES	2400-2	15	1.8	2.5	3.6	6.1	7.2	14	22	29	36	43	64	94	566K	13	89
2400-3	90KC	3	2	YES	2400-3	20	1.5	2.1	3.4	5.9	7.4	15	23	31	39	47	65	CE	218K	23	60
2400-3	90KC	4	2	YES	2400-3	20	1.5	2.0	2.9	4.8	5.9	12	17	24	30	36	49	CE	250K	23	68
2400-3	90KC	6	2	YES	2400-3	15	1.7	2.1	2.8	4.5	5.7	11	16	22	27	32	50	74	441K	16	86
2400-3	90KC	8	2	YES	2400-3	15	1.8	2.3	3.1	4.9	5.8	11	17	22	27	32	47	70	566K	13	89

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2311	156KC	1	1	NO	2311	15	3.2	8.0	15	CE	CE	CE	CE	CE	CE	CE	CE	CE	18K	8	20
2311	156KC	2	1	NO	2311	15	2.8	6.3	11	28	35	CE	CE	CE	CE	CE	CE	CE	36K	8	20
2311	156KC	3	1	NO	2311	15	2.5	5.5	9.5	25	31	83	CE	CE	CE	CE	CE	CE	55K	8	20
2400-1	30KC	3	2	NO	2400-1	10	4.2	11	23	46	61	130	210	CE	CE	CE	CE	CE	87K	9	22
2400-1	30KC	4	2	NO	2400-1	10	3.5	8.2	17	35	44	92	150	CE	CE	CE	CE	CE	87K	9	24
2400-1	30KC	6	2	NO	2400-1	10	3.7	7.8	15	30	37	81	130	160	230	270	670	CE	245K	6	29
2400-1	30KC	8	2	NO	2400-1	10	3.5	7.4	13	28	34	66	120	150	190	230	300	1200	301K	5	30
2400-1	30KC	3	1	NO	2400-1	20	5.3	14	29	63	81	180	280	CE	CE	CE	CE	CE	93K	13	19
2400-1	30KC	4	1	NO	2400-1	20	4.3	11	21	45	58	130	200	480	CE	CE	CE	CE	122K	10	20
2400-1	30KC	6	1	NO	2400-1	15	4.0	8.6	18	37	46	99	160	250	330	410	960	CE	200K	10	26
2400-1	30KC	8	1	NO	2400-1	15	4.0	8.4	17	36	49	99	170	230	290	340	450	CE	254K	8	31
2400-2	60KC	3	1	NO	2400-2	20	3.4	7.7	16	34	43	92	150	CE	CE	CE	CE	CE	93K	13	19
2400-2	60KC	4	1	NO	2400-2	20	2.8	5.9	12	24	31	66	110	250	CE	CE	CE	CE	122K	10	20
2400-2	60KC	6	1	NO	2400-2	15	2.8	5.2	9.8	20	25	53	84	130	180	220	510	CE	200K	10	28
2400-2	60KC	8	1	NO	2400-2	15	2.8	5.2	9.7	20	27	53	90	120	150	180	240	CE	254K	8	31
2400-3	90KC	3	1	NO	2400-3	20	2.7	5.7	12	24	30	64	100	CE	CE	CE	CE	CE	93K	13	19
2400-3	90KC	4	1	NO	2400-3	20	2.4	4.5	8.3	17	22	46	71	180	CE	CE	CE	CE	122K	10	20
2400-3	90KC	6	1	NO	2400-3	15	2.4	4.1	7.3	15	18	37	59	91	130	150	360	CE	200K	10	26
2400-3	90KC	8	1	NO	2400-3	15	2.5	4.1	7.2	15	19	38	64	84	110	130	170	CE	254K	8	31
2400-2	60KC	3	2	NO	2400-2	10	2.8	5.9	12	25	32	67	110	CE	CE	CE	CE	CE	87K	9	22
2400-2	60KC	4	2	NO	2400-2	10	2.4	4.8	9.2	19	23	48	77	CE	CE	CE	CE	CE	87K	9	24
2400-2	60KC	6	2	NO	2400-2	10	2.6	4.7	8.2	17	20	43	63	83	120	140	350	CE	245K	6	29
2400-2	60KC	8	2	NO	2400-2	10	2.6	4.7	7.5	16	19	35	59	77	96	120	160	620	301K	5	30
2400-3	90KC	3	2	NO	2400-3	10	2.3	4.4	8.6	17	23	46	73	CE	CE	CE	CE	CE	87K	9	22
2400-3	90KC	4	2	NO	2400-3	10	2.1	3.7	6.7	14	17	34	53	CE	CE	CE	CE	CE	87K	9	24
2400-3	90KC	6	2	NO	2400-3	10	2.2	3.7	6.2	12	15	30	44	57	79	94	250	CE	245K	6	29
2400-3	90KC	8	2	NO	2400-3	10	2.4	3.8	5.7	11	14	25	41	53	66	79	110	430	301K	5	30
2311	156KC	2	2	NO	2311	15	2.8	6.3	11	28	35	CE	CE	CE	CE	CE	CE	CE	36K	8	20
2311	156KC	3	2	NO	2311	15	2.5	5.5	9.5	25	31	83	CE	CE	CE	CE	CE	CE	55K	8	20
2400-1	30KC	3	2	YES	2400-1	10	3.6	8.5	18	38	50	110	170	CE	CE	CE	CE	CE	87K	9	22
2400-1	30KC	4	2	YES	2400-1	10	3.1	6.8	14	29	35	74	120	CE	CE	CE	CE	CE	87K	9	24
2400-1	30KC	6	2	YES	2400-1	10	3.2	6.4	13	26	32	68	130	160	230	270	670	CE	245K	6	29
2400-1	30KC	8	2	YES	2400-1	10	3.3	6.4	13	26	34	66	120	150	190	230	300	1200	301K	5	30
2400-2	60KC	3	2	YES	2400-2	10	2.4	4.9	9.7	20	26	53	84	CE	CE	CE	CE	CE	87K	9	22
2400-2	60KC	4	2	YES	2400-2	10	2.2	4.1	7.6	15	19	39	61	CE	CE	CE	CE	CE	87K	9	24
2400-2	60KC	6	2	YES	2400-2	10	2.3	4.0	7.1	14	17	36	63	83	120	140	350	CE	245K	6	29
2400-2	60KC	8	2	YES	2400-2	10	2.5	4.1	7.2	14	19	35	59	77	96	120	160	620	301K	5	30
2400-3	90KC	3	2	YES	2400-3	10	2.0	3.7	7.0	14	18	37	57	CE	CE	CE	CE	CE	87K	9	22
2400-3	90KC	4	2	YES	2400-3	10	1.9	3.2	5.6	11	13	27	42	CE	CE	CE	CE	CE	87K	9	24
2400-3	90KC	6	2	YES	2400-3	10	2.1	3.2	5.3	9.8	12	25	44	57	79	94	250	CE	245K	6	29
2400-3	90KC	8	2	YES	2400-3	10	2.2	3.3	5.4	10	14	25	41	53	66	79	110	430	301K	5	30

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	
2400-1	30KC	3	1	NO	2400-1	10	15	41	87	190	240	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-1	30KC	4	1	NO	2400-1	10	11	28	59	140	170	CE	CE	CE	CE	CE	CE	CE	45K	3	7
2400-1	30KC	6	1	NO	2400-1	10	9.2	23	49	110	140	340	CE	CE	CE	CE	CE	CE	71K	4	6
2400-1	30KC	8	1	NO	2400-1	10	9.1	23	48	110	140	290	480	640	CE	CE	CE	CE	100K	3	8
2400-2	60KC	3	1	NO	2400-2	10	8.3	22	46	95	130	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-2	60KC	4	1	NO	2400-2	10	6.1	15	31	69	86	CE	CE	CE	CE	CE	CE	CE	45K	3	7
2400-2	60KC	6	1	NO	2400-2	10	5.5	13	26	55	73	180	CE	CE	CE	CE	CE	CE	71K	4	6
2400-2	60KC	8	1	NO	2400-2	10	5.5	13	26	55	73	150	250	340	CE	CE	CE	CE	100K	3	8
2400-3	90KC	3	1	NO	2400-3	10	6.1	16	32	66	86	CE	CE	CE	CE	CE	CE	CE	37K	5	4
2400-3	90KC	4	1	NO	2400-3	10	4.6	11	22	48	60	CE	CE	CE	CE	CE	CE	CE	45K	3	7
2400-3	90KC	6	1	NO	2400-3	10	4.2	9.1	19	38	51	130	CE	CE	CE	CE	CE	CE	71K	4	6
2400-3	90KC	8	1	NO	2400-3	10	4.3	9.1	19	38	51	110	180	230	CE	CE	CE	CE	100K	3	8
2311	156KC	1	1	NO	2311	6	11	28	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	7K	7	7
2311	156KC	2	1	NO	2311	6	8.2	20	43	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	7	7
2311	156KC	3	1	NO	2311	6	8.1	20	42	91	CE	CE	CE	CE	CE	CE	CE	CE	21K	7	7
2400-1	30KC	3	2	NO	2400-1	10	21	56	120	260	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-1	30KC	4	2	NO	2400-1	10	15	39	82	180	330	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-1	30KC	6	2	NO	2400-1	10	13	32	65	140	180	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-1	30KC	8	2	NO	2400-1	10	8.7	22	46	99	150	320	CE	CE	CE	CE	CE	CE	67K	1	10
2400-2	60KC	3	2	NO	2400-2	10	12	30	60	140	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-2	60KC	4	2	NO	2400-2	10	8.0	21	43	89	190	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-2	60KC	6	2	NO	2400-2	10	7.3	18	35	73	90	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-2	60KC	8	2	NO	2400-2	10	5.2	12	25	52	74	170	CE	CE	CE	CE	CE	CE	67K	1	10
2400-3	90KC	3	2	NO	2400-3	10	8.0	21	42	90	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-3	90KC	4	2	NO	2400-3	10	5.9	15	30	62	140	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-3	90KC	6	2	NO	2400-3	10	5.4	13	24	50	62	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-3	90KC	8	2	NO	2400-3	10	4.1	8.6	17	36	51	110	CE	CE	CE	CE	CE	CE	67K	1	10
2311	156KC	2	2	NO	2311	6	8.2	20	43	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	7	7
2311	156KC	3	2	NO	2311	6	8.1	20	42	91	CE	CE	CE	CE	CE	CE	CE	CE	21K	7	7
2400-1	30KC	3	2	YES	2400-1	10	17	46	94	210	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-1	30KC	4	2	YES	2400-1	10	12	32	67	140	330	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-1	30KC	6	2	YES	2400-1	10	11	26	54	120	180	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-1	30KC	8	2	YES	2400-1	10	7.3	18	37	79	150	320	CE	CE	CE	CE	CE	CE	67K	1	10
2400-2	60KC	3	2	YES	2400-2	10	9.2	24	49	110	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-2	60KC	4	2	YES	2400-2	10	6.7	17	35	72	190	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-2	60KC	6	2	YES	2400-2	10	6.0	14	28	58	90	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-2	60KC	8	2	YES	2400-2	10	4.5	9.7	20	41	74	170	CE	CE	CE	CE	CE	CE	67K	1	10
2400-3	90KC	3	2	YES	2400-3	10	6.6	17	34	72	CE	CE	CE	CE	CE	CE	CE	CE	22K	1	2
2400-3	90KC	4	2	YES	2400-3	10	5.0	12	24	49	140	CE	CE	CE	CE	CE	CE	CE	45K	1	2
2400-3	90KC	6	2	YES	2400-3	10	4.6	9.8	20	40	62	CE	CE	CE	CE	CE	CE	CE	45K	1	1
2400-3	90KC	8	2	YES	2400-3	10	3.6	7.0	14	28	51	110	CE	CE	CE	CE	CE	CE	67K	1	10

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	300	1.3	1.8	2.5	4.6	5.6	12	19	25	33	39	55	88	1050K	468	586
2400-1	30KC	4	1	NO	2400-1	300	1.4	1.7	2.4	3.8	4.8	9.2	14	19	24	31	40	65	1726K	422	774
2400-1	30KC	6	1	NO	2400-1	175	1.5	1.8	2.3	3.6	4.1	7.6	12	16	21	25	33	53	3886K	367	839
2400-1	30KC	8	1	NO	2400-1	175	1.7	1.9	2.3	3.4	4.3	7.8	11	16	20	23	33	49	5611K	304	875
2400-1	30KC	10	1	NO	2400-1	175	1.8	2.1	2.4	3.6	4.1	7.3	12	15	18	24	31	49	7175K	258	905
2400-2	60KC	3	1	NO	2400-2	300	1.3	1.6	2.2	3.6	4.2	8.4	13	18	23	27	38	60	1050K	468	586
2400-2	60KC	4	1	NO	2400-2	300	1.3	1.6	2.1	3.1	3.8	6.9	9.9	14	17	22	29	45	1726K	422	774
2400-2	60KC	6	1	NO	2400-2	175	1.5	1.7	2.1	3.0	3.4	6.0	9.0	12	16	19	24	38	3886K	367	839
2400-2	60KC	8	1	NO	2400-2	175	1.6	1.8	2.1	3.0	3.6	6.2	8.5	12	15	17	25	36	5611K	304	875
2400-2	60KC	10	1	NO	2400-2	175	1.8	2.0	2.3	3.2	3.5	5.9	8.8	12	14	18	23	37	7175K	258	905
2400-3	90KC	3	1	NO	2400-3	300	1.3	1.6	2.0	3.3	3.8	7.4	12	15	20	24	33	51	1050K	468	586
2400-3	90KC	4	1	NO	2400-3	300	1.3	1.6	2.0	2.9	3.5	6.2	8.8	13	15	19	25	40	1726K	422	774
2400-3	90KC	6	1	NO	2400-3	175	1.5	1.6	2.0	2.9	3.2	5.5	8.1	11	14	16	21	34	3886K	367	839
2400-3	90KC	8	1	NO	2400-3	175	1.6	1.8	2.1	2.8	3.4	5.7	7.7	11	13	16	22	32	5611K	304	875
2400-3	90KC	10	1	NO	2400-3	175	1.7	1.9	2.2	3.0	3.3	5.5	8.0	11	13	16	21	33	7175K	258	905
2311	156KC	1	1	NO	2311	125	1.2	1.4	1.6	2.6	3.0	4.9	6.8	8.7	14	17	21	CE	218K	181	880
2311	156KC	2	1	NO	2311	125	1.2	1.4	1.6	2.6	2.9	4.7	6.6	8.4	13	15	20	31	436K	181	880
2311	156KC	3	1	NO	2311	125	1.2	1.4	1.6	2.6	2.9	4.7	6.5	8.3	13	15	20	31	655K	181	880
2400-1	30KC	3	2	NO	2400-1	200	1.3	1.6	2.2	3.7	4.4	8.9	14	19	24	29	41	64	1025K	312	592
2400-1	30KC	4	2	NO	2400-1	200	1.3	1.6	2.1	3.2	3.7	7.2	11	15	18	22	30	48	1866K	308	680
2400-1	30KC	6	2	NO	2400-1	115	1.5	1.6	2.2	3.2	3.6	6.1	9.6	13	15	18	26	38	3532K	229	869
2400-1	30KC	8	2	NO	2400-1	115	1.6	1.8	2.2	3.0	3.4	6.2	8.4	11	14	18	23	34	4932K	182	936
2400-1	30KC	10	2	NO	2400-1	115	1.7	1.9	2.2	3.2	3.6	5.7	8.7	11	14	16	20	34	6079K	151	964
2400-2	60KC	3	2	NO	2400-2	200	1.2	1.5	2.0	3.1	3.6	7.0	11	14	18	22	30	48	1025K	312	592
2400-2	60KC	4	2	NO	2400-2	200	1.3	1.6	1.9	2.8	3.2	5.9	8.3	12	14	17	24	37	1866K	308	680
2400-2	60KC	6	2	NO	2400-2	115	1.5	1.6	2.0	2.8	3.2	5.4	7.9	11	13	16	21	32	3532K	229	869
2400-2	60KC	8	2	NO	2400-2	115	1.6	1.7	2.1	2.8	3.2	5.6	7.5	9.4	12	15	20	29	4932K	182	936
2400-2	60KC	10	2	NO	2400-2	115	1.7	1.9	2.2	3.0	3.3	5.1	7.8	9.8	12	14	18	30	6079K	151	964
2400-3	90KC	3	2	NO	2400-3	200	1.2	1.5	1.9	3.0	3.5	6.5	9.8	13	17	20	28	44	1025K	312	592
2400-3	90KC	4	2	NO	2400-3	200	1.3	1.5	1.9	2.7	3.1	5.6	7.8	11	13	16	22	35	1866K	308	680
2400-3	90KC	6	2	NO	2400-3	115	1.5	1.6	2.0	2.7	3.1	5.1	7.5	9.5	13	15	19	30	3532K	229	869
2400-3	90KC	8	2	NO	2400-3	115	1.6	1.7	2.0	2.7	3.1	5.4	7.2	9.2	12	14	20	28	4932K	182	936
2400-3	90KC	10	2	NO	2400-3	115	1.7	1.9	2.2	2.9	3.2	5.1	7.5	9.5	12	14	18	29	6079K	151	964
2311	156KC	2	2	NO	2311	125	1.2	1.5	1.8	2.4	2.7	5.0	6.9	8.7	12	15	20	29	434K	181	798
2311	156KC	3	2	NO	2311	125	1.2	1.5	1.7	2.3	2.6	4.6	6.3	7.9	11	14	18	26	651K	181	798
2311	156KC	4	2	NO	2311	125	1.3	1.5	1.8	2.4	2.6	4.7	6.4	8.0	12	14	18	27	977K	181	795
2400-1	30KC	3	2	YES	2400-1	200	1.3	1.6	2.0	3.3	3.8	7.4	12	15	20	24	33	52	1025K	312	592
2400-1	30KC	4	2	YES	2400-1	200	1.3	1.6	2.0	2.8	3.3	6.1	8.5	12	15	18	25	39	1866K	308	680
2400-1	30KC	6	2	YES	2400-1	115	1.5	1.6	2.0	2.8	3.2	5.3	7.8	10	14	16	21	33	3532K	229	869
2400-1	30KC	8	2	YES	2400-1	115	1.6	1.8	2.0	2.8	3.1	5.5	7.4	11	13	15	21	31	4932K	182	936
2400-1	30KC	10	2	YES	2400-1	115	1.7	1.9	2.2	2.9	3.2	5.3	7.7	9.7	12	15	20	31	6079K	151	964
2400-2	60KC	3	2	YES	2400-2	200	1.2	1.5	1.9	2.9	3.3	6.2	9.3	12	16	19	26	41	1025K	312	592
2400-2	60KC	4	2	YES	2400-2	200	1.3	1.5	1.9	2.6	3.0	5.3	7.4	11	13	15	21	33	1866K	308	680
2400-2	60KC	6	2	YES	2400-2	115	1.5	1.6	2.0	2.7	3.0	4.8	7.0	8.9	12	14	18	28	3532K	229	869
2400-2	60KC	8	2	YES	2400-2	115	1.6	1.7	2.0	2.7	3.0	5.1	6.8	9.3	12	14	19	27	4932K	182	936
2400-2	60KC	10	2	YES	2400-2	115	1.7	1.9	2.1	2.8	3.1	4.9	7.1	8.9	11	14	18	28	6079K	151	964
2400-3	90KC	3	2	YES	2400-3	200	1.2	1.5	1.9	2.8	3.2	6.0	9.0	12	16	18	25	40	1025K	312	592
2400-3	90KC	4	2	YES	2400-3	200	1.3	1.5	1.9	2.6	2.9	5.2	7.2	9.8	12	15	20	32	1866K	308	680
2400-3	90KC	6	2	YES	2400-3	115	1.5	1.6	1.9	2.6	2.9	4.8	6.9	8.7	12	14	18	28	3532K	229	869
2400-3	90KC	8	2	YES	2400-3	115	1.6	1.7	2.0	2.6	2.9	5.0	6.7	9.0	11	13	18	26	4932K	182	936
2400-3	90KC	10	2	YES	2400-3	115	1.7	1.9	2.1	2.8	3.1	4.9	6.9	8.7	11	14	17	27	6079K	151	964

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	80	1.9	3.7	7.5	16	21	45	71	100	130	160	220	CE	260K	98	205
2400-1	30KC	4	1	NO	2400-1	80	1.8	3.2	5.8	12	15	34	50	72	90	110	160	280	485K	97	217
2400-1	30KC	6	1	NO	2400-1	40	1.8	2.8	4.9	9.8	13	27	41	57	71	90	130	200	985K	91	290
2400-1	30KC	8	1	NO	2400-1	40	2.0	3.0	5.0	9.5	12	24	40	52	71	85	120	200	1430K	76	302
2400-1	30KC	10	1	NO	2400-1	40	2.1	2.8	4.6	8.6	12	25	36	53	66	79	120	180	1839K	64	309
2400-2	60KC	3	1	NO	2400-2	80	1.6	2.6	4.6	9.0	12	25	39	54	69	86	120	CE	260K	98	205
2400-2	60KC	4	1	NO	2400-2	80	1.6	2.4	3.8	6.9	8.5	19	28	40	49	60	84	150	485K	97	217
2400-2	60KC	6	1	NO	2400-2	40	1.6	2.2	3.4	6.0	7.6	16	23	32	40	50	68	110	985K	91	290
2400-2	60KC	8	1	NO	2400-2	40	1.8	2.4	3.5	6.0	7.0	14	23	30	40	47	63	110	1430K	76	302
2400-2	60KC	10	1	NO	2400-2	40	1.9	2.3	3.3	5.6	7.3	15	21	30	37	44	64	96	1839K	64	309
2400-3	90KC	3	1	NO	2400-3	80	1.5	2.2	3.7	6.8	8.7	18	28	39	50	62	84	CE	260K	98	205
2400-3	90KC	4	1	NO	2400-3	80	1.5	2.1	3.1	5.4	6.6	14	21	29	36	44	61	110	485K	97	217
2400-3	90KC	6	1	NO	2400-3	40	1.6	2.0	2.9	4.9	6.0	12	18	24	30	37	50	78	985K	91	290
2400-3	90KC	8	1	NO	2400-3	40	1.7	2.2	3.0	4.9	5.7	11	17	22	30	35	47	79	1430K	76	302
2400-3	90KC	10	1	NO	2400-3	40	1.9	2.2	3.0	4.7	5.9	12	16	23	28	33	48	71	1839K	64	309
2311	156KC	1	1	NO	2311	30	1.3	2.0	2.9	4.5	5.4	14	CE	CE	CE	CE	CE	CE	55K	45	298
2311	156KC	2	1	NO	2311	30	1.3	1.9	2.7	4.3	5.0	13	19	25	CE	CE	CE	CE	110K	45	298
2311	156KC	3	1	NO	2311	30	1.3	1.9	2.6	4.0	4.7	12	18	23	29	34	CE	CE	165K	45	298
2400-1	30KC	3	2	NO	2400-1	45	1.7	3.0	5.9	12	16	33	52	72	92	120	160	CE	256K	77	208
2400-1	30KC	4	2	NO	2400-1	45	1.7	2.7	4.7	8.9	11	24	37	54	67	80	120	200	476K	77	238
2400-1	30KC	6	2	NO	2400-1	25	1.7	2.5	4.1	7.8	11	20	32	42	52	64	94	140	909K	57	307
2400-1	30KC	8	2	NO	2400-1	25	1.8	2.7	3.8	7.4	8.9	20	28	37	45	54	83	130	1273K	45	323
2400-1	30KC	10	2	NO	2400-1	25	1.9	2.6	4.0	7.4	9.1	17	24	38	46	55	72	110	1577K	37	332
2400-2	60KC	3	2	NO	2400-2	45	1.5	2.2	3.7	6.8	8.6	18	28	39	50	61	84	CE	256K	77	208
2400-2	60KC	4	2	NO	2400-2	45	1.5	2.1	3.1	5.4	6.5	14	21	29	36	43	62	110	476K	77	238
2400-2	60KC	6	2	NO	2400-2	25	1.5	2.0	2.9	5.0	6.3	12	18	24	29	35	51	75	909K	57	307
2400-2	60KC	8	2	NO	2400-2	25	1.7	2.2	2.8	4.8	5.6	12	16	21	25	30	46	67	1273K	45	323
2400-2	60KC	10	2	NO	2400-2	25	1.8	2.2	3.0	4.9	5.8	9.7	14	21	26	31	40	59	1577K	37	332
2400-3	90KC	3	2	NO	2400-3	45	1.4	1.9	3.0	5.2	6.6	14	21	28	36	44	60	CE	256K	77	208
2400-3	90KC	4	2	NO	2400-3	45	1.4	1.9	2.7	4.3	5.1	10	16	22	27	32	45	77	476K	77	238
2400-3	90KC	6	2	NO	2400-3	25	1.5	1.9	2.6	4.1	5.1	8.8	14	18	22	27	38	55	909K	57	307
2400-3	90KC	8	2	NO	2400-3	25	1.6	2.1	2.6	4.1	4.7	8.9	13	16	20	23	34	50	1273K	45	323
2400-3	90KC	10	2	NO	2400-3	25	1.8	2.1	2.7	4.2	4.9	7.9	11	17	20	24	31	45	1577K	37	332
2311	156KC	2	2	NO	2311	30	1.4	1.8	2.9	4.5	5.3	13	19	24	CE	CE	CE	CE	109K	45	272
2311	156KC	3	2	NO	2311	30	1.4	1.7	2.6	3.9	4.5	11	16	21	26	43	CE	CE	164K	45	272
2311	156KC	4	2	NO	2311	30	1.5	1.7	2.7	4.0	4.6	11	16	21	26	43	56	CE	246K	45	271
2400-1	30KC	3	2	YES	2400-1	45	1.6	2.7	4.9	9.5	13	27	42	58	74	90	130	CE	256K	77	208
2400-1	30KC	4	2	YES	2400-1	45	1.6	2.4	4.0	7.4	9.0	19	30	43	53	64	92	160	476K	77	238
2400-1	30KC	6	2	YES	2400-1	25	1.6	2.3	3.5	6.3	8.2	17	25	35	44	53	75	120	909K	57	307
2400-1	30KC	8	2	YES	2400-1	25	1.8	2.4	3.6	6.4	7.6	16	25	32	41	53	69	120	1273K	45	323
2400-1	30KC	10	2	YES	2400-1	25	1.9	2.4	3.5	5.9	7.9	16	23	33	41	49	72	110	1577K	37	332
2400-2	60KC	3	2	YES	2400-2	45	1.4	2.0	3.2	5.6	7.0	15	23	31	40	48	67	CE	256K	77	208
2400-2	60KC	4	2	YES	2400-2	45	1.4	1.9	2.7	4.6	5.4	11	17	24	29	35	49	84	476K	77	238
2400-2	60KC	6	2	YES	2400-2	25	1.5	1.9	2.6	4.1	5.1	9.6	14	20	24	29	41	64	909K	57	307
2400-2	60KC	8	2	YES	2400-2	25	1.7	2.0	2.7	4.2	4.9	9.0	14	19	23	29	38	65	1273K	45	323
2400-2	60KC	10	2	YES	2400-2	25	1.8	2.1	2.7	4.1	5.1	9.3	14	19	23	28	39	59	1577K	37	332
2400-3	90KC	3	2	YES	2400-3	45	1.4	1.8	2.7	4.4	5.5	11	17	23	29	35	48	CE	256K	77	208
2400-3	90KC	4	2	YES	2400-3	45	1.4	1.8	2.4	3.7	4.4	8.3	13	18	22	26	36	61	476K	77	238
2400-3	90KC	6	2	YES	2400-3	25	1.5	1.8	2.4	3.5	4.3	7.6	11	15	19	23	31	48	909K	57	307
2400-3	90KC	8	2	YES	2400-3	25	1.6	2.0	2.5	3.7	4.2	7.3	12	15	18	23	30	49	1273K	45	323
2400-3	90KC	10	2	YES	2400-3	25	1.8	2.0	2.5	3.6	4.4	7.7	11	15	18	22	30	45	1577K	37	332

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	30	3.6	9.0	20	43	58	130	200	280	CE	CE	CE	CE	104K	46	98
2400-1	30KC	4	1	NO	2400-1	30	3.2	6.8	15	31	41	87	150	190	280	350	530	CE	202K	37	98
2400-1	30KC	6	1	NO	2400-1	25	2.8	6.1	13	26	32	69	120	150	200	250	340	550	392K	36	109
2400-1	30KC	8	1	NO	2400-1	25	2.8	5.6	11	24	31	67	110	160	200	250	330	490	565K	30	117
2400-1	30KC	10	1	NO	2400-1	25	2.7	5.8	12	24	29	63	110	140	180	220	280	450	725K	25	124
2400-2	60KC	3	1	NO	2400-2	30	2.5	5.3	11	23	31	64	110	150	CE	CE	CE	CE	104K	46	98
2400-2	60KC	4	1	NO	2400-2	30	2.3	4.2	7.9	17	22	46	74	98	150	190	280	CE	202K	37	98
2400-2	60KC	6	1	NO	2400-2	25	2.1	3.9	7.0	14	18	37	59	79	110	140	180	290	392K	36	109
2400-2	60KC	8	1	NO	2400-2	25	2.2	3.7	6.5	13	17	36	54	85	110	130	170	260	565K	30	117
2400-2	60KC	10	1	NO	2400-2	25	2.2	3.9	6.7	14	16	34	55	74	93	120	150	240	725K	25	124
2400-3	90KC	3	1	NO	2400-3	30	2.1	4.0	8.0	17	22	45	71	100	CE	CE	CE	CE	104K	46	98
2400-3	90KC	4	1	NO	2400-3	30	2.0	3.3	5.9	12	16	32	52	69	99	130	200	CE	202K	37	98
2400-3	90KC	6	1	NO	2400-3	25	1.9	3.2	5.3	11	13	26	42	56	73	91	130	200	392K	36	109
2400-3	90KC	8	1	NO	2400-3	25	2.0	3.1	5.0	9.5	13	26	39	60	72	90	120	180	565K	30	117
2400-3	90KC	10	1	NO	2400-3	25	2.1	3.3	5.3	9.7	12	25	39	52	66	78	110	170	725K	25	124
2311	156KC	1	1	NO	2311	15	1.9	3.0	4.9	13	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	125
2311	156KC	2	1	NO	2311	15	1.8	2.8	4.5	12	15	CE	CE	CE	CE	CE	CE	CE	44K	18	125
2311	156KC	3	1	NO	2311	15	1.7	2.6	4.0	11	13	25	CE	CE	CE	CE	CE	CE	66K	18	125
2400-1	30KC	3	2	NO	2400-1	20	3.0	6.9	15	32	41	91	150	210	CE	CE	CE	CE	102K	31	98
2400-1	30KC	4	2	NO	2400-1	20	2.6	5.4	11	23	31	65	110	160	210	270	CE	CE	190K	30	98
2400-1	30KC	6	2	NO	2400-1	20	2.5	4.9	9.8	21	25	51	85	120	150	170	280	460	356K	20	113
2400-1	30KC	8	2	NO	2400-1	15	2.6	4.9	8.6	19	23	44	76	110	130	150	200	410	509K	18	129
2400-1	30KC	10	2	NO	2400-1	15	2.6	4.4	8.8	16	20	45	66	87	110	130	210	310	630K	15	134
2400-2	60KC	3	2	NO	2400-2	20	2.1	4.1	8.1	17	22	47	75	110	CE	CE	CE	CE	102K	31	98
2400-2	60KC	4	2	NO	2400-2	20	2.0	3.4	6.1	13	17	34	55	80	110	140	CE	CE	190K	30	98
2400-2	60KC	6	2	NO	2400-2	20	2.0	3.3	5.8	12	14	27	45	59	73	87	150	240	356K	20	113
2400-2	60KC	8	2	NO	2400-2	15	2.1	3.3	5.2	11	13	24	40	52	65	77	110	210	509K	18	129
2400-2	60KC	10	2	NO	2400-2	15	2.1	3.1	5.4	9.0	11	24	35	45	56	67	110	160	630K	15	134
2400-3	90KC	3	2	NO	2400-3	20	1.8	3.2	5.9	12	16	33	52	73	CE	CE	CE	CE	102K	31	98
2400-3	90KC	4	2	NO	2400-3	20	1.8	2.8	4.6	8.9	12	24	38	56	73	94	CE	CE	190K	30	98
2400-3	90KC	6	2	NO	2400-3	20	1.8	2.7	4.5	8.1	9.9	19	31	41	51	61	97	170	356K	20	113
2400-3	90KC	8	2	NO	2400-3	15	2.0	2.8	4.2	7.8	9.3	17	28	37	45	54	71	150	509K	18	129
2400-3	90KC	10	2	NO	2400-3	15	2.0	2.7	4.4	6.8	8.0	17	25	32	40	47	72	110	630K	15	134
2311	156KC	2	2	NO	2311	15	1.7	3.0	4.8	12	14	CE	CE	CE	CE	CE	CE	CE	43K	18	110
2311	156KC	3	2	NO	2311	15	1.6	2.6	4.0	9.8	12	23	CE	CE	CE	CE	CE	CE	65K	18	110
2311	156KC	4	2	NO	2311	15	1.6	2.7	4.1	9.9	12	23	48	CE	CE	CE	CE	CE	98K	18	110
2400-1	30KC	3	2	YES	2400-1	20	2.6	5.8	12	26	33	73	120	170	CE	CE	CE	CE	102K	31	98
2400-1	30KC	4	2	YES	2400-1	20	2.4	4.6	8.8	19	25	53	85	130	170	210	CE	CE	190K	30	98
2400-1	30KC	6	2	YES	2400-1	20	2.2	4.3	7.9	16	20	42	69	100	130	160	220	360	356K	20	113
2400-1	30KC	8	2	YES	2400-1	15	2.4	4.1	7.4	15	19	41	64	110	130	150	200	310	509K	18	129
2400-1	30KC	10	2	YES	2400-1	15	2.3	4.4	7.9	16	20	41	66	87	110	130	190	310	630K	15	134
2400-2	60KC	3	2	YES	2400-2	20	1.9	3.5	6.6	14	18	38	60	85	CE	CE	CE	CE	102K	31	98
2400-2	60KC	4	2	YES	2400-2	20	1.8	3.0	5.1	10	14	28	44	64	84	110	CE	CE	190K	30	98
2400-2	60KC	6	2	YES	2400-2	20	1.8	2.9	4.7	8.8	11	22	36	52	64	81	110	190	356K	20	113
2400-2	60KC	8	2	YES	2400-2	15	2.0	2.9	4.6	8.4	11	22	34	52	64	77	110	160	509K	18	129
2400-2	60KC	10	2	YES	2400-2	15	2.0	3.1	4.9	8.9	11	22	35	45	56	67	95	160	630K	15	134
2400-3	90KC	3	2	YES	2400-3	20	1.7	2.8	4.9	9.7	13	26	41	58	CE	CE	CE	CE	102K	31	98
2400-3	90KC	4	2	YES	2400-3	20	1.7	2.4	3.9	7.3	9.4	19	31	44	58	74	CE	CE	190K	30	98
2400-3	90KC	6	2	YES	2400-3	20	1.7	2.4	3.7	6.5	7.8	16	25	36	44	56	76	130	356K	20	113
2400-3	90KC	8	2	YES	2400-3	15	1.9	2.5	3.7	6.3	7.6	16	24	37	44	54	71	110	509K	18	129
2400-3	90KC	10	2	YES	2400-3	15	1.9	2.7	3.9	6.7	7.9	16	25	32	40	47	66	110	630K	15	134

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	15	9.0	26	57	130	170	CE	CE	CE	CE	CE	CE	CE	41K	18	33
2400-1	30KC	4	1	NO	2400-1	15	6.8	19	40	87	120	280	490	CE	CE	CE	CE	CE	77K	18	41
2400-1	30KC	6	1	NO	2400-1	10	6.1	15	32	68	93	200	320	450	590	800	CE	CE	155K	14	44
2400-1	30KC	8	1	NO	2400-1	10	5.6	14	30	67	85	200	300	400	500	620	900	CE	228K	8	49
2400-1	30KC	10	1	NO	2400-1	10	5.6	14	29	63	78	180	270	380	480	580	810	CE	284K	10	51
2400-2	60KC	3	1	NO	2400-2	15	5.2	14	30	64	84	CE	CE	CE	CE	CE	CE	CE	41K	18	33
2400-2	60KC	4	1	NO	2400-2	15	4.1	11	22	45	58	150	250	CE	CE	CE	CE	CE	77K	18	41
2400-2	60KC	6	1	NO	2400-2	10	3.8	8.3	17	36	49	110	170	230	310	410	CE	CE	155K	14	44
2400-2	60KC	8	1	NO	2400-2	10	3.7	7.9	16	36	45	100	160	210	260	330	470	CE	228K	8	49
2400-2	60KC	10	1	NO	2400-2	10	3.8	7.9	16	34	41	92	140	200	250	300	420	CE	284K	10	51
2400-3	90KC	3	1	NO	2400-3	15	3.9	9.6	21	44	58	CE	CE	CE	CE	CE	CE	CE	41K	18	33
2400-3	90KC	4	1	NO	2400-3	15	3.2	7.4	15	32	40	98	180	CE	CE	CE	CE	CE	77K	18	41
2400-3	90KC	6	1	NO	2400-3	10	3.1	6.1	12	25	34	71	120	160	210	290	CE	CE	155K	14	44
2400-3	90KC	8	1	NO	2400-3	10	3.0	5.9	12	25	31	69	110	150	180	230	320	CE	228K	8	49
2400-3	90KC	10	1	NO	2400-3	10	3.1	6.0	12	24	29	64	95	140	180	210	290	CE	284K	10	51
2311	156KC	1	1	NO	2311	6	3.0	5.7	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	51
2311	156KC	2	1	NO	2311	6	2.8	5.2	14	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	51
2311	156KC	3	1	NO	2311	6	2.5	4.5	13	24	30	CE	CE	CE	CE	CE	CE	CE	25K	7	51
2400-1	30KC	3	2	NO	2400-1	10	7.0	19	43	91	120	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-1	30KC	4	2	NO	2400-1	10	5.4	15	30	65	84	210	CE	CE	CE	CE	CE	CE	74K	12	41
2400-1	30KC	6	2	NO	2400-1	10	4.9	12	25	52	71	140	240	380	530	CE	CE	CE	133K	9	42
2400-1	30KC	8	2	NO	2400-1	10	4.9	11	23	44	63	130	190	290	480	600	CE	CE	179K	7	45
2400-1	30KC	10	2	NO	2400-1	10	4.4	11	20	45	55	110	190	250	320	380	740	CE	238K	6	49
2400-2	60KC	3	2	NO	2400-2	10	4.2	11	23	47	61	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	4	2	NO	2400-2	10	3.4	7.9	16	34	44	110	CE	CE	CE	CE	CE	CE	74K	12	41
2400-2	60KC	6	2	NO	2400-2	10	3.3	6.7	14	28	37	72	120	200	270	CE	CE	CE	133K	9	42
2400-2	60KC	8	2	NO	2400-2	10	3.3	6.0	13	23	33	64	95	150	250	310	CE	CE	179K	7	45
2400-2	60KC	10	2	NO	2400-2	10	3.1	6.3	11	24	29	56	97	130	160	200	380	CE	238K	6	49
2400-3	90KC	3	2	NO	2400-3	10	3.2	7.3	16	32	42	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	4	2	NO	2400-3	10	2.7	5.8	12	24	30	74	CE	CE	CE	CE	CE	CE	74K	12	41
2400-3	90KC	6	2	NO	2400-3	10	2.7	5.1	9.6	19	26	49	82	140	190	CE	CE	CE	133K	9	42
2400-3	90KC	8	2	NO	2400-3	10	2.7	4.6	9.0	17	23	44	65	98	170	220	CE	CE	179K	7	45
2400-3	90KC	10	2	NO	2400-3	10	2.6	4.9	7.8	17	21	38	66	87	110	130	260	CE	238K	6	49
2311	156KC	2	2	NO	2311	6	3.0	5.5	14	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	45
2311	156KC	3	2	NO	2311	6	2.6	4.5	12	22	40	CE	CE	CE	CE	CE	CE	CE	25K	7	45
2311	156KC	4	2	NO	2311	6	2.7	4.6	12	22	41	CE	CE	CE	CE	CE	CE	CE	38K	7	45
2400-1	30KC	3	2	YES	2400-1	10	5.9	16	35	73	96	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-1	30KC	4	2	YES	2400-1	10	4.6	12	25	52	68	170	CE	CE	CE	CE	CE	CE	74K	12	41
2400-1	30KC	6	2	YES	2400-1	10	4.3	9.5	20	43	57	140	220	310	430	CE	CE	CE	133K	9	42
2400-1	30KC	8	2	YES	2400-1	10	4.1	10	21	44	54	130	190	290	380	480	CE	CE	179K	7	45
2400-1	30KC	10	2	YES	2400-1	10	4.4	9.5	20	42	55	110	190	250	320	380	590	CE	238K	6	49
2400-2	60KC	3	2	YES	2400-2	10	3.6	8.4	18	38	49	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	4	2	YES	2400-2	10	3.0	6.6	13	27	35	86	CE	CE	CE	CE	CE	CE	74K	12	41
2400-2	60KC	6	2	YES	2400-2	10	2.9	5.5	11	23	30	71	110	160	220	CE	CE	CE	133K	9	42
2400-2	60KC	8	2	YES	2400-2	10	2.9	5.9	12	23	28	64	95	150	200	250	CE	CE	179K	7	45
2400-2	60KC	10	2	YES	2400-2	10	3.1	5.7	11	22	29	56	93	130	160	200	300	CE	238K	6	49
2400-3	90KC	3	2	YES	2400-3	10	2.8	6.0	13	26	34	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	4	2	YES	2400-3	10	2.4	4.8	9.2	19	24	58	CE	CE	CE	CE	CE	CE	74K	12	41
2400-3	90KC	6	2	YES	2400-3	10	2.4	4.2	7.6	16	21	48	74	110	150	CE	CE	CE	133K	9	42
2400-3	90KC	8	2	YES	2400-3	10	2.5	4.5	8.0	16	20	44	65	98	140	170	CE	CE	179K	7	45
2400-3	90KC	10	2	YES	2400-3	10	2.6	4.4	7.8	16	21	38	64	87	110	130	210	CE	238K	6	49

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	350	1.3	1.5	2.0	3.5	4.5	8.9	14	21	25	33	44	70	1053K	500	2344
2400-1	30KC	4	1	NO	2400-1	350	1.4	1.6	2.0	3.1	4.0	7.5	11	16	19	25	33	54	2027K	500	2344
2400-1	30KC	6	1	NO	2400-1	350	1.5	1.8	2.1	2.9	3.7	6.8	9.5	14	17	20	29	44	4208K	500	2495
2400-1	30KC	8	1	NO	2400-1	350	1.7	1.9	2.3	3.0	3.4	6.1	9.6	13	17	20	26	43	6226K	500	2344
2400-1	30KC	10	1	NO	2400-1	350	1.8	2.0	2.4	3.2	3.6	6.3	8.6	13	16	18	26	39	8177K	500	2329
2400-2	60KC	3	1	NO	2400-2	350	1.3	1.4	1.8	2.9	3.6	6.6	11	15	18	23	31	49	1053K	500	2344
2400-2	60KC	4	1	NO	2400-2	350	1.3	1.5	1.8	2.6	3.3	5.8	8.2	12	15	19	24	39	2027K	500	2344
2400-2	60KC	6	1	NO	2400-2	350	1.5	1.7	2.0	2.6	3.1	5.4	7.5	11	13	16	22	32	4208K	500	2495
2400-2	60KC	8	1	NO	2400-2	350	1.6	1.8	2.1	2.7	3.0	5.1	7.6	9.6	13	16	20	32	6226K	500	2344
2400-2	60KC	10	1	NO	2400-2	350	1.8	2.0	2.3	2.9	3.2	5.3	7.0	9.9	12	14	20	30	8177K	500	2329
2400-3	90KC	3	1	NO	2400-3	350	1.3	1.4	1.8	2.7	3.3	5.9	9.0	13	16	20	27	42	1053K	500	2344
2400-3	90KC	4	1	NO	2400-3	350	1.3	1.5	1.8	2.5	3.1	5.3	7.4	11	13	17	22	34	2027K	500	2344
2400-3	90KC	6	1	NO	2400-3	350	1.5	1.6	1.9	2.4	3.0	5.0	6.8	9.4	12	14	20	29	4208K	500	2495
2400-3	90KC	8	1	NO	2400-3	350	1.6	1.8	2.1	2.6	2.9	4.7	7.0	8.8	12	14	18	29	6226K	500	2344
2400-3	90KC	10	1	NO	2400-3	350	1.7	1.9	2.2	2.8	3.0	4.9	6.5	9.0	11	13	19	27	8177K	500	2329
2311	156KC	1	1	NO	2311	125	1.2	1.4	1.7	2.2	2.5	3.9	5.2	8.8	11	13	17	CE	225K	181	2706
2311	156KC	2	1	NO	2311	125	1.2	1.4	1.7	2.2	2.5	3.9	5.2	8.4	11	13	16	24	451K	181	2706
2311	156KC	3	1	NO	2311	125	1.2	1.4	1.7	2.2	2.5	3.8	5.2	8.3	11	12	16	23	677K	181	2706
2400-1	30KC	3	2	NO	2400-1	350	1.3	1.4	1.7	3.0	3.6	7.0	11	15	19	24	32	51	1053K	500	2344
2400-1	30KC	4	2	NO	2400-1	350	1.3	1.5	1.8	2.7	3.3	5.9	9.1	12	15	19	25	40	1777K	500	2344
2400-1	30KC	6	2	NO	2400-1	250	1.5	1.6	1.9	2.6	3.2	5.6	7.7	11	13	16	22	32	4053K	500	2495
2400-1	30KC	8	2	NO	2400-1	250	1.6	1.8	2.1	2.6	3.1	5.2	7.0	11	13	15	19	28	5907K	306	2358
2400-1	30KC	10	2	NO	2400-1	150	1.7	1.9	2.2	2.8	3.1	5.0	7.2	9.0	11	15	20	29	7698K	384	2562
2400-2	60KC	3	2	NO	2400-2	350	1.2	1.4	1.7	2.6	3.1	5.7	8.5	12	15	19	25	39	1053K	500	2344
2400-2	60KC	4	2	NO	2400-2	350	1.3	1.5	1.7	2.4	3.0	5.0	7.5	9.6	12	15	20	32	1777K	500	2344
2400-2	60KC	6	2	NO	2400-2	250	1.5	1.6	1.9	2.4	2.9	4.9	6.6	9.1	11	14	19	28	4053K	500	2495
2400-2	60KC	8	2	NO	2400-2	250	1.6	1.7	2.0	2.5	2.9	4.7	6.4	8.6	11	14	17	25	5907K	306	2358
2400-2	60KC	10	2	NO	2400-2	150	1.7	1.9	2.2	2.7	3.0	4.5	6.5	8.3	10	13	18	26	7698K	384	2562
2400-3	90KC	3	2	NO	2400-3	350	1.2	1.4	1.7	2.5	3.0	5.3	7.9	11	14	18	23	36	1053K	500	2344
2400-3	90KC	4	2	NO	2400-3	350	1.3	1.5	1.7	2.4	2.9	4.8	7.1	9.1	12	15	19	30	1777K	500	2344
2400-3	90KC	6	2	NO	2400-3	250	1.5	1.6	1.9	2.4	2.8	4.7	6.3	8.6	11	13	18	26	4053K	500	2495
2400-3	90KC	8	2	NO	2400-3	250	1.6	1.7	2.0	2.5	2.8	4.5	6.3	8.2	10	13	17	24	5907K	306	2358
2400-3	90KC	10	2	NO	2400-3	150	1.7	1.9	2.1	2.7	2.9	4.3	6.2	8.2	9.8	12	17	25	7698K	384	2562
2311	156KC	2	2	NO	2311	125	1.2	1.4	1.7	2.2	2.5	3.9	6.0	7.7	9.3	11	15	22	451K	181	2624
2311	156KC	3	2	NO	2311	125	1.2	1.3	1.6	2.1	2.3	3.5	5.4	6.9	8.3	9.8	13	19	677K	181	2624
2311	156KC	4	2	NO	2311	125	1.3	1.4	1.7	2.1	2.4	3.5	5.5	7.0	8.4	9.9	13	19	1016K	181	2621
2400-1	30KC	3	2	YES	2400-1	350	1.3	1.4	1.7	2.7	3.2	5.9	8.8	13	16	20	26	41	1053K	500	2344
2400-1	30KC	4	2	YES	2400-1	350	1.3	1.5	1.7	2.4	3.0	5.1	7.7	9.8	12	16	20	33	1777K	500	2344
2400-1	30KC	6	2	YES	2400-1	250	1.5	1.6	1.9	2.4	2.9	4.8	6.5	8.9	11	13	18	27	4053K	500	2495
2400-1	30KC	8	2	YES	2400-1	250	1.6	1.8	2.0	2.5	2.8	4.5	6.6	8.3	11	13	17	27	5907K	306	2358
2400-1	30KC	10	2	YES	2400-1	150	1.7	1.9	2.2	2.7	3.0	4.3	6.2	8.6	11	12	17	25	7698K	384	2562
2400-2	60KC	3	2	YES	2400-2	350	1.2	1.4	1.7	2.5	2.9	5.1	7.5	11	13	17	22	34	1053K	500	2344
2400-2	60KC	4	2	YES	2400-2	350	1.3	1.5	1.7	2.3	2.8	4.6	6.8	8.7	11	14	18	28	1777K	500	2344
2400-2	60KC	6	2	YES	2400-2	250	1.5	1.6	1.8	2.3	2.8	4.5	6.0	8.2	9.9	12	17	24	4053K	500	2495
2400-2	60KC	8	2	YES	2400-2	250	1.6	1.7	2.0	2.5	2.7	4.3	6.2	7.8	9.4	12	16	25	5907K	306	2358
2400-2	60KC	10	2	YES	2400-2	150	1.7	1.9	2.2	2.6	2.9	4.2	5.9	8.1	9.6	12	16	23	7698K	384	2562
2400-3	90KC	3	2	YES	2400-3	350	1.2	1.4	1.7	2.4	2.9	5.0	7.3	11	13	16	21	33	1053K	500	2344
2400-3	90KC	4	2	YES	2400-3	350	1.3	1.5	1.7	2.3	2.7	4.5	6.7	8.5	11	14	17	27	1777K	500	2344
2400-3	90KC	6	2	YES	2400-3	250	1.5	1.6	1.8	2.3	2.7	4.4	5.9	8.0	9.6	12	16	24	4053K	500	2495
2400-3	90KC	8	2	YES	2400-3	250	1.6	1.7	2.0	2.5	2.7	4.2	6.1	7.6	9.3	12	15	24	5907K	306	2358
2400-3	90KC	10	2	YES	2400-3	150	1.7	1.9	2.1	2.6	2.9	4.1	5.8	7.9	9.5	11	16	23	7698K	384	2562

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	85	1.6	2.9	5.4	13	16	37	56	79	110	130	190	CE	263K	125	782
2400-1	30KC	4	1	NO	2400-1	85	1.6	2.6	4.6	9.0	12	27	40	59	73	89	130	220	526K	125	782
2400-1	30KC	6	1	NO	2400-1	85	1.8	2.4	4.0	7.8	9.5	21	34	45	61	73	100	180	1053K	125	839
2400-1	30KC	8	1	NO	2400-1	85	1.9	2.6	3.6	6.8	9.5	20	30	44	55	65	96	160	1567K	125	777
2400-1	30KC	10	1	NO	2400-1	85	2.1	2.7	3.8	7.0	8.3	18	30	39	55	65	86	160	2063K	125	791
2400-2	60KC	3	1	NO	2400-2	85	1.4	2.2	3.5	7.3	8.8	21	31	43	58	70	100	CE	263K	125	782
2400-2	60KC	4	1	NO	2400-2	85	1.5	2.0	3.1	5.6	6.8	16	23	33	41	49	70	120	526K	125	782
2400-2	60KC	6	1	NO	2400-2	85	1.6	2.0	2.9	5.0	5.9	12	19	26	35	41	56	99	1053K	125	839
2400-2	60KC	8	1	NO	2400-2	85	1.8	2.1	2.7	4.6	6.0	12	17	25	31	37	54	84	1567K	125	777
2400-2	60KC	10	1	NO	2400-2	85	1.9	2.3	2.9	4.7	5.5	11	18	23	31	37	49	85	2063K	125	791
2400-3	90KC	3	1	NO	2400-3	85	1.3	1.9	2.9	5.6	6.7	15	23	32	42	50	72	CE	263K	125	782
2400-3	90KC	4	1	NO	2400-3	85	1.4	1.8	2.7	4.5	5.4	12	17	24	30	36	52	85	526K	125	782
2400-3	90KC	6	1	NO	2400-3	85	1.6	1.8	2.6	4.1	4.8	9.3	15	20	26	31	42	73	1053K	125	839
2400-3	90KC	8	1	NO	2400-3	85	1.7	2.0	2.5	3.9	5.0	9.3	14	19	24	28	40	62	1567K	125	777
2400-3	90KC	10	1	NO	2400-3	85	1.8	2.1	2.6	4.0	4.6	8.5	14	18	24	28	37	63	2063K	125	791
2311	156KC	1	1	NO	2311	30	1.3	1.6	2.2	3.2	3.7	9.7	CE	CE	CE	CE	CE	CE	56K	45	916
2311	156KC	2	1	NO	2311	30	1.3	1.6	2.2	3.2	3.7	8.9	13	18	CE	CE	CE	CE	112K	45	916
2311	156KC	3	1	NO	2311	30	1.3	1.6	2.0	2.9	3.4	8.1	12	17	22	27	CE	CE	169K	45	916
2400-1	30KC	3	2	NO	2400-1	85	1.4	2.4	4.3	9.1	12	27	43	57	76	91	140	CE	263K	125	782
2400-1	30KC	4	2	NO	2400-1	85	1.5	2.2	3.6	6.8	9.1	20	29	42	52	67	91	160	517K	125	782
2400-1	30KC	6	2	NO	2400-1	50	1.7	2.1	3.4	6.3	7.5	16	26	34	42	56	75	120	1026K	125	839
2400-1	30KC	8	2	NO	2400-1	50	1.8	2.2	3.1	5.6	6.7	15	22	28	42	50	66	97	1500K	115	819
2400-1	30KC	10	2	NO	2400-1	35	1.9	2.4	3.4	5.9	7.0	15	22	29	36	42	56	99	1958K	96	870
2400-2	60KC	3	2	NO	2400-2	85	1.3	1.9	2.9	5.5	6.7	15	24	31	42	50	71	CE	263K	125	782
2400-2	60KC	4	2	NO	2400-2	85	1.4	1.8	2.6	4.3	5.5	12	17	24	29	37	50	84	517K	125	782
2400-2	60KC	6	2	NO	2400-2	50	1.5	1.8	2.6	4.2	4.9	9.4	15	19	24	31	42	62	1026K	125	839
2400-2	60KC	8	2	NO	2400-2	50	1.7	1.9	2.5	3.9	4.5	8.9	13	17	24	28	37	54	1500K	115	819
2400-2	60KC	10	2	NO	2400-2	35	1.8	2.1	2.7	4.1	4.7	8.9	13	17	21	24	32	55	1958K	96	870
2400-3	90KC	3	2	NO	2400-3	85	1.3	1.7	2.5	4.4	5.2	11	18	23	30	36	51	CE	263K	125	782
2400-3	90KC	4	2	NO	2400-3	85	1.4	1.7	2.3	3.6	4.5	8.6	13	18	22	28	37	62	517K	125	782
2400-3	90KC	6	2	NO	2400-3	50	1.5	1.7	2.3	3.6	4.1	7.5	12	15	18	24	32	47	1026K	125	839
2400-3	90KC	8	2	NO	2400-3	50	1.6	1.8	2.3	3.4	3.8	7.2	9.9	13	18	22	28	41	1500K	115	819
2400-3	90KC	10	2	NO	2400-3	35	1.8	2.0	2.5	3.6	4.0	7.4	11	14	16	19	25	42	1958K	96	870
2311	156KC	2	2	NO	2311	30	1.3	1.6	2.1	3.7	4.4	7.6	11	16	CE	CE	CE	CE	112K	45	889
2311	156KC	3	2	NO	2311	30	1.3	1.4	1.8	3.1	3.6	6.0	8.4	13	17	20	CE	CE	169K	45	889
2311	156KC	4	2	NO	2311	30	1.3	1.5	1.8	3.2	3.6	6.0	8.5	13	17	20	26	CE	253K	45	888
2400-1	30KC	3	2	YES	2400-1	85	1.4	2.2	3.6	7.5	9.2	21	34	45	61	73	110	CE	263K	125	782
2400-1	30KC	4	2	YES	2400-1	85	1.5	2.0	3.1	5.7	7.5	16	24	34	42	54	73	130	517K	125	782
2400-1	30KC	6	2	YES	2400-1	50	1.6	2.0	2.9	5.1	6.1	13	20	27	36	43	58	110	1026K	125	839
2400-1	30KC	8	2	YES	2400-1	50	1.8	2.1	2.7	4.6	6.2	13	18	26	32	39	57	88	1500K	115	819
2400-1	30KC	10	2	YES	2400-1	35	1.9	2.3	2.9	4.9	5.6	12	19	24	33	39	52	90	1958K	96	870
2400-2	60KC	3	2	YES	2400-2	85	1.3	1.8	2.5	4.6	5.5	12	19	25	33	40	56	CE	263K	125	782
2400-2	60KC	4	2	YES	2400-2	85	1.4	1.7	2.3	3.7	4.7	9.2	14	19	24	30	40	67	517K	125	782
2400-2	60KC	6	2	YES	2400-2	50	1.5	1.7	2.3	3.5	4.1	7.5	12	16	21	24	32	57	1026K	125	839
2400-2	60KC	8	2	YES	2400-2	50	1.7	1.9	2.2	3.3	4.2	7.6	11	16	19	22	32	49	1500K	115	819
2400-2	60KC	10	2	YES	2400-2	35	1.8	2.0	2.4	3.5	4.0	7.1	11	14	19	23	30	50	1958K	96	870
2400-3	90KC	3	2	YES	2400-3	85	1.3	1.6	2.2	3.7	4.4	8.9	14	19	24	29	41	CE	263K	125	782
2400-3	90KC	4	2	YES	2400-3	85	1.3	1.6	2.1	3.2	3.9	7.2	11	15	18	22	30	49	517K	125	782
2400-3	90KC	6	2	YES	2400-3	50	1.5	1.7	2.1	3.1	3.5	6.2	9.3	12	16	19	25	43	1026K	125	839
2400-3	90KC	8	2	YES	2400-3	50	1.6	1.8	2.1	3.0	3.7	6.3	8.7	13	15	18	25	38	1500K	115	819
2400-3	90KC	10	2	YES	2400-3	35	1.8	2.0	2.3	3.2	3.6	6.1	9.0	12	16	18	24	39	1958K	96	870

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	35	2.9	7.1	15	36	44	98	160	230	CE	CE	CE	CE	105K	50	333
2400-1	30KC	4	1	NO	2400-1	35	2.5	5.2	11	24	33	71	120	160	220	280	410	CE	210K	50	333
2400-1	30KC	6	1	NO	2400-1	35	2.4	4.6	9.1	20	28	60	88	130	180	230	300	470	421K	50	332
2400-1	30KC	8	1	NO	2400-1	35	2.5	4.1	9.2	20	24	53	87	120	160	190	250	400	628K	50	332
2400-1	30KC	10	1	NO	2400-1	35	2.7	4.2	8.0	17	24	53	78	120	160	190	250	380	826K	50	338
2400-2	60KC	3	1	NO	2400-2	35	2.1	4.3	8.2	19	24	51	81	120	CE	CE	CE	CE	105K	50	333
2400-2	60KC	4	1	NO	2400-2	35	1.9	3.3	6.2	14	18	38	61	81	120	150	220	CE	210K	50	333
2400-2	60KC	6	1	NO	2400-2	35	1.9	3.1	5.5	11	15	32	47	69	94	120	160	250	421K	50	332
2400-2	60KC	8	1	NO	2400-2	35	2.0	2.9	5.6	11	14	28	46	61	82	98	130	210	628K	50	332
2400-2	60KC	10	1	NO	2400-2	35	2.2	3.0	5.0	9.7	14	29	42	62	80	99	140	200	826K	50	338
2400-3	90KC	3	1	NO	2400-3	35	1.8	3.3	6.1	14	17	36	57	81	CE	CE	CE	CE	105K	50	333
2400-3	90KC	4	1	NO	2400-3	35	1.7	2.7	4.7	9.5	13	27	43	57	80	110	150	CE	210K	50	333
2400-3	90KC	6	1	NO	2400-3	35	1.7	2.6	4.3	8.0	11	23	33	49	66	81	110	170	421K	50	332
2400-3	90KC	8	1	NO	2400-3	35	1.9	2.5	4.4	8.1	9.7	21	33	43	58	69	91	150	628K	50	332
2400-3	90KC	10	1	NO	2400-3	35	2.0	2.6	4.1	7.4	9.9	21	30	44	57	70	93	140	826K	50	338
2311	156KC	1	1	NO	2311	15	1.5	2.2	3.3	8.6	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	390
2311	156KC	2	1	NO	2311	15	1.5	2.2	3.3	7.8	9.4	CE	CE	CE	CE	CE	CE	CE	45K	18	390
2311	156KC	3	1	NO	2311	15	1.4	1.9	2.7	6.7	8.1	19	CE	CE	CE	CE	CE	CE	67K	18	390
2400-1	30KC	3	2	NO	2400-1	35	2.4	5.4	11	26	32	75	120	170	CE	CE	CE	CE	105K	50	286
2400-1	30KC	4	2	NO	2400-1	35	2.2	4.2	8.3	19	24	51	84	120	160	200	300	CE	209K	50	297
2400-1	30KC	6	2	NO	2400-1	35	2.1	3.8	7.2	16	21	41	67	93	120	140	220	350	408K	50	306
2400-1	30KC	8	2	NO	2400-1	25	2.2	3.5	6.6	15	18	41	61	80	99	120	190	280	599K	46	344
2400-1	30KC	10	2	NO	2400-1	25	2.3	3.6	6.7	14	18	34	50	81	100	120	160	240	779K	38	354
2400-2	60KC	3	2	NO	2400-2	35	1.8	3.4	6.2	14	17	39	60	83	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	NO	2400-2	35	1.7	2.8	4.9	11	13	27	44	58	82	110	160	CE	209K	50	297
2400-2	60KC	6	2	NO	2400-2	35	1.7	2.6	4.4	8.6	12	22	36	48	60	72	110	180	408K	50	306
2400-2	60KC	8	2	NO	2400-2	25	1.9	2.6	4.1	8.2	9.9	22	32	42	52	62	95	150	599K	46	344
2400-2	60KC	10	2	NO	2400-2	25	2.0	2.7	4.3	8.0	11	19	27	42	52	62	82	130	779K	38	354
2400-3	90KC	3	2	NO	2400-3	35	1.6	2.7	4.7	9.8	12	27	42	58	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	NO	2400-3	35	1.6	2.3	3.8	7.6	9.2	19	31	41	57	72	110	CE	209K	50	297
2400-3	90KC	6	2	NO	2400-3	35	1.6	2.3	3.5	6.4	8.4	16	25	34	42	50	75	130	408K	50	306
2400-3	90KC	8	2	NO	2400-3	25	1.7	2.3	3.4	6.2	7.4	16	23	30	36	43	66	98	599K	46	344
2400-3	90KC	10	2	NO	2400-3	25	1.9	2.4	3.5	6.2	7.6	14	19	30	37	44	57	84	779K	38	354
2311	156KC	2	2	NO	2311	15	1.5	2.0	3.8	6.4	7.7	CE	CE	CE	CE	CE	CE	CE	45K	18	376
2311	156KC	3	2	NO	2311	15	1.3	1.6	3.0	4.8	5.7	14	CE	CE	CE	CE	CE	CE	67K	18	376
2311	156KC	4	2	NO	2311	15	1.4	1.7	3.1	4.9	5.8	14	20	35	CE	CE	CE	CE	101K	18	376
2400-1	30KC	3	2	YES	2400-1	35	2.2	4.6	9.0	21	26	60	92	130	CE	CE	CE	CE	105K	50	286
2400-1	30KC	4	2	YES	2400-1	35	2.0	3.6	6.9	16	20	41	68	90	130	170	240	CE	209K	50	297
2400-1	30KC	6	2	YES	2400-1	35	2.0	3.2	5.9	12	17	35	52	76	110	130	180	280	408K	50	306
2400-1	30KC	8	2	YES	2400-1	25	2.1	3.0	6.1	12	15	32	52	69	93	120	150	240	599K	46	344
2400-1	30KC	10	2	YES	2400-1	25	2.3	3.1	5.4	11	15	32	47	76	91	120	150	230	779K	38	354
2400-2	60KC	3	2	YES	2400-2	35	1.7	2.9	5.2	12	14	31	47	66	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	YES	2400-2	35	1.6	2.5	4.1	8.5	11	22	35	47	65	82	130	CE	209K	50	297
2400-2	60KC	6	2	YES	2400-2	35	1.7	2.3	3.7	6.8	9.0	19	27	40	54	67	89	140	408K	50	306
2400-2	60KC	8	2	YES	2400-2	25	1.8	2.3	3.9	6.9	8.2	17	28	36	48	57	76	120	599K	46	344
2400-2	60KC	10	2	YES	2400-2	25	2.0	2.4	3.6	6.3	8.2	17	25	40	47	59	78	120	779K	38	354
2400-3	90KC	3	2	YES	2400-3	35	1.5	2.4	3.9	8.0	9.7	22	33	46	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	YES	2400-3	35	1.5	2.1	3.2	6.3	7.5	16	25	32	45	57	83	CE	209K	50	297
2400-3	90KC	6	2	YES	2400-3	35	1.6	2.1	3.0	5.2	6.7	14	20	28	38	47	61	96	408K	50	306
2400-3	90KC	8	2	YES	2400-3	25	1.7	2.1	3.2	5.3	6.2	13	20	26	34	40	53	84	599K	46	344
2400-3	90KC	10	2	YES	2400-3	25	1.9	2.2	3.1	5.0	6.2	13	18	28	33	41	54	80	779K	38	354

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-1	30KC	3	1	NO	2400-1	20	7.0	20	44	97	130	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-1	30KC	4	1	NO	2400-1	20	5.2	15	32	70	89	220	380	CE	CE	CE	CE	CE	84K	20	137
2400-1	30KC	6	1	NO	2400-1	20	4.5	13	27	59	73	180	280	380	480	630	CE	CE	168K	20	124
2400-1	30KC	8	1	NO	2400-1	20	4.0	11	24	52	65	160	230	310	410	500	700	CE	250K	20	133
2400-1	30KC	10	1	NO	2400-1	20	4.1	9.8	22	51	64	150	240	310	390	470	640	1100	328K	20	131
2400-2	60KC	3	1	NO	2400-2	20	4.2	11	23	51	67	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-2	60KC	4	1	NO	2400-2	20	3.3	8.2	17	37	46	120	200	CE	CE	CE	CE	CE	84K	20	137
2400-2	60KC	6	1	NO	2400-2	20	3.0	7.1	15	31	38	92	140	200	250	330	CE	CE	168K	20	124
2400-2	60KC	8	1	NO	2400-2	20	2.8	6.4	13	28	34	80	120	160	210	260	360	CE	250K	20	133
2400-2	60KC	10	1	NO	2400-2	20	2.9	5.9	13	28	34	78	120	160	200	240	330	550	328K	20	131
2400-3	90KC	3	1	NO	2400-3	20	3.2	7.5	16	35	46	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-3	90KC	4	1	NO	2400-3	20	2.7	6.0	12	26	32	77	140	CE	CE	CE	CE	CE	84K	20	137
2400-3	90KC	6	1	NO	2400-3	20	2.5	5.3	11	22	27	64	97	140	170	220	CE	CE	168K	20	124
2400-3	90KC	8	1	NO	2400-3	20	2.4	4.9	9.3	20	24	55	82	110	150	180	250	CE	250K	20	133
2400-3	90KC	10	1	NO	2400-3	20	2.5	4.6	9.0	20	24	54	83	110	140	170	230	380	328K	20	131
2311	156KC	1	1	NO	2311	6	2.1	5.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	161
2311	156KC	2	1	NO	2311	6	2.1	5.2	9.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	161
2311	156KC	3	1	NO	2311	6	1.9	4.5	7.8	18	22	CE	CE	CE	CE	CE	CE	CE	26K	7	161
2400-1	30KC	3	2	NO	2400-1	20	5.4	15	32	74	93	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-1	30KC	4	2	NO	2400-1	20	4.2	11	24	51	70	160	280	CE	CE	CE	CE	CE	82K	20	108
2400-1	30KC	6	2	NO	2400-1	20	3.8	9.4	21	42	55	120	200	280	360	480	CE	CE	162K	20	114
2400-1	30KC	8	2	NO	2400-1	15	3.7	8.9	18	41	50	98	180	230	290	390	540	CE	239K	18	133
2400-1	30KC	10	2	NO	2400-1	15	3.6	7.9	18	34	42	99	150	200	250	300	510	850	310K	15	135
2400-2	60KC	3	2	NO	2400-2	20	3.3	8.1	17	39	48	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	NO	2400-2	20	2.8	6.2	13	27	36	82	150	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	NO	2400-2	20	2.6	5.5	12	22	29	59	110	150	190	250	CE	CE	162K	20	114
2400-2	60KC	8	2	NO	2400-2	15	2.6	5.3	9.7	22	27	51	88	120	150	200	280	CE	239K	18	133
2400-2	60KC	10	2	NO	2400-2	15	2.7	4.8	9.9	18	22	51	76	100	130	150	260	440	310K	15	135
2400-3	90KC	3	2	NO	2400-3	20	2.6	5.9	12	27	33	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	NO	2400-3	20	2.3	4.6	8.8	19	25	56	97	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	NO	2400-3	20	2.2	4.2	8.1	16	20	41	69	98	130	170	CE	CE	162K	20	114
2400-3	90KC	8	2	NO	2400-3	15	2.3	4.1	7.1	15	19	35	60	79	99	140	190	CE	239K	18	133
2400-3	90KC	10	2	NO	2400-3	15	2.3	3.8	7.3	13	16	35	52	68	84	110	180	300	310K	15	135
2311	156KC	2	2	NO	2311	6	1.9	4.3	7.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	155
2311	156KC	3	2	NO	2311	6	1.5	3.3	5.3	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	155
2311	156KC	4	2	NO	2311	6	1.6	3.3	5.4	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	155
2400-1	30KC	3	2	YES	2400-1	20	4.6	13	26	60	75	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-1	30KC	4	2	YES	2400-1	20	3.6	9.0	19	41	56	130	230	CE	CE	CE	CE	CE	82K	20	108
2400-1	30KC	6	2	YES	2400-1	20	3.2	7.9	17	35	43	110	170	230	290	380	CE	CE	162K	20	114
2400-1	30KC	8	2	YES	2400-1	15	3.2	7.1	15	32	39	93	140	190	250	300	430	CE	239K	18	133
2400-1	30KC	10	2	YES	2400-1	15	3.1	7.3	15	32	39	91	150	190	240	290	390	670	310K	15	135
2400-2	60KC	3	2	YES	2400-2	20	2.9	6.7	14	31	39	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	YES	2400-2	20	2.5	5.2	11	22	29	66	120	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	YES	2400-2	20	2.3	4.7	8.9	19	23	54	83	120	150	200	CE	CE	162K	20	114
2400-2	60KC	8	2	YES	2400-2	15	2.4	4.4	8.1	17	21	48	71	94	130	160	220	CE	239K	18	133
2400-2	60KC	10	2	YES	2400-2	15	2.4	4.6	8.4	17	21	47	73	96	120	150	200	340	310K	15	135
2400-3	90KC	3	2	YES	2400-3	20	2.3	4.9	9.5	21	27	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	YES	2400-3	20	2.1	3.9	7.3	15	20	45	77	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	YES	2400-3	20	2.0	3.6	6.5	13	16	37	56	77	98	130	CE	CE	162K	20	114
2400-3	90KC	8	2	YES	2400-3	15	2.1	3.5	6.0	12	15	33	48	64	84	110	150	CE	239K	18	133
2400-3	90KC	10	2	YES	2400-3	15	2.2	3.7	6.2	12	15	32	50	65	81	97	140	230	310K	15	135

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.3	1.5	1.7	2.5	2.9	6.0	9.3	12	17	20	28	42	1053K	500	5558
2400-2	60KC	4	1	NO	2400-2	350	1.3	1.5	1.8	2.4	2.7	4.8	7.4	11	13	16	22	33	2106K	500	5556
2400-2	60KC	6	1	NO	2400-2	350	1.5	1.7	2.0	2.6	2.9	4.4	6.7	9.6	12	14	20	29	4213K	500	5556
2400-2	60KC	8	1	NO	2400-2	350	1.6	1.8	2.1	2.7	3.0	4.6	6.1	8.7	11	14	18	30	6320K	500	5547
2400-2	60KC	10	1	NO	2400-2	300	1.8	2.0	2.3	2.9	3.2	4.7	6.3	7.8	11	13	17	27	8427K	500	5608
2400-3	90KC	3	1	NO	2400-3	350	1.3	1.4	1.7	2.4	2.8	5.4	8.3	11	15	17	25	37	1053K	500	5558
2400-3	90KC	4	1	NO	2400-3	350	1.3	1.5	1.8	2.3	2.6	4.5	6.7	9.5	12	14	20	29	2106K	500	5556
2400-3	90KC	6	1	NO	2400-3	350	1.5	1.6	1.9	2.5	2.7	4.1	6.2	8.7	11	13	18	26	4213K	500	5556
2400-3	90KC	8	1	NO	2400-3	350	1.6	1.8	2.1	2.6	2.9	4.3	5.7	8.0	9.6	13	17	27	6320K	500	5547
2400-3	90KC	10	1	NO	2400-3	300	1.7	1.9	2.2	2.8	3.1	4.5	5.9	7.3	9.8	12	15	24	8427K	500	5608
2311	156KC	1	1	NO	2311	125	1.2	1.4	1.6	2.2	2.5	3.9	5.3	6.7	8.1	9.5	17	CE	227K	181	5966
2311	156KC	2	1	NO	2311	125	1.2	1.4	1.6	2.2	2.5	3.9	5.3	6.7	8.1	9.5	17	26	455K	181	5966
2311	156KC	3	1	NO	2311	125	1.2	1.4	1.6	2.2	2.5	3.9	5.3	6.7	8.1	9.4	17	26	683K	181	5966
2400-2	60KC	3	2	NO	2400-2	350	1.3	1.4	1.7	2.2	2.7	5.1	7.8	9.9	14	16	23	34	1053K	500	5515
2400-2	60KC	4	2	NO	2400-2	350	1.3	1.5	1.7	2.3	2.5	4.3	6.4	8.9	11	13	19	27	2106K	500	5530
2400-2	60KC	6	2	NO	2400-2	350	1.5	1.6	1.9	2.4	2.7	4.0	6.0	7.9	11	12	17	25	4213K	500	5556
2400-2	60KC	8	2	NO	2400-2	350	1.6	1.8	2.0	2.6	2.8	4.2	5.6	7.8	9.3	12	16	25	6281K	500	5221
2400-2	60KC	10	2	NO	2400-2	300	1.7	1.9	2.2	2.7	3.0	4.3	5.8	7.1	9.6	12	15	24	8268K	500	5301
2400-3	90KC	3	2	NO	2400-3	350	1.2	1.4	1.6	2.2	2.6	4.9	7.3	9.4	13	15	21	32	1053K	500	5515
2400-3	90KC	4	2	NO	2400-3	350	1.3	1.5	1.7	2.2	2.5	4.2	6.1	8.4	11	12	18	26	2106K	500	5530
2400-3	90KC	6	2	NO	2400-3	350	1.5	1.6	1.9	2.4	2.6	3.9	5.7	7.7	9.6	12	16	24	4213K	500	5556
2400-3	90KC	8	2	NO	2400-3	350	1.6	1.7	2.0	2.5	2.8	4.1	5.4	7.4	8.9	12	15	24	6281K	500	5221
2400-3	90KC	10	2	NO	2400-3	300	1.7	1.9	2.1	2.7	2.9	4.2	5.5	6.8	9.1	11	15	22	8268K	500	5301
2311	156KC	2	2	NO	2311	125	1.2	1.4	1.7	2.3	2.5	4.0	5.4	6.8	8.2	9.7	15	23	455K	181	5885
2311	156KC	3	2	NO	2311	125	1.2	1.4	1.6	2.1	2.3	3.6	4.8	6.0	7.2	8.4	13	20	683K	181	5885
2311	156KC	4	2	NO	2311	125	1.3	1.4	1.6	2.2	2.4	3.6	4.8	6.1	7.3	8.5	13	20	1025K	181	5882
2400-2	60KC	3	2	YES	2400-2	350	1.2	1.4	1.6	2.2	2.5	4.7	7.0	8.9	12	14	20	30	1053K	500	5515
2400-2	60KC	4	2	YES	2400-2	350	1.3	1.5	1.7	2.2	2.4	4.0	5.9	8.1	9.8	12	17	24	2106K	500	5530
2400-2	60KC	6	2	YES	2400-2	350	1.5	1.6	1.9	2.3	2.6	3.8	5.5	7.6	9.1	11	15	22	4213K	500	5556
2400-2	60KC	8	2	YES	2400-2	350	1.6	1.8	2.0	2.5	2.7	3.9	5.2	7.1	8.5	11	14	23	6281K	500	5221
2400-2	60KC	10	2	YES	2400-2	300	1.7	1.9	2.2	2.6	2.9	4.1	5.3	6.6	8.7	11	15	21	8268K	500	5301
2400-3	90KC	3	2	YES	2400-3	350	1.2	1.4	1.6	2.2	2.5	4.6	6.8	8.7	12	14	20	29	1053K	500	5515
2400-3	90KC	4	2	YES	2400-3	350	1.3	1.5	1.7	2.2	2.4	4.0	5.7	7.9	9.5	12	16	24	2106K	500	5530
2400-3	90KC	6	2	YES	2400-3	350	1.5	1.6	1.8	2.3	2.5	3.7	5.4	7.4	8.9	11	15	22	4213K	500	5556
2400-3	90KC	8	2	YES	2400-3	350	1.6	1.7	2.0	2.5	2.7	3.9	5.1	7.0	8.3	11	14	22	6281K	500	5221
2400-3	90KC	10	2	YES	2400-3	300	1.7	1.9	2.1	2.6	2.9	4.1	5.3	6.5	8.6	9.9	14	21	8268K	500	5301

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	90	1.4	1.8	3.1	5.8	7.2	17	27	36	49	59	85	CE	263K	125	1874
2400-2	60KC	4	1	NO	2400-2	90	1.5	1.8	2.5	5.0	5.9	13	20	27	37	44	64	120	526K	125	1874
2400-2	60KC	6	1	NO	2400-2	90	1.6	2.0	2.6	4.4	5.2	11	18	23	31	37	49	83	1053K	125	1872
2400-2	60KC	8	1	NO	2400-2	90	1.8	2.1	2.7	4.0	4.6	11	15	23	28	33	49	84	1580K	125	1871
2400-2	60KC	10	1	NO	2400-2	90	1.9	2.3	2.9	4.1	4.7	9.2	16	20	25	33	43	71	2083K	125	1869
2400-3	90KC	3	1	NO	2400-3	90	1.3	1.6	2.6	4.6	5.6	13	20	27	36	43	62	CE	263K	125	1874
2400-3	90KC	4	1	NO	2400-3	90	1.4	1.7	2.2	4.1	4.8	9.3	15	20	27	33	47	83	526K	125	1874
2400-3	90KC	6	1	NO	2400-3	90	1.6	1.9	2.3	3.7	4.3	8.3	14	18	24	28	37	62	1053K	125	1872
2400-3	90KC	8	1	NO	2400-3	90	1.7	2.0	2.5	3.4	3.9	8.4	12	18	21	25	37	63	1580K	125	1871
2400-3	90KC	10	1	NO	2400-3	90	1.8	2.1	2.6	3.6	4.1	7.5	12	16	19	25	33	54	2083K	125	1869
2311	156KC	1	1	NO	2311	30	1.3	1.6	2.2	3.2	3.8	6.4	CE	CE	CE	CE	CE	CE	56K	45	2019
2311	156KC	2	1	NO	2311	30	1.3	1.6	2.2	3.2	3.8	6.4	15	20	CE	CE	CE	CE	113K	45	2019
2311	156KC	3	1	NO	2311	30	1.3	1.6	2.0	3.0	3.4	5.7	14	18	22	27	CE	CE	170K	45	2019
2400-2	60KC	3	2	NO	2400-2	90	1.3	1.6	2.6	4.5	5.9	12	20	26	35	42	60	CE	263K	125	1764
2400-2	60KC	4	2	NO	2400-2	90	1.4	1.6	2.1	3.9	4.6	8.9	15	20	26	31	46	81	526K	125	1764
2400-2	60KC	6	2	NO	2400-2	90	1.5	1.8	2.2	3.7	4.2	8.1	13	16	23	28	36	54	1053K	125	1852
2400-2	60KC	8	2	NO	2400-2	90	1.7	1.9	2.3	3.4	3.9	7.2	12	16	20	23	30	53	1580K	125	1761
2400-2	60KC	10	2	NO	2400-2	90	1.8	2.0	2.5	3.5	4.0	7.4	11	16	20	24	31	45	2015K	125	1795
2400-3	90KC	3	2	NO	2400-3	90	1.3	1.5	2.3	3.7	4.7	9.2	15	20	26	31	44	CE	263K	125	1764
2400-3	90KC	4	2	NO	2400-3	90	1.4	1.6	2.0	3.3	3.8	7.1	12	15	20	24	34	59	526K	125	1764
2400-3	90KC	6	2	NO	2400-3	90	1.5	1.7	2.0	3.2	3.6	6.6	9.6	13	18	21	28	41	1053K	125	1852
2400-3	90KC	8	2	NO	2400-3	90	1.6	1.8	2.2	3.0	3.4	6.0	9.5	13	16	18	24	41	1580K	125	1761
2400-3	90KC	10	2	NO	2400-3	90	1.8	2.0	2.3	3.2	3.6	6.2	8.4	13	16	19	24	35	2015K	125	1795
2311	156KC	2	2	NO	2311	30	1.3	1.6	2.1	3.1	3.6	6.0	13	17	CE	CE	CE	CE	113K	45	1992
2311	156KC	3	2	NO	2311	30	1.2	1.5	1.8	2.4	2.7	4.4	11	14	17	20	CE	CE	170K	45	1992
2311	156KC	4	2	NO	2311	30	1.3	1.5	1.8	2.5	2.8	4.4	11	14	17	20	26	CE	255K	45	1991
2400-2	60KC	3	2	YES	2400-2	90	1.3	1.5	2.3	3.8	5.0	9.7	16	21	28	33	48	CE	263K	125	1764
2400-2	60KC	4	2	YES	2400-2	90	1.4	1.6	2.0	3.4	3.9	7.4	12	16	21	25	37	64	526K	125	1764
2400-2	60KC	6	2	YES	2400-2	90	1.5	1.7	2.1	3.1	3.6	6.6	11	14	18	22	28	47	1053K	125	1852
2400-2	60KC	8	2	YES	2400-2	90	1.7	1.9	2.2	2.9	3.3	6.7	9.2	14	17	20	28	48	1580K	125	1761
2400-2	60KC	10	2	YES	2400-2	90	1.8	2.0	2.4	3.1	3.4	6.0	9.3	12	15	20	25	41	2015K	125	1795
2400-3	90KC	3	2	YES	2400-3	90	1.3	1.5	2.1	3.2	4.0	7.6	12	16	21	25	35	CE	263K	125	1764
2400-3	90KC	4	2	YES	2400-3	90	1.3	1.5	1.8	2.9	3.4	6.0	9.3	13	17	19	28	48	526K	125	1764
2400-3	90KC	6	2	YES	2400-3	90	1.5	1.7	2.0	2.8	3.2	5.5	8.4	11	15	17	22	37	1053K	125	1852
2400-3	90KC	8	2	YES	2400-3	90	1.6	1.8	2.1	2.7	3.1	5.7	7.7	11	14	16	22	37	1580K	125	1761
2400-3	90KC	10	2	YES	2400-3	90	1.8	2.0	2.3	2.9	3.2	5.3	7.9	10	13	16	21	33	2015K	125	1795

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.7	3.4	6.5	16	19	46	75	99	CE	CE	CE	CE	105K	50	808
2400-2	60KC	4	1	NO	2400-2	35	1.8	2.9	5.4	12	14	34	50	74	110	140	200	CE	200K	50	817
2400-2	60KC	6	1	NO	2400-2	35	1.9	2.7	4.7	9.5	12	26	42	62	79	97	150	220	421K	50	807
2400-2	60KC	8	1	NO	2400-2	35	2.0	2.8	4.2	8.2	12	25	37	55	79	92	130	200	632K	50	806
2400-2	60KC	10	1	NO	2400-2	35	2.2	3.0	4.3	8.3	10	22	37	48	66	79	120	180	842K	50	806
2400-3	90KC	3	1	NO	2400-3	35	1.5	2.7	4.9	11	14	32	52	69	CE	CE	CE	CE	105K	50	808
2400-3	90KC	4	1	NO	2400-3	35	1.6	2.5	4.2	8.1	11	24	35	52	73	93	140	CE	200K	50	817
2400-3	90KC	6	1	NO	2400-3	35	1.8	2.3	3.8	7.1	8.5	19	30	44	56	69	99	160	421K	50	807
2400-3	90KC	8	1	NO	2400-3	35	1.9	2.5	3.4	6.3	8.6	18	27	39	56	65	91	140	632K	50	806
2400-3	90KC	10	1	NO	2400-3	35	2.0	2.6	3.6	6.4	7.6	16	27	35	47	56	82	130	842K	50	806
2311	156KC	1	1	NO	2311	15	1.5	2.2	3.3	5.4	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	865
2311	156KC	2	1	NO	2311	15	1.5	2.2	3.3	5.4	6.5	CE	CE	CE	CE	CE	CE	CE	45K	18	865
2311	156KC	3	1	NO	2311	15	1.5	1.9	2.7	4.4	5.2	19	CE	CE	CE	CE	CE	CE	68K	18	865
2400-2	60KC	3	2	NO	2400-2	35	1.5	2.7	4.9	12	14	33	53	70	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	NO	2400-2	35	1.6	2.4	4.2	8.2	12	24	36	52	79	99	150	CE	210K	50	782
2400-2	60KC	6	2	NO	2400-2	35	1.7	2.3	3.8	7.3	8.9	20	31	41	51	71	94	160	421K	50	759
2400-2	60KC	8	2	NO	2400-2	35	1.8	2.4	3.5	6.5	7.8	18	26	34	51	60	80	120	632K	50	759
2400-2	60KC	10	2	NO	2400-2	35	2.0	2.5	3.6	6.7	7.9	17	26	34	42	50	68	120	835K	50	770
2400-3	90KC	3	2	NO	2400-3	35	1.4	2.3	3.8	8.1	9.8	23	37	49	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	NO	2400-3	35	1.5	2.1	3.3	6.1	8.2	17	25	37	55	69	99	CE	210K	50	782
2400-3	90KC	6	2	NO	2400-3	35	1.6	2.1	3.1	5.6	6.7	15	22	29	36	50	65	110	421K	50	759
2400-3	90KC	8	2	NO	2400-3	35	1.7	2.1	2.9	5.1	6.0	13	19	24	36	43	56	83	632K	50	759
2400-3	90KC	10	2	NO	2400-3	35	1.9	2.3	3.1	5.2	6.1	13	19	24	30	36	48	83	835K	50	770
2311	156KC	2	2	NO	2311	15	1.5	2.0	2.9	4.7	5.6	CE	CE	CE	CE	CE	CE	CE	45K	18	851
2311	156KC	3	2	NO	2311	15	1.3	1.6	2.1	3.1	3.6	14	CE	CE	CE	CE	CE	CE	68K	18	851
2311	156KC	4	2	NO	2311	15	1.4	1.7	2.2	3.1	3.6	14	20	26	CE	CE	CE	CE	102K	18	850
2400-2	60KC	3	2	YES	2400-2	35	1.4	2.4	4.1	9.0	11	26	42	56	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	YES	2400-2	35	1.5	2.2	3.6	6.7	9.1	20	29	42	63	78	120	CE	210K	50	782
2400-2	60KC	6	2	YES	2400-2	35	1.7	2.1	3.2	5.9	7.1	16	24	35	45	55	79	130	421K	50	759
2400-2	60KC	8	2	YES	2400-2	35	1.8	2.2	3.0	5.2	7.1	15	21	31	45	52	73	110	632K	50	759
2400-2	60KC	10	2	YES	2400-2	35	2.0	2.4	3.1	5.4	6.3	13	21	28	38	45	66	110	835K	50	770
2400-3	90KC	3	2	YES	2400-3	35	1.4	2.0	3.2	6.6	8.0	19	30	39	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	YES	2400-3	35	1.4	1.9	2.9	5.1	6.8	14	20	29	44	54	78	CE	210K	50	782
2400-3	90KC	6	2	YES	2400-3	35	1.6	1.9	2.7	4.6	5.4	12	17	25	32	39	55	84	421K	50	759
2400-3	90KC	8	2	YES	2400-3	35	1.7	2.0	2.6	4.2	5.5	11	16	22	32	37	51	75	632K	50	759
2400-3	90KC	10	2	YES	2400-3	35	1.9	2.2	2.7	4.3	5.0	9.5	16	20	27	32	47	71	835K	50	770

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	3.3	8.7	19	45	56	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-2	60KC	4	1	NO	2400-2	20	2.9	6.3	14	33	41	99	180	CE	CE	CE	CE	CE	81K	20	326
2400-2	60KC	6	1	NO	2400-2	20	2.6	5.4	12	25	34	77	120	180	240	300	CE	CE	162K	20	326
2400-2	60KC	8	1	NO	2400-2	20	2.8	5.5	12	24	30	77	120	160	200	240	340	CE	252K	20	320
2400-2	60KC	10	1	NO	2400-2	20	2.9	4.8	9.6	21	30	64	95	140	190	230	300	500	337K	20	320
2400-3	90KC	3	1	NO	2400-3	20	2.6	6.3	13	31	39	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-3	90KC	4	1	NO	2400-3	20	2.4	4.7	9.6	23	29	69	130	CE	CE	CE	CE	CE	81K	20	326
2400-3	90KC	6	1	NO	2400-3	20	2.2	4.2	8.1	18	24	53	81	120	160	210	CE	CE	162K	20	326
2400-3	90KC	8	1	NO	2400-3	20	2.4	4.3	8.2	17	21	53	81	110	140	170	230	CE	252K	20	320
2400-3	90KC	10	1	NO	2400-3	20	2.5	3.8	7.2	15	21	45	66	96	130	160	210	340	337K	20	320
2311	156KC	1	1	NO	2311	6	2.1	3.6	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	356
2311	156KC	2	1	NO	2311	6	2.1	3.6	6.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	356
2311	156KC	3	1	NO	2311	6	1.9	3.0	4.8	18	22	CE	CE	CE	CE	CE	CE	CE	26K	7	356
2400-2	60KC	3	2	NO	2400-2	20	2.7	6.5	14	32	40	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	NO	2400-2	20	2.4	4.9	11	24	29	78	130	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	NO	2400-2	20	2.3	4.4	8.8	20	26	51	87	130	170	220	CE	CE	168K	20	301
2400-2	60KC	8	2	NO	2400-2	20	2.4	4.5	7.8	18	22	50	74	98	130	180	250	CE	252K	20	300
2400-2	60KC	10	2	NO	2400-2	20	2.5	4.0	7.7	17	22	41	61	98	130	150	230	370	333K	20	302
2400-3	90KC	3	2	NO	2400-3	20	2.2	4.8	9.4	22	28	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	NO	2400-3	20	2.0	3.8	7.9	17	21	53	89	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	NO	2400-3	20	2.0	3.4	6.4	14	18	35	59	86	120	150	CE	CE	168K	20	301
2400-3	90KC	8	2	NO	2400-3	20	2.1	3.6	5.8	13	15	35	51	67	83	120	170	CE	252K	20	300
2400-3	90KC	10	2	NO	2400-3	20	2.2	3.3	5.8	12	16	29	42	67	83	99	160	250	333K	20	302
2311	156KC	2	2	NO	2311	6	1.9	3.2	5.3	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	351
2311	156KC	3	2	NO	2311	6	1.5	2.1	3.2	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	351
2311	156KC	4	2	NO	2311	6	1.6	2.2	3.2	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	350
2400-2	60KC	3	2	YES	2400-2	20	2.4	5.4	11	26	32	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	YES	2400-2	20	2.2	4.2	9.0	19	24	62	110	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	YES	2400-2	20	2.1	3.7	7.0	16	20	44	73	99	140	170	CE	CE	168K	20	301
2400-2	60KC	8	2	YES	2400-2	20	2.2	3.8	7.0	15	18	44	67	89	110	140	190	CE	252K	20	300
2400-2	60KC	10	2	YES	2400-2	20	2.4	3.4	6.2	13	18	37	55	80	110	130	170	290	333K	20	302
2400-3	90KC	3	2	YES	2400-3	20	2.0	4.0	7.7	18	22	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	YES	2400-3	20	1.9	3.2	6.5	14	17	42	70	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	YES	2400-3	20	1.8	2.9	5.2	11	14	30	49	67	89	120	CE	CE	168K	20	301
2400-3	90KC	8	2	YES	2400-3	20	2.0	3.1	5.2	11	13	30	46	60	75	90	130	CE	252K	20	300
2400-3	90KC	10	2	YES	2400-3	20	2.1	2.9	4.7	9.0	13	26	38	54	71	86	120	200	333K	20	302

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	200	1.1	1.4	1.7	2.7	3.1	6.1	8.9	12	16	19	27	41	1049K	464	805
2400-2	60KC	4	1	NO	2400-2	200	1.2	1.3	1.7	2.3	2.7	4.9	6.8	9.5	12	14	20	30	1880K	463	889
2400-2	60KC	6	1	NO	2400-2	110	1.3	1.4	1.7	2.3	2.6	4.2	6.2	7.9	11	13	16	26	3906K	367	924
2400-2	60KC	10	1	NO	2400-2	110	1.5	1.6	1.8	2.4	2.6	4.2	6.1	7.5	9.0	12	15	24	7238K	258	981
2400-3	90KC	3	1	NO	2400-3	200	1.1	1.3	1.6	2.3	2.6	4.8	6.9	9.1	12	15	20	30	1049K	464	805
2400-3	90KC	4	1	NO	2400-3	200	1.2	1.3	1.6	2.1	2.3	4.0	5.4	7.4	9.0	11	15	23	1880K	463	889
2400-3	90KC	6	1	NO	2400-3	110	1.3	1.4	1.6	2.1	2.3	3.6	5.1	6.4	8.3	9.7	13	20	3906K	367	924
2400-3	90KC	10	1	NO	2400-3	110	1.5	1.6	1.8	2.2	2.4	3.6	5.1	6.3	7.4	9.4	12	19	7238K	258	981
2311	156KC	1	1	NO	2311	125	1.1	1.2	1.3	2.0	2.2	3.3	4.5	5.6	9.1	11	14	CE	218K	181	880
2311	156KC	2	1	NO	2311	125	1.1	1.2	1.3	1.9	2.1	3.2	4.2	5.3	8.0	9.4	13	20	436K	181	880
2311	156KC	3	1	NO	2311	125	1.1	1.2	1.3	1.9	2.1	3.0	4.0	5.0	7.7	9.0	12	19	655K	181	880
2311	156KC	4	1	NO	2311	125	1.1	1.2	1.3	1.9	2.1	3.1	4.1	5.1	7.7	9.0	12	19	982K	181	877
2400-2	60KC	3	2	NO	2400-2	200	1.1	1.3	1.6	2.3	2.6	4.8	7.1	9.2	12	15	20	32	1025K	312	592
2400-2	60KC	4	2	NO	2400-2	200	1.2	1.3	1.5	2.0	2.3	3.9	5.4	7.3	8.9	11	15	24	1866K	308	680
2400-2	60KC	6	2	NO	2400-2	110	1.3	1.3	1.6	2.1	2.3	3.5	5.1	6.4	7.8	9.2	13	19	3540K	229	896
2400-2	60KC	10	2	NO	2400-2	110	1.5	1.6	1.7	2.2	2.4	3.4	4.9	5.9	7.0	8.0	11	17	6114K	151	971
2400-3	90KC	3	2	NO	2400-3	200	1.1	1.3	1.5	2.0	2.3	3.8	5.5	7.1	9.1	11	15	24	1025K	312	592
2400-3	90KC	4	2	NO	2400-3	200	1.1	1.3	1.5	1.9	2.1	3.3	4.4	5.9	7.0	8.5	12	18	1866K	308	680
2400-3	90KC	6	2	NO	2400-3	110	1.3	1.3	1.6	1.9	2.1	3.1	4.3	5.3	6.4	7.5	11	15	3540K	229	896
2400-3	90KC	10	2	NO	2400-3	110	1.5	1.5	1.7	2.1	2.2	3.0	4.2	5.1	5.9	6.8	8.4	14	6114K	151	971
2311	156KC	1	2	NO	2311	125	1.1	1.3	1.5	2.0	2.2	4.3	5.9	7.5	12	15	19	CE	217K	181	798
2311	156KC	2	2	NO	2311	125	1.1	1.2	1.4	1.8	2.0	3.4	4.5	5.6	7.7	11	14	20	434K	181	798
2311	156KC	3	2	NO	2311	125	1.1	1.2	1.3	1.6	1.8	3.0	3.9	4.8	6.7	9.1	12	17	651K	181	798
2311	156KC	4	2	NO	2311	125	1.1	1.3	1.4	1.7	1.8	3.1	4.0	4.9	6.8	9.2	12	17	977K	181	795
2400-2	60KC	3	2	YES	2400-2	200	1.1	1.3	1.5	2.1	2.3	4.1	5.9	7.6	9.8	12	17	26	1025K	312	592
2400-2	60KC	4	2	YES	2400-2	200	1.2	1.3	1.5	1.9	2.1	3.4	4.6	6.1	7.4	8.9	12	19	1866K	308	680
2400-2	60KC	6	2	YES	2400-2	110	1.3	1.3	1.5	1.9	2.1	3.1	4.3	5.3	6.8	7.9	10	16	3540K	229	896
2400-2	60KC	10	2	YES	2400-2	110	1.5	1.6	1.7	2.1	2.2	3.2	4.3	5.2	6.1	7.7	9.7	16	6114K	151	971
2400-3	90KC	3	2	YES	2400-3	200	1.1	1.2	1.4	1.8	2.0	3.3	4.7	6.0	7.6	8.9	13	19	1025K	312	592
2400-3	90KC	4	2	YES	2400-3	200	1.1	1.3	1.4	1.7	1.9	2.9	3.8	5.0	6.0	7.1	9.5	15	1866K	308	680
2400-3	90KC	6	2	YES	2400-3	110	1.3	1.3	1.5	1.8	2.0	2.8	3.7	4.5	5.6	6.5	8.2	13	3540K	229	896
2400-3	90KC	10	2	YES	2400-3	110	1.5	1.5	1.7	2.0	2.1	2.9	3.9	4.6	5.4	6.6	8.3	13	6114K	151	971

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	45	1.4	2.3	4.0	8.1	11	23	36	48	63	75	110	CE	262K	117	261
2400-2	60KC	4	1	NO	2400-2	45	1.4	2.1	3.4	6.3	7.6	16	26	35	45	54	78	140	501K	115	258
2400-2	60KC	6	1	NO	2400-2	35	1.5	2.0	3.0	5.4	6.8	14	21	29	36	45	62	98	985K	91	298
2400-2	60KC	10	1	NO	2400-2	25	1.7	2.0	3.0	5.0	6.6	13	19	28	34	40	59	88	1849K	64	336
2400-3	90KC	3	1	NO	2400-3	45	1.3	1.9	3.1	5.9	7.3	16	25	33	43	52	73	CE	262K	117	261
2400-3	90KC	4	1	NO	2400-3	45	1.3	1.8	2.7	4.7	5.6	12	18	24	31	37	54	90	501K	115	258
2400-3	90KC	6	1	NO	2400-3	35	1.4	1.7	2.5	4.1	5.1	9.8	15	21	25	31	43	67	985K	91	298
2400-3	90KC	10	1	NO	2400-3	25	1.6	1.9	2.5	4.0	5.0	9.4	14	20	24	28	41	61	1849K	64	336
2311	156KC	1	1	NO	2311	30	1.2	1.8	2.5	4.0	4.7	13	CE	CE	CE	CE	CE	CE	55K	45	298
2311	156KC	2	1	NO	2311	30	1.2	1.7	2.4	3.7	4.3	12	17	22	CE	CE	CE	CE	110K	45	298
2311	156KC	3	1	NO	2311	30	1.1	1.6	2.2	3.3	3.8	11	15	20	24	29	CE	CE	165K	45	298
2311	156KC	4	1	NO	2311	30	1.2	1.7	2.2	3.3	3.9	11	15	20	24	29	38	CE	247K	45	297
2400-2	60KC	3	2	NO	2400-2	45	1.4	2.0	3.4	6.3	8.0	17	27	37	47	57	79	CE	256K	77	208
2400-2	60KC	4	2	NO	2400-2	45	1.3	1.9	2.8	5.0	5.9	13	19	27	34	40	58	99	476K	77	238
2400-2	60KC	6	2	NO	2400-2	35	1.4	1.8	2.7	4.7	5.6	11	17	22	27	34	47	70	896K	57	290
2400-2	60KC	10	2	NO	2400-2	25	1.6	1.9	2.7	4.4	5.3	8.9	13	20	24	28	37	55	1577K	37	332
2400-3	90KC	3	2	NO	2400-3	45	1.3	1.7	2.7	4.6	5.8	12	19	25	32	39	54	CE	256K	77	208
2400-3	90KC	4	2	NO	2400-3	45	1.3	1.7	2.3	3.7	4.4	8.6	14	19	23	28	40	68	476K	77	238
2400-3	90KC	6	2	NO	2400-3	35	1.3	1.6	2.2	3.6	4.2	7.6	12	15	19	23	33	48	896K	57	290
2400-3	90KC	10	2	NO	2400-3	25	1.5	1.8	2.3	3.5	4.1	6.6	9.0	14	17	20	26	38	1577K	37	332
2311	156KC	2	2	NO	2311	30	1.3	1.6	2.5	3.9	4.6	12	16	21	CE	CE	CE	CE	109K	45	272
2311	156KC	3	2	NO	2311	30	1.2	1.4	2.2	3.3	3.8	9.5	14	18	22	38	CE	CE	164K	45	272
2311	156KC	4	2	NO	2311	30	1.3	1.5	2.3	3.3	3.9	9.6	14	18	22	38	50	CE	246K	45	271
2400-2	60KC	3	2	YES	2400-2	45	1.3	1.8	3.0	5.3	6.6	14	22	29	38	46	63	CE	256K	77	208
2400-2	60KC	4	2	YES	2400-2	45	1.3	1.7	2.5	4.2	5.0	9.9	16	22	27	33	46	79	476K	77	238
2400-2	60KC	6	2	YES	2400-2	35	1.4	1.7	2.4	4.0	4.6	8.6	14	18	22	29	38	60	896K	57	290
2400-2	60KC	10	2	YES	2400-2	25	1.6	1.8	2.4	3.7	4.6	8.5	12	18	21	25	37	55	1577K	37	332
2400-3	90KC	3	2	YES	2400-3	45	1.2	1.6	2.4	3.9	4.8	9.5	15	20	26	31	43	CE	256K	77	208
2400-3	90KC	4	2	YES	2400-3	45	1.3	1.6	2.1	3.2	3.7	7.1	11	15	19	22	32	54	476K	77	238
2400-3	90KC	6	2	YES	2400-3	35	1.3	1.5	2.0	3.1	3.5	6.2	9.3	13	15	20	26	41	896K	57	290
2400-3	90KC	10	2	YES	2400-3	25	1.5	1.7	2.1	3.0	3.6	6.2	8.6	13	15	18	25	38	1577K	37	332

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	2.3	4.9	9.8	22	28	62	98	140	CE	CE	CE	CE	104K	46	103
2400-2	60KC	4	1	NO	2400-2	20	2.0	3.9	7.4	16	21	44	68	94	140	180	260	CE	202K	46	107
2400-2	60KC	6	1	NO	2400-2	20	1.9	3.6	6.6	14	17	35	57	75	99	130	170	280	394K	36	117
2400-2	60KC	10	1	NO	2400-2	15	2.0	3.6	6.4	13	16	33	53	70	88	110	140	230	735K	25	134
2400-3	90KC	3	1	NO	2400-3	20	1.9	3.7	7.0	15	19	42	67	89	CE	CE	CE	CE	104K	46	103
2400-3	90KC	4	1	NO	2400-3	20	1.7	3.0	5.4	11	15	31	47	64	91	120	180	CE	202K	46	107
2400-3	90KC	6	1	NO	2400-3	20	1.7	2.9	4.9	9.4	12	24	39	51	67	85	120	190	394K	36	117
2400-3	90KC	10	1	NO	2400-3	15	1.8	3.0	4.8	9.0	11	23	37	48	61	72	96	160	735K	25	134
2311	156KC	1	1	NO	2311	15	1.8	2.8	4.6	13	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	125
2311	156KC	2	1	NO	2311	15	1.7	2.6	4.2	11	14	CE	CE	CE	CE	CE	CE	CE	44K	18	125
2311	156KC	3	1	NO	2311	15	1.6	2.4	3.7	10	13	24	CE	CE	CE	CE	CE	CE	66K	18	125
2311	156KC	4	1	NO	2311	15	1.7	2.4	3.7	11	13	24	35	CE	CE	CE	CE	CE	99K	18	124
2400-2	60KC	3	2	NO	2400-2	20	2.0	4.0	7.8	17	21	46	73	110	CE	CE	CE	CE	102K	31	98
2400-2	60KC	4	2	NO	2400-2	20	1.8	3.2	5.8	12	16	33	53	78	110	140	CE	CE	190K	30	98
2400-2	60KC	6	2	NO	2400-2	20	1.8	3.1	5.5	11	13	26	44	58	71	86	140	230	356K	20	113
2400-2	60KC	10	2	NO	2400-2	15	1.9	2.9	5.2	8.6	11	23	34	44	55	66	110	160	630K	15	134
2400-3	90KC	3	2	NO	2400-3	20	1.7	3.0	5.6	12	15	31	49	70	CE	CE	CE	CE	102K	31	98
2400-3	90KC	4	2	NO	2400-3	20	1.6	2.5	4.3	8.4	11	23	36	53	70	89	CE	CE	190K	30	98
2400-3	90KC	6	2	NO	2400-3	20	1.6	2.5	4.1	7.6	9.2	18	30	39	49	58	92	160	356K	20	113
2400-3	90KC	10	2	NO	2400-3	15	1.8	2.4	4.0	6.4	7.5	17	24	31	38	45	69	110	630K	15	134
2311	156KC	2	2	NO	2311	15	1.6	2.8	4.5	11	14	CE	CE	CE	CE	CE	CE	CE	43K	18	110
2311	156KC	3	2	NO	2311	15	1.4	2.5	3.7	9.3	12	22	CE	CE	CE	CE	CE	CE	65K	18	110
2311	156KC	4	2	NO	2311	15	1.5	2.5	3.8	9.4	12	22	47	CE	CE	CE	CE	CE	98K	18	110
2400-2	60KC	3	2	YES	2400-2	20	1.8	3.4	6.4	14	17	37	59	83	CE	CE	CE	CE	102K	31	98
2400-2	60KC	4	2	YES	2400-2	20	1.7	2.8	4.9	9.7	13	27	43	63	82	110	CE	CE	190K	30	98
2400-2	60KC	6	2	YES	2400-2	20	1.7	2.7	4.5	8.5	11	22	35	51	63	80	110	180	356K	20	113
2400-2	60KC	10	2	YES	2400-2	15	1.8	2.9	4.6	8.5	11	22	34	44	55	66	93	160	630K	15	134
2400-3	90KC	3	2	YES	2400-3	20	1.6	2.6	4.7	9.3	12	25	40	56	CE	CE	CE	CE	102K	31	98
2400-3	90KC	4	2	YES	2400-3	20	1.5	2.3	3.7	6.9	8.9	19	29	43	56	71	CE	CE	190K	30	98
2400-3	90KC	6	2	YES	2400-3	20	1.6	2.2	3.5	6.2	7.4	15	24	34	43	54	73	130	356K	20	113
2400-3	90KC	10	2	YES	2400-3	15	1.7	2.4	3.6	6.3	7.4	15	24	31	38	45	63	110	630K	15	134

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	10	4.9	13	28	61	78	CE	CE	CE	CE	CE	CE	CE	41K	18	42
2400-2	60KC	4	1	NO	2400-2	10	3.9	9.9	21	44	55	140	240	CE	CE	CE	CE	CE	79K	18	41
2400-2	60KC	6	1	NO	2400-2	10	3.6	7.9	17	35	47	99	160	230	300	400	CE	CE	155K	14	44
2400-2	60KC	10	1	NO	2400-2	10	3.5	7.4	15	32	40	88	140	190	240	290	410	CE	284K	10	51
2400-3	90KC	3	1	NO	2400-3	10	3.7	9.0	19	42	53	CE	CE	CE	CE	CE	CE	CE	41K	18	42
2400-3	90KC	4	1	NO	2400-3	10	3.0	7.0	15	30	37	91	160	CE	CE	CE	CE	CE	79K	18	41
2400-3	90KC	6	1	NO	2400-3	10	2.9	5.7	12	24	32	67	110	160	200	270	CE	CE	155K	14	44
2400-3	90KC	10	1	NO	2400-3	10	2.8	5.5	11	22	28	61	90	130	170	200	280	CE	284K	10	51
2400-2	60KC	3	2	NO	2400-2	10	4.0	9.9	22	46	60	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	4	2	NO	2400-2	10	3.2	7.6	16	33	43	110	CE	CE	CE	CE	CE	CE	74K	12	41
2400-2	60KC	6	2	NO	2400-2	10	3.1	6.5	13	27	37	71	120	190	270	CE	CE	CE	133K	9	42
2400-2	60KC	10	2	NO	2400-2	10	2.9	6.0	11	23	29	55	95	130	160	190	370	CE	238K	6	49
2400-3	90KC	3	2	NO	2400-3	10	3.0	7.0	15	31	41	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	4	2	NO	2400-3	10	2.5	5.5	11	23	29	71	CE	CE	CE	CE	CE	CE	74K	12	41
2400-3	90KC	6	2	NO	2400-3	10	2.5	4.8	9.1	19	25	48	80	130	180	CE	CE	CE	133K	9	42
2400-3	90KC	10	2	NO	2400-3	10	2.4	4.6	7.5	16	20	37	65	85	110	130	250	CE	238K	6	49
2400-2	60KC	3	2	YES	2400-2	10	3.4	8.2	18	37	49	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-2	60KC	4	2	YES	2400-2	10	2.8	6.4	13	27	35	85	CE	CE	CE	CE	CE	CE	74K	12	41
2400-2	60KC	6	2	YES	2400-2	10	2.7	5.3	11	22	29	70	110	160	220	CE	CE	CE	133K	9	42
2400-2	60KC	10	2	YES	2400-2	10	2.9	5.4	11	22	29	55	92	130	160	190	300	CE	238K	6	49
2400-3	90KC	3	2	YES	2400-3	10	2.7	5.8	13	26	33	CE	CE	CE	CE	CE	CE	CE	40K	12	42
2400-3	90KC	4	2	YES	2400-3	10	2.3	4.7	8.9	19	24	57	CE	CE	CE	CE	CE	CE	74K	12	41
2400-3	90KC	6	2	YES	2400-3	10	2.2	4.0	7.3	16	20	47	72	110	150	CE	CE	CE	133K	9	42
2400-3	90KC	10	2	YES	2400-3	10	2.4	4.1	7.5	15	20	37	62	85	110	130	200	CE	238K	6	49

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.1	1.2	1.5	2.2	2.6	4.7	7.1	11	13	16	21	34	1053K	500	2344
2400-2	60KC	4	1	NO	2400-2	350	1.2	1.3	1.5	2.0	2.4	4.1	5.7	7.8	9.5	13	17	26	2027K	500	2344
2400-2	60KC	6	1	NO	2400-2	350	1.3	1.4	1.6	1.9	2.3	3.8	5.0	6.9	8.4	9.9	14	21	4208K	500	2495
2400-2	60KC	10	1	NO	2400-2	350	1.5	1.6	1.8	2.2	2.3	3.6	4.7	6.5	7.7	8.9	13	19	8177K	500	2329
2400-3	90KC	3	1	NO	2400-3	350	1.1	1.2	1.4	1.9	2.3	3.8	5.6	7.8	9.5	13	16	26	1053K	500	2344
2400-3	90KC	4	1	NO	2400-3	350	1.2	1.3	1.4	1.8	2.2	3.4	4.6	6.3	7.5	9.7	13	20	2027K	500	2344
2400-3	90KC	6	1	NO	2400-3	350	1.3	1.4	1.5	1.8	2.1	3.3	4.3	5.7	6.8	8.1	12	17	4208K	500	2495
2400-3	90KC	10	1	NO	2400-3	350	1.5	1.6	1.8	2.0	2.2	3.2	4.1	5.5	6.5	7.5	11	15	8177K	500	2329
2311	156KC	1	1	NO	2311	125	1.1	1.2	1.3	1.6	1.7	2.5	3.2	5.7	6.9	8.0	11	CE	225K	181	2706
2311	156KC	2	1	NO	2311	125	1.1	1.2	1.3	1.6	1.8	2.5	3.2	5.3	6.4	7.4	9.6	14	451K	181	2706
2311	156KC	3	1	NO	2311	125	1.1	1.2	1.3	1.6	1.7	2.4	3.1	5.0	6.0	7.0	9.0	13	677K	181	2706
2311	156KC	4	1	NO	2311	125	1.1	1.2	1.3	1.6	1.8	2.4	3.1	5.1	6.0	7.0	9.1	13	1016K	181	2703
2400-2	60KC	3	2	NO	2400-2	350	1.1	1.2	1.3	1.9	2.2	3.8	5.5	7.6	9.4	12	16	25	1053K	500	2344
2400-2	60KC	4	2	NO	2400-2	350	1.2	1.2	1.4	1.8	2.1	3.3	4.8	6.0	7.3	9.3	12	19	1777K	500	2344
2400-2	60KC	6	2	NO	2400-2	250	1.3	1.3	1.5	1.8	2.1	3.2	4.2	5.4	6.4	7.9	11	16	4053K	500	2495
2400-2	60KC	10	2	NO	2400-2	150	1.5	1.6	1.7	1.9	2.1	3.0	4.0	4.9	5.7	7.5	9.8	14	7698K	384	2562
2400-3	90KC	3	2	NO	2400-3	350	1.1	1.2	1.3	1.8	2.0	3.2	4.5	6.0	7.4	9.2	13	19	1053K	500	2344
2400-3	90KC	4	2	NO	2400-3	350	1.1	1.2	1.3	1.7	1.9	2.9	4.0	5.0	6.0	7.5	9.6	15	1777K	500	2344
2400-3	90KC	6	2	NO	2400-3	250	1.3	1.3	1.4	1.7	2.0	2.9	3.7	4.6	5.5	6.6	9.0	13	4053K	500	2495
2400-3	90KC	10	2	NO	2400-3	150	1.5	1.5	1.7	1.9	2.0	2.8	3.6	4.3	5.0	6.5	8.3	12	7698K	384	2562
2311	156KC	2	2	NO	2311	125	1.1	1.2	1.3	1.6	1.7	2.4	3.8	4.7	5.6	6.5	8.4	12	451K	181	2624
2311	156KC	3	2	NO	2311	125	1.1	1.1	1.2	1.4	1.5	2.0	3.2	3.9	4.6	5.3	6.8	9.6	677K	181	2624
2311	156KC	4	2	NO	2311	125	1.1	1.2	1.3	1.5	1.6	2.1	3.2	4.0	4.7	5.4	6.8	9.7	1016K	181	2621
2400-2	60KC	3	2	YES	2400-2	350	1.1	1.2	1.3	1.8	2.0	3.3	4.7	6.3	7.8	9.7	13	20	1053K	500	2344
2400-2	60KC	4	2	YES	2400-2	350	1.2	1.2	1.3	1.7	1.9	2.9	4.1	5.1	6.2	7.7	9.9	16	1777K	500	2344
2400-2	60KC	6	2	YES	2400-2	250	1.3	1.3	1.5	1.7	1.9	2.8	3.6	4.7	5.5	6.5	8.9	13	4053K	500	2495
2400-2	60KC	10	2	YES	2400-2	150	1.5	1.6	1.7	1.9	2.0	2.7	3.5	4.6	5.4	6.1	8.4	12	7698K	384	2562
2400-3	90KC	3	2	YES	2400-3	350	1.1	1.2	1.3	1.7	1.8	2.8	3.9	5.1	6.2	7.6	10	16	1053K	500	2344
2400-3	90KC	4	2	YES	2400-3	350	1.1	1.2	1.3	1.6	1.8	2.6	3.5	4.3	5.2	6.4	8.1	13	1777K	500	2344
2400-3	90KC	6	2	YES	2400-3	250	1.3	1.3	1.4	1.6	1.8	2.6	3.2	4.2	4.9	5.6	7.6	11	4053K	500	2495
2400-3	90KC	10	2	YES	2400-3	150	1.5	1.5	1.7	1.9	2.0	2.5	3.3	4.3	4.9	5.6	7.5	11	7698K	384	2562

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	85	1.3	1.9	3.2	6.6	8.0	19	29	40	54	64	92	CE	263K	125	782
2400-2	60KC	4	1	NO	2400-2	85	1.3	1.8	2.8	5.0	6.1	14	20	30	37	45	64	110	526K	125	782
2400-2	60KC	6	1	NO	2400-2	85	1.4	1.7	2.6	4.4	5.3	11	17	23	31	37	50	89	1053K	125	839
2400-2	60KC	10	1	NO	2400-2	85	1.7	2.0	2.5	4.1	4.8	9.4	16	20	28	33	43	76	2063K	125	791
2400-3	90KC	3	1	NO	2400-3	85	1.2	1.7	2.5	4.9	5.8	13	20	28	37	44	63	CE	263K	125	782
2400-3	90KC	4	1	NO	2400-3	85	1.3	1.6	2.3	3.8	4.5	9.8	15	21	26	31	44	74	526K	125	782
2400-3	90KC	6	1	NO	2400-3	85	1.4	1.6	2.2	3.5	4.0	7.7	13	17	22	26	35	62	1053K	125	839
2400-3	90KC	10	1	NO	2400-3	85	1.6	1.8	2.2	3.3	3.8	6.9	11	15	20	23	31	53	2063K	125	791
2311	156KC	1	1	NO	2311	30	1.2	1.4	1.8	2.7	3.1	8.4	CE	CE	CE	CE	CE	CE	56K	45	916
2311	156KC	2	1	NO	2311	30	1.2	1.4	1.8	2.7	3.1	7.5	11	16	CE	CE	CE	CE	112K	45	916
2311	156KC	3	1	NO	2311	30	1.2	1.3	1.6	2.3	2.6	6.5	9.2	14	18	22	CE	CE	169K	45	916
2311	156KC	4	1	NO	2311	30	1.2	1.4	1.7	2.3	2.6	6.6	9.3	14	18	22	29	CE	253K	45	915
2400-2	60KC	3	2	NO	2400-2	85	1.2	1.7	2.6	5.0	6.1	14	22	29	39	46	66	CE	263K	125	782
2400-2	60KC	4	2	NO	2400-2	85	1.2	1.6	2.3	3.9	5.0	11	15	22	27	34	46	78	517K	125	782
2400-2	60KC	6	2	NO	2400-2	50	1.4	1.6	2.3	3.7	4.3	8.4	14	18	22	28	38	58	1026K	125	839
2400-2	60KC	10	2	NO	2400-2	35	1.6	1.8	2.3	3.6	4.1	7.8	12	15	19	22	29	51	1958K	96	870
2400-3	90KC	3	2	NO	2400-3	85	1.1	1.5	2.1	3.8	4.5	9.5	15	20	27	32	45	CE	263K	125	782
2400-3	90KC	4	2	NO	2400-3	85	1.2	1.5	2.0	3.0	3.8	7.3	11	15	19	24	32	53	517K	125	782
2400-3	90KC	6	2	NO	2400-3	50	1.3	1.5	1.9	2.9	3.3	6.1	9.4	13	15	20	27	40	1026K	125	839
2400-3	90KC	10	2	NO	2400-3	35	1.5	1.7	2.0	2.9	3.3	5.9	8.4	11	13	16	20	35	1958K	96	870
2311	156KC	2	2	NO	2311	30	1.2	1.4	1.7	3.1	3.6	6.1	8.7	13	CE	CE	CE	CE	112K	45	889
2311	156KC	3	2	NO	2311	30	1.1	1.2	1.4	2.5	2.8	4.5	6.2	9.2	13	16	CE	CE	169K	45	889
2311	156KC	4	2	NO	2311	30	1.1	1.3	1.4	2.5	2.9	4.6	6.3	9.3	13	16	21	CE	253K	45	888
2400-2	60KC	3	2	YES	2400-2	85	1.2	1.6	2.3	4.2	5.1	11	18	23	31	37	53	CE	263K	125	782
2400-2	60KC	4	2	YES	2400-2	85	1.2	1.5	2.1	3.4	4.3	8.3	13	18	22	27	37	62	517K	125	782
2400-2	60KC	6	2	YES	2400-2	50	1.4	1.5	2.0	3.1	3.6	6.7	11	14	19	22	29	53	1026K	125	839
2400-2	60KC	10	2	YES	2400-2	35	1.6	1.8	2.1	3.1	3.5	6.3	9.7	13	17	21	27	46	1958K	96	870
2400-3	90KC	3	2	YES	2400-3	85	1.1	1.4	1.9	3.2	3.8	7.7	12	16	21	25	36	CE	263K	125	782
2400-3	90KC	4	2	YES	2400-3	85	1.2	1.4	1.8	2.6	3.2	6.0	8.5	12	15	19	26	42	517K	125	782
2400-3	90KC	6	2	YES	2400-3	50	1.3	1.4	1.8	2.5	2.9	4.9	7.5	9.6	13	16	20	36	1026K	125	839
2400-3	90KC	10	2	YES	2400-3	35	1.5	1.7	1.9	2.6	2.8	4.7	7.1	8.9	12	15	19	32	1958K	96	870

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.9	4.0	7.8	18	23	49	78	120	CE	CE	CE	CE	105K	50	333
2400-2	60KC	4	1	NO	2400-2	35	1.8	3.1	5.8	13	17	36	59	78	110	140	210	CE	210K	50	333
2400-2	60KC	6	1	NO	2400-2	35	1.7	2.8	5.1	11	15	30	45	66	90	120	150	230	421K	50	332
2400-2	60KC	10	1	NO	2400-2	35	2.0	2.7	4.6	9.1	13	27	40	58	76	94	130	190	826K	50	336
2400-3	90KC	3	1	NO	2400-3	35	1.7	3.1	5.7	13	16	34	53	76	CE	CE	CE	CE	105K	50	333
2400-3	90KC	4	1	NO	2400-3	35	1.6	2.5	4.3	8.8	12	25	40	53	75	95	140	CE	210K	50	333
2400-3	90KC	6	1	NO	2400-3	35	1.6	2.3	3.9	7.4	10	21	31	45	62	76	100	160	421K	50	332
2400-3	90KC	10	1	NO	2400-3	35	1.8	2.3	3.7	6.7	9.1	19	28	40	53	65	86	130	826K	50	338
2311	156KC	1	1	NO	2311	15	1.4	2.0	2.9	8.1	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	390
2311	156KC	2	1	NO	2311	15	1.4	2.0	3.0	7.3	8.8	CE	CE	CE	CE	CE	CE	CE	45K	18	390
2311	156KC	3	1	NO	2311	15	1.3	1.7	2.4	6.2	7.5	18	CE	CE	CE	CE	CE	CE	67K	18	390
2311	156KC	4	1	NO	2311	15	1.4	1.8	2.5	6.3	7.5	18	26	34	CE	CE	CE	CE	101K	18	390
2400-2	60KC	3	2	NO	2400-2	35	1.7	3.2	6.0	14	17	38	58	81	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	NO	2400-2	35	1.6	2.6	4.6	10	13	26	43	57	79	110	150	CE	209K	50	297
2400-2	60KC	6	2	NO	2400-2	35	1.6	2.5	4.2	8.2	11	21	34	47	59	71	110	180	408K	50	306
2400-2	60KC	10	2	NO	2400-2	25	1.8	2.4	4.0	7.6	9.7	18	26	41	51	61	80	120	779K	38	354
2400-3	90KC	3	2	NO	2400-3	35	1.5	2.5	4.4	9.3	12	26	40	55	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	NO	2400-3	35	1.5	2.1	3.5	7.1	8.6	18	29	39	54	68	100	CE	209K	50	297
2400-3	90KC	6	2	NO	2400-3	35	1.5	2.1	3.3	5.9	7.8	15	24	33	40	48	72	120	408K	50	306
2400-3	90KC	10	2	NO	2400-3	25	1.7	2.1	3.2	5.6	7.1	13	18	29	35	42	55	81	779K	38	354
2311	156KC	2	2	NO	2311	15	1.3	1.8	3.5	5.9	7.2	CE	CE	CE	CE	CE	CE	CE	45K	18	376
2311	156KC	3	2	NO	2311	15	1.2	1.4	2.7	4.3	5.1	13	CE	CE	CE	CE	CE	CE	67K	18	376
2311	156KC	4	2	NO	2311	15	1.2	1.5	2.8	4.4	5.2	13	19	32	CE	CE	CE	CE	101K	18	376
2400-2	60KC	3	2	YES	2400-2	35	1.6	2.8	5.0	11	14	31	47	65	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	YES	2400-2	35	1.5	2.3	4.0	8.3	10	21	35	46	64	81	120	CE	209K	50	297
2400-2	60KC	6	2	YES	2400-2	35	1.5	2.2	3.5	6.6	8.7	18	27	39	53	66	87	140	408K	50	306
2400-2	60KC	10	2	YES	2400-2	25	1.8	2.2	3.4	6.1	7.9	17	24	39	46	58	76	120	779K	38	354
2400-3	90KC	3	2	YES	2400-3	35	1.4	2.2	3.7	7.6	9.3	21	32	44	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	YES	2400-3	35	1.4	1.9	3.0	5.9	7.1	15	24	31	43	55	80	CE	209K	50	297
2400-3	90KC	6	2	YES	2400-3	35	1.4	1.9	2.8	4.8	6.3	13	19	27	36	45	59	92	408K	50	306
2400-3	90KC	10	2	YES	2400-3	25	1.7	2.0	2.8	4.6	5.8	12	17	27	32	39	52	76	779K	38	354

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	4.0	10	22	49	65	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-2	60KC	4	1	NO	2400-2	20	3.1	7.8	17	36	45	110	190	CE	CE	CE	CE	CE	84K	20	137
2400-2	60KC	6	1	NO	2400-2	20	2.8	6.8	14	30	37	89	140	190	240	320	CE	CE	168K	20	124
2400-2	60KC	10	1	NO	2400-2	20	2.7	5.5	12	26	33	76	120	160	200	240	320	530	328K	20	131
2400-3	90KC	3	1	NO	2400-3	20	3.0	7.1	16	34	44	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-3	90KC	4	1	NO	2400-3	20	2.5	5.7	12	25	31	74	130	CE	CE	CE	CE	CE	84K	20	137
2400-3	90KC	6	1	NO	2400-3	20	2.3	5.0	9.8	21	26	61	92	130	170	210	CE	CE	168K	20	124
2400-3	90KC	10	1	NO	2400-3	20	2.3	4.2	8.4	19	23	52	79	110	130	160	220	360	328K	20	131
2311	156KC	1	1	NO	2311	6	2.0	5.6	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	161
2311	156KC	2	1	NO	2311	6	2.0	5.0	8.9	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	161
2311	156KC	3	1	NO	2311	6	1.7	4.3	7.5	18	22	CE	CE	CE	CE	CE	CE	CE	26K	7	161
2311	156KC	4	1	NO	2311	6	1.8	4.4	7.6	18	22	CE	CE	CE	CE	CE	CE	CE	39K	7	160
2400-2	60KC	3	2	NO	2400-2	20	3.2	7.8	17	38	47	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	NO	2400-2	20	2.6	6.0	13	26	35	80	140	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	NO	2400-2	20	2.4	5.3	11	22	28	58	99	140	180	240	CE	CE	162K	20	114
2400-2	60KC	10	2	NO	2400-2	15	2.4	4.6	9.6	18	22	50	74	98	130	150	260	430	310K	15	135
2400-3	90KC	3	2	NO	2400-3	20	2.5	5.6	12	26	32	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	NO	2400-3	20	2.1	4.4	8.5	18	24	54	94	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	NO	2400-3	20	2.1	4.0	7.7	15	20	40	67	95	130	160	CE	CE	162K	20	114
2400-3	90KC	10	2	NO	2400-3	15	2.1	3.6	7.0	13	15	35	51	67	83	99	180	290	310K	15	135
2311	156KC	2	2	NO	2311	6	1.8	4.2	7.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	155
2311	156KC	3	2	NO	2311	6	1.4	3.1	5.1	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	155
2311	156KC	4	2	NO	2311	6	1.5	3.2	5.2	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	155
2400-2	60KC	3	2	YES	2400-2	20	2.8	6.5	14	31	38	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	YES	2400-2	20	2.3	5.0	9.9	21	29	65	120	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	YES	2400-2	20	2.2	4.5	8.7	18	22	53	82	120	150	190	CE	CE	162K	20	114
2400-2	60KC	10	2	YES	2400-2	15	2.2	4.4	8.1	17	21	46	72	95	120	150	200	340	310K	15	135
2400-3	90KC	3	2	YES	2400-3	20	2.2	4.7	9.3	21	26	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	YES	2400-3	20	2.0	3.8	7.0	15	20	44	75	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	YES	2400-3	20	1.9	3.5	6.2	13	16	36	55	75	96	130	CE	CE	162K	20	114
2400-3	90KC	10	2	YES	2400-3	15	2.0	3.4	5.9	12	14	32	49	64	80	95	140	230	310K	15	135

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.1	1.2	1.4	1.9	2.2	4.2	6.5	8.3	12	14	20	29	1053K	500	5558
2400-2	60KC	4	1	NO	2400-2	350	1.2	1.3	1.5	1.8	2.0	3.3	5.0	7.0	8.5	10	15	22	2106K	500	5556
2400-2	60KC	6	1	NO	2400-2	350	1.3	1.4	1.6	1.9	2.1	3.0	4.4	6.3	7.5	8.8	13	19	4213K	500	5556
2400-2	60KC	10	1	NO	2400-2	350	1.5	1.6	1.8	2.2	2.3	3.2	4.1	5.0	6.8	7.8	12	17	8427K	500	5543
2400-3	90KC	3	1	NO	2400-3	350	1.1	1.2	1.3	1.7	1.9	3.5	5.2	6.5	8.7	11	15	22	1053K	500	5558
2400-3	90KC	4	1	NO	2400-3	350	1.2	1.3	1.4	1.7	1.8	2.9	4.2	5.7	6.9	8.0	12	17	2106K	500	5556
2400-3	90KC	6	1	NO	2400-3	350	1.3	1.4	1.5	1.8	2.0	2.7	3.8	5.3	6.3	7.2	11	15	4213K	500	5556
2400-3	90KC	10	1	NO	2400-3	350	1.5	1.6	1.8	2.1	2.2	2.9	3.7	4.4	5.9	6.7	9.6	14	8427K	500	5543
2311	156KC	1	1	NO	2311	125	1.1	1.2	1.3	1.6	1.8	2.5	3.3	4.0	4.8	5.5	11	CE	227K	181	5966
2311	156KC	2	1	NO	2311	125	1.1	1.2	1.3	1.6	1.8	2.5	3.3	4.0	4.8	5.5	11	16	455K	181	5966
2311	156KC	3	1	NO	2311	125	1.1	1.2	1.3	1.6	1.7	2.4	3.1	3.8	4.5	5.2	9.6	15	683K	181	5966
2311	156KC	4	1	NO	2311	125	1.1	1.2	1.3	1.6	1.8	2.5	3.1	3.8	4.5	5.2	9.7	15	1025K	181	5964
2400-2	60KC	3	2	NO	2400-2	350	1.1	1.2	1.3	1.6	1.9	3.4	5.0	6.3	8.4	9.9	15	21	1053K	500	5515
2400-2	60KC	4	2	NO	2400-2	350	1.2	1.2	1.4	1.6	1.8	2.8	4.0	5.4	6.5	7.6	11	16	2106K	500	5530
2400-2	60KC	6	2	NO	2400-2	350	1.3	1.3	1.5	1.7	1.8	2.6	3.7	4.6	6.0	7.0	9.3	14	4213K	500	5556
2400-2	60KC	10	2	NO	2400-2	300	1.5	1.6	1.7	1.9	2.1	2.7	3.6	4.3	5.6	6.4	8.1	14	8268K	500	5301
2400-3	90KC	3	2	NO	2400-3	350	1.1	1.2	1.3	1.5	1.8	2.9	4.1	5.1	6.7	7.8	11	17	1053K	500	5515
2400-3	90KC	4	2	NO	2400-3	350	1.1	1.2	1.3	1.5	1.7	2.5	3.5	4.6	5.5	6.3	8.8	13	2106K	500	5530
2400-3	90KC	6	2	NO	2400-3	350	1.3	1.3	1.4	1.7	1.8	2.4	3.3	4.1	5.2	6.0	7.9	12	4213K	500	5556
2400-3	90KC	10	2	NO	2400-3	300	1.5	1.5	1.7	1.9	2.0	2.6	3.3	4.0	5.0	5.7	7.1	12	8268K	500	5301
2311	156KC	2	2	NO	2311	125	1.1	1.2	1.3	1.6	1.7	2.5	3.2	3.9	4.7	5.4	9.0	14	455K	181	5885
2311	156KC	3	2	NO	2311	125	1.1	1.1	1.2	1.4	1.5	2.1	2.6	3.1	3.6	4.2	7.4	12	683K	181	5883
2311	156KC	4	2	NO	2311	125	1.1	1.2	1.3	1.5	1.6	2.1	2.6	3.2	3.7	4.2	7.5	12	1025K	181	5882
2400-2	60KC	3	2	YES	2400-2	350	1.1	1.2	1.3	1.6	1.7	2.9	4.2	5.3	7.0	8.2	12	18	1053K	500	5515
2400-2	60KC	4	2	YES	2400-2	350	1.2	1.2	1.3	1.6	1.7	2.5	3.5	4.6	5.5	6.4	9.0	14	2106K	500	5530
2400-2	60KC	6	2	YES	2400-2	350	1.3	1.3	1.5	1.7	1.8	2.3	3.2	4.3	5.0	5.8	8.1	12	4213K	500	5556
2400-2	60KC	10	2	YES	2400-2	300	1.5	1.6	1.7	1.9	2.0	2.6	3.1	3.7	4.8	5.4	7.5	11	8268K	500	5301
2400-3	90KC	3	2	YES	2400-3	350	1.1	1.2	1.3	1.5	1.7	2.6	3.6	4.4	5.7	6.6	9.2	14	1053K	500	5515
2400-3	90KC	4	2	YES	2400-3	350	1.1	1.2	1.3	1.5	1.6	2.3	3.1	4.1	4.8	5.5	7.5	11	2106K	500	5530
2400-3	90KC	6	2	YES	2400-3	350	1.3	1.3	1.4	1.6	1.7	2.3	3.0	3.9	4.6	5.2	7.1	9.9	4213K	500	5556
2400-3	90KC	10	2	YES	2400-3	300	1.5	1.5	1.7	1.9	2.0	2.5	3.0	3.6	4.5	5.1	6.9	9.6	8268K	500	5301

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	90	1.3	1.6	2.8	5.2	6.4	15	25	33	45	53	78	CE	263K	125	1874
2400-2	60KC	4	1	NO	2400-2	90	1.3	1.6	2.1	4.4	5.2	11	18	24	33	39	58	110	526K	125	1874
2400-2	60KC	6	1	NO	2400-2	90	1.4	1.7	2.3	3.9	4.5	9.2	16	20	28	33	44	75	1053K	125	1872
2400-2	60KC	10	1	NO	2400-2	90	1.7	2.0	2.5	3.5	4.0	8.0	14	17	22	29	38	63	2083K	125	1869
2400-3	90KC	3	1	NO	2400-3	90	1.2	1.4	2.3	3.9	4.8	11	18	23	31	37	54	CE	263K	125	1874
2400-3	90KC	4	1	NO	2400-3	90	1.3	1.5	1.8	3.4	4.0	7.7	13	17	23	28	40	71	526K	125	1874
2400-3	90KC	6	1	NO	2400-3	90	1.4	1.6	1.9	3.1	3.5	6.7	11	14	20	23	31	52	1053K	125	1872
2400-3	90KC	10	1	NO	2400-3	90	1.6	1.8	2.2	2.9	3.3	6.0	9.6	13	16	21	27	44	2083K	125	1869
2311	156KC	1	1	NO	2311	30	1.2	1.4	1.8	2.7	3.1	5.2	CE	CE	CE	CE	CE	CE	56K	45	2019
2311	156KC	2	1	NO	2311	30	1.2	1.4	1.8	2.7	3.1	5.2	13	17	CE	CE	CE	CE	113K	45	2019
2311	156KC	3	1	NO	2311	30	1.2	1.3	1.7	2.3	2.6	4.2	12	15	18	22	CE	CE	170K	45	2019
2311	156KC	4	1	NO	2311	30	1.2	1.4	1.7	2.3	2.6	4.2	12	15	18	22	29	CE	255K	45	2018
2400-2	60KC	3	2	NO	2400-2	90	1.2	1.4	2.3	4.0	5.4	11	18	24	32	38	56	CE	263K	125	1764
2400-2	60KC	4	2	NO	2400-2	90	1.2	1.5	1.9	3.5	4.0	7.9	13	18	24	28	42	74	526K	125	1764
2400-2	60KC	6	2	NO	2400-2	90	1.4	1.6	1.9	3.2	3.7	7.1	11	15	21	25	33	49	1053K	125	1852
2400-2	60KC	10	2	NO	2400-2	90	1.6	1.8	2.1	3.0	3.4	6.4	8.9	14	17	21	27	40	2015K	125	1795
2400-3	90KC	3	2	NO	2400-3	90	1.1	1.3	1.9	3.1	4.0	7.7	13	17	22	27	38	CE	263K	125	1764
2400-3	90KC	4	2	NO	2400-3	90	1.2	1.3	1.6	2.7	3.1	5.8	9.2	13	17	20	29	51	526K	125	1764
2400-3	90KC	6	2	NO	2400-3	90	1.3	1.4	1.7	2.6	2.9	5.3	7.8	11	15	18	23	34	1053K	125	1852
2400-3	90KC	10	2	NO	2400-3	90	1.5	1.7	1.9	2.5	2.8	4.9	6.5	9.6	13	15	19	28	2015K	125	1795
2311	156KC	2	2	NO	2311	30	1.2	1.4	1.7	2.4	2.7	4.5	11	14	CE	CE	CE	CE	113K	45	1992
2311	156KC	3	2	NO	2311	30	1.1	1.2	1.4	1.7	1.9	2.8	8.2	11	13	16	CE	CE	170K	45	1992
2311	156KC	4	2	NO	2311	30	1.1	1.3	1.4	1.8	2.0	2.9	8.2	11	13	16	21	CE	255K	45	1991
2400-2	60KC	3	2	YES	2400-2	90	1.2	1.3	2.1	3.4	4.5	8.9	15	19	26	31	45	CE	263K	125	1764
2400-2	60KC	4	2	YES	2400-2	90	1.2	1.4	1.7	3.0	3.4	6.5	11	14	19	23	33	59	526K	125	1764
2400-2	60KC	6	2	YES	2400-2	90	1.3	1.5	1.8	2.7	3.1	5.7	9.1	12	16	19	25	43	1053K	125	1852
2400-2	60KC	10	2	YES	2400-2	90	1.6	1.8	2.0	2.6	2.9	5.1	8.1	11	13	17	22	37	2015K	125	1795
2400-3	90KC	3	2	YES	2400-3	90	1.1	1.3	1.7	2.7	3.4	6.3	9.9	14	18	21	30	CE	263K	125	1764
2400-3	90KC	4	2	YES	2400-3	90	1.2	1.3	1.5	2.4	2.7	4.8	7.5	9.7	14	16	23	40	526K	125	1764
2400-3	90KC	6	2	YES	2400-3	90	1.3	1.4	1.6	2.3	2.5	4.3	6.5	8.3	12	14	18	29	1053K	125	1852
2400-3	90KC	10	2	YES	2400-3	90	1.5	1.7	1.9	2.2	2.4	4.0	6.0	7.4	9.3	12	16	26	2015K	125	1795

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.5	3.2	6.1	15	18	44	72	95	CE	CE	CE	CE	105K	50	808
2400-2	60KC	4	1	NO	2400-2	35	1.6	2.7	5.1	11	14	32	48	70	99	130	190	CE	200K	50	817
2400-2	60KC	6	1	NO	2400-2	35	1.7	2.5	4.4	8.9	11	24	40	59	75	93	140	210	421K	50	807
2400-2	60KC	10	1	NO	2400-2	35	2.0	2.7	3.9	7.7	9.3	21	35	46	63	75	110	180	842K	50	806
2400-3	90KC	3	1	NO	2400-3	35	1.4	2.5	4.5	11	13	30	49	65	CE	CE	CE	CE	105K	50	808
2400-3	90KC	4	1	NO	2400-3	35	1.5	2.2	3.8	7.5	9.4	22	33	48	68	87	130	CE	200K	50	817
2400-3	90KC	6	1	NO	2400-3	35	1.6	2.1	3.4	6.5	7.8	17	28	41	52	63	92	150	421K	50	807
2400-3	90KC	10	1	NO	2400-3	35	1.8	2.3	3.2	5.8	6.8	15	24	32	43	52	76	120	842K	50	806
2311	156KC	1	1	NO	2311	15	1.4	2.0	2.9	4.9	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	865
2311	156KC	2	1	NO	2311	15	1.4	2.0	3.0	4.9	5.9	CE	CE	CE	CE	CE	CE	CE	45K	18	865
2311	156KC	3	1	NO	2311	15	1.3	1.7	2.4	3.8	4.5	17	CE	CE	CE	CE	CE	CE	68K	18	865
2311	156KC	4	1	NO	2311	15	1.4	1.8	2.5	3.9	4.6	18	26	34	CE	CE	CE	CE	102K	18	865
2400-2	60KC	3	2	NO	2400-2	35	1.4	2.6	4.7	11	14	32	52	68	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	NO	2400-2	35	1.5	2.3	4.0	7.8	11	24	35	51	77	96	140	CE	210K	50	782
2400-2	60KC	6	2	NO	2400-2	35	1.6	2.2	3.6	7.0	8.5	19	30	40	50	69	92	150	421K	50	759
2400-2	60KC	10	2	NO	2400-2	35	1.8	2.3	3.4	6.3	7.5	16	26	33	41	49	66	120	835K	50	770
2400-3	90KC	3	2	NO	2400-3	35	1.3	2.1	3.5	7.6	9.2	22	35	46	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	NO	2400-3	35	1.3	1.9	3.1	5.7	7.7	16	24	35	52	65	94	CE	210K	50	782
2400-3	90KC	6	2	NO	2400-3	35	1.4	1.9	2.9	5.1	6.2	14	21	28	34	47	62	110	421K	50	759
2400-3	90KC	10	2	NO	2400-3	35	1.7	2.0	2.7	4.7	5.5	12	18	23	28	34	45	79	835K	50	770
2311	156KC	2	2	NO	2311	15	1.3	1.8	2.6	4.2	5.1	CE	CE	CE	CE	CE	CE	CE	45K	18	851
2311	156KC	3	2	NO	2311	15	1.2	1.4	1.8	2.6	3.0	13	CE	CE	CE	CE	CE	CE	68K	18	851
2311	156KC	4	2	NO	2311	15	1.2	1.5	1.9	2.7	3.0	13	18	24	CE	CE	CE	CE	102K	18	850
2400-2	60KC	3	2	YES	2400-2	35	1.3	2.3	4.0	8.8	11	26	42	55	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	YES	2400-2	35	1.4	2.1	3.4	6.5	8.9	19	28	41	62	77	120	CE	210K	50	782
2400-2	60KC	6	2	YES	2400-2	35	1.5	1.9	3.1	5.7	6.8	15	24	34	44	54	77	120	421K	50	759
2400-2	60KC	10	2	YES	2400-2	35	1.8	2.2	2.9	5.1	6.0	13	21	27	37	44	64	99	835K	50	770
2400-3	90KC	3	2	YES	2400-3	35	1.2	1.9	3.0	6.3	7.6	18	28	37	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	YES	2400-3	35	1.3	1.8	2.7	4.7	6.3	13	19	28	42	52	75	CE	210K	50	782
2400-3	90KC	6	2	YES	2400-3	35	1.4	1.7	2.5	4.2	5.0	11	16	24	30	37	53	80	421K	50	759
2400-3	90KC	10	2	YES	2400-3	35	1.7	1.9	2.4	3.9	4.5	8.8	15	19	25	30	44	67	835K	50	770

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	3.1	8.3	18	43	54	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-2	60KC	4	1	NO	2400-2	20	2.7	6.0	13	32	39	96	180	CE	CE	CE	CE	CE	81K	20	326
2400-2	60KC	6	1	NO	2400-2	20	2.4	5.1	11	24	33	74	120	170	230	290	CE	CE	162K	20	326
2400-2	60KC	10	1	NO	2400-2	20	2.7	4.5	9.1	20	29	62	92	140	180	220	290	480	337K	20	320
2400-3	90KC	3	1	NO	2400-3	20	2.5	6.0	13	30	37	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-3	90KC	4	1	NO	2400-3	20	2.2	4.4	9.1	22	27	66	120	CE	CE	CE	CE	CE	81K	20	326
2400-3	90KC	6	1	NO	2400-3	20	2.0	3.9	7.6	17	23	51	77	120	160	200	CE	CE	162K	20	326
2400-3	90KC	10	1	NO	2400-3	20	2.3	3.5	6.7	14	20	42	63	91	120	150	200	330	337K	20	320
2311	156KC	1	1	NO	2311	6	2.0	3.5	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	356
2311	156KC	2	1	NO	2311	6	2.0	3.5	5.9	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	356
2311	156KC	3	1	NO	2311	6	1.7	2.8	4.5	18	22	CE	CE	CE	CE	CE	CE	CE	26K	7	356
2311	156KC	4	1	NO	2311	6	1.8	2.8	4.6	18	22	CE	CE	CE	CE	CE	CE	CE	39K	7	356
2400-2	60KC	3	2	NO	2400-2	20	2.6	6.3	13	31	39	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	NO	2400-2	20	2.3	4.7	11	23	29	76	130	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	NO	2400-2	20	2.1	4.1	8.5	20	25	50	86	130	170	210	CE	CE	168K	20	301
2400-2	60KC	10	2	NO	2400-2	20	2.3	3.8	7.3	16	21	41	60	97	120	150	220	360	333K	20	302
2400-3	90KC	3	2	NO	2400-3	20	2.1	4.6	9.1	22	27	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	NO	2400-3	20	1.9	3.6	7.6	16	20	52	86	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	NO	2400-3	20	1.8	3.2	6.1	14	17	34	58	83	120	140	CE	CE	168K	20	301
2400-3	90KC	10	2	NO	2400-3	20	2.0	3.0	5.4	11	15	28	41	65	81	97	150	240	333K	20	302
2311	156KC	2	2	NO	2311	6	1.8	3.1	5.1	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	351
2311	156KC	3	2	NO	2311	6	1.4	2.0	3.0	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	351
2311	156KC	4	2	NO	2311	6	1.5	2.1	3.0	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	350
2400-2	60KC	3	2	YES	2400-2	20	2.3	5.3	11	26	32	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	YES	2400-2	20	2.0	4.0	8.8	19	23	61	110	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	YES	2400-2	20	1.9	3.5	6.8	16	20	43	72	97	130	170	CE	CE	168K	20	301
2400-2	60KC	10	2	YES	2400-2	20	2.2	3.2	5.9	13	17	37	54	79	110	130	170	280	333K	20	302
2400-3	90KC	3	2	YES	2400-3	20	1.9	3.9	7.5	18	22	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	YES	2400-3	20	1.7	3.1	6.3	13	16	42	69	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	YES	2400-3	20	1.7	2.8	5.0	11	14	30	49	66	88	110	CE	CE	168K	20	301
2400-3	90KC	10	2	YES	2400-3	20	1.9	2.6	4.5	8.7	12	25	37	53	70	84	120	190	333K	20	302

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.1	1.1	1.3	1.9	2.3	4.1	6.2	8.8	11	14	19	30	1053K	500	2344
2400-2	60KC	4	1	NO	2400-2	350	1.1	1.2	1.3	1.8	2.1	3.5	4.8	6.7	8.1	11	14	23	2027K	500	2344
2400-2	60KC	6	1	NO	2400-2	250	1.2	1.3	1.4	1.7	1.9	3.2	4.2	5.9	7.0	8.2	12	18	4213K	500	2495
2400-2	60KC	10	1	NO	2400-2	150	1.4	1.5	1.7	1.9	2.1	2.8	4.0	5.5	6.5	7.5	11	16	8206K	500	2590
2400-3	90KC	3	1	NO	2400-3	350	1.1	1.1	1.2	1.7	1.9	3.2	4.6	6.4	7.7	9.9	13	21	1053K	500	2344
2400-3	90KC	4	1	NO	2400-3	350	1.1	1.2	1.2	1.6	1.8	2.8	3.7	4.9	5.9	7.6	9.8	16	2027K	500	2344
2400-3	90KC	6	1	NO	2400-3	250	1.2	1.3	1.4	1.5	1.7	2.6	3.3	4.4	5.2	6.0	8.5	13	4213K	500	2495
2400-3	90KC	10	1	NO	2400-3	150	1.4	1.5	1.6	1.8	1.9	2.4	3.2	4.3	4.9	5.6	7.9	12	8206K	500	2590
2311	156KC	1	1	NO	2311	125	1.0	1.1	1.2	1.4	1.5	2.0	2.5	4.6	5.5	6.4	8.1	CE	225K	181	2706
2311	156KC	2	1	NO	2311	125	1.0	1.1	1.2	1.4	1.5	2.0	2.5	4.2	5.0	5.8	7.4	11	451K	181	2706
2311	156KC	3	1	NO	2311	125	1.0	1.1	1.1	1.3	1.4	1.7	2.1	3.7	4.4	5.0	6.4	9.0	677K	181	2706
2301	1200KC	1	1	NO	2301	200	1.0	1.1	1.1	1.3	1.4	2.0	2.6	3.0	CE	CE	CE	CE	109K	1000	1588
2301	1200KC	2	1	NO	2301	200	1.0	1.1	1.1	1.4	1.4	2.0	2.7	3.1	3.9	4.4	5.2	CE	218K	1000	1588
2301	1200KC	3	1	NO	2301	200	1.0	1.1	1.1	1.4	1.5	2.1	2.8	3.1	4.0	4.4	5.3	7.8	327K	1000	1588
2400-2	60KC	3	2	NO	2400-2	350	1.0	1.1	1.2	1.8	2.0	3.4	4.8	6.6	8.2	11	14	22	1053K	500	2344
2400-2	60KC	4	2	NO	2400-2	350	1.1	1.2	1.3	1.6	1.9	2.8	4.1	5.1	6.2	7.9	11	17	1777K	500	2344
2400-2	60KC	6	2	NO	2400-2	250	1.2	1.3	1.3	1.6	1.8	2.7	3.5	4.6	5.4	6.6	9.2	14	4053K	500	2495
2400-2	60KC	10	2	NO	2400-2	150	1.4	1.5	1.5	1.7	1.8	2.6	3.4	4.1	4.8	6.2	8.3	12	7698K	384	2562
2400-3	90KC	3	2	NO	2400-3	350	1.0	1.1	1.1	1.5	1.7	2.6	3.6	4.8	5.9	7.4	9.7	15	1053K	500	2344
2400-3	90KC	4	2	NO	2400-3	350	1.1	1.1	1.2	1.4	1.6	2.3	3.2	3.8	4.6	5.7	7.3	12	1777K	500	2344
2400-3	90KC	6	2	NO	2400-3	250	1.2	1.2	1.3	1.4	1.6	2.3	2.8	3.6	4.1	4.9	6.6	9.6	4053K	500	2495
2400-3	90KC	10	2	NO	2400-3	150	1.4	1.4	1.5	1.6	1.7	2.2	2.8	3.2	3.7	4.7	6.1	8.4	7698K	384	2562
2311	156KC	2	2	NO	2311	125	1.0	1.1	1.1	1.3	1.4	1.8	2.9	3.5	4.2	4.8	6.0	8.6	451K	181	2624
2311	156KC	3	2	NO	2311	125	1.0	1.0	1.1	1.2	1.2	1.4	2.3	2.7	3.2	3.6	4.4	6.1	677K	181	2624
2311	156KC	4	2	NO	2311	125	1.1	1.1	1.1	1.2	1.2	1.5	2.4	2.8	3.2	3.6	4.5	6.2	1016K	181	2621
2301	1200KC	2	2	NO	2301	200	1.0	1.1	1.1	1.4	1.4	2.0	2.7	3.0	3.8	4.3	5.1	CE	218K	1000	1588
2301	1200KC	3	2	NO	2301	200	1.0	1.1	1.1	1.4	1.5	2.0	2.7	3.1	3.9	4.3	5.2	7.6	327K	1000	1588
2301	1200KC	4	2	NO	2301	200	1.0	1.2	1.2	1.5	1.5	2.1	2.8	3.2	4.0	4.4	5.3	7.7	490K	1000	1586
2400-2	60KC	3	2	YES	2400-2	350	1.0	1.1	1.2	1.6	1.8	2.9	4.1	5.5	6.8	8.5	12	18	1053K	500	2344
2400-2	60KC	4	2	YES	2400-2	350	1.1	1.1	1.2	1.5	1.7	2.5	3.5	4.3	5.2	6.5	8.3	14	1777K	500	2344
2400-2	60KC	6	2	YES	2400-2	250	1.2	1.3	1.3	1.5	1.7	2.4	3.0	3.9	4.6	5.3	7.3	11	4053K	500	2495
2400-2	60KC	10	2	YES	2400-2	150	1.4	1.5	1.5	1.7	1.8	2.3	2.9	3.8	4.4	5.0	6.9	9.6	7698K	384	2562
2400-3	90KC	3	2	YES	2400-3	350	1.0	1.1	1.1	1.4	1.6	2.3	3.1	4.1	4.9	6.1	7.9	13	1053K	500	2344
2400-3	90KC	4	2	YES	2400-3	350	1.1	1.1	1.2	1.4	1.5	2.1	2.7	3.3	3.9	4.8	6.0	9.3	1777K	500	2344
2400-3	90KC	6	2	YES	2400-3	250	1.2	1.2	1.3	1.4	1.5	2.0	2.4	3.1	3.5	4.0	5.4	7.6	4053K	500	2495
2400-3	90KC	10	2	YES	2400-3	150	1.4	1.4	1.5	1.6	1.7	2.0	2.4	3.1	3.5	3.9	5.2	7.0	7698K	384	2562

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	95	1.2	1.9	3.0	6.4	7.7	18	29	38	52	62	89	CE	263K	125	782
2400-2	60KC	4	1	NO	2400-2	95	1.3	1.7	2.7	4.8	5.8	14	20	29	35	43	62	110	526K	125	782
2400-2	60KC	6	1	NO	2400-2	90	1.4	1.7	2.4	4.2	5.0	11	17	22	30	36	48	86	1053K	125	839
2400-2	60KC	10	1	NO	2400-2	50	1.6	1.9	2.4	4.0	4.6	9.0	15	19	27	32	42	73	2068K	125	853
2400-3	90KC	3	1	NO	2400-3	95	1.1	1.6	2.4	4.6	5.5	13	20	26	35	42	60	CE	263K	125	782
2400-3	90KC	4	1	NO	2400-3	95	1.2	1.5	2.2	3.6	4.3	9.3	14	20	24	30	42	70	526K	125	782
2400-3	90KC	6	1	NO	2400-3	90	1.3	1.5	2.0	3.3	3.8	7.3	12	16	21	24	33	58	1053K	125	839
2400-3	90KC	10	1	NO	2400-3	50	1.5	1.7	2.1	3.1	3.6	6.6	11	14	19	22	29	50	2068K	125	853
2311	156KC	1	1	NO	2311	30	1.1	1.4	1.8	2.5	2.9	8.1	CE	CE	CE	CE	CE	CE	56K	45	916
2311	156KC	2	1	NO	2311	30	1.1	1.4	1.8	2.6	2.9	7.3	11	15	CE	CE	CE	CE	112K	45	916
2311	156KC	3	1	NO	2311	30	1.1	1.3	1.6	2.2	2.4	6.2	8.8	13	18	21	CE	CE	169K	45	916
2301	1200KC	1	1	NO	2301	120	1.0	1.2	1.6	2.1	2.2	CE	CE	CE	CE	CE	CE	CE	27K	250	475
2301	1200KC	2	1	NO	2301	120	1.1	1.3	1.6	2.1	2.3	3.5	CE	CE	CE	CE	CE	CE	55K	250	475
2301	1200KC	3	1	NO	2301	120	1.1	1.3	1.6	2.2	2.4	3.5	4.9	CE	CE	CE	CE	CE	83K	250	475
2400-2	60KC	3	2	NO	2400-2	95	1.2	1.7	2.6	4.9	6.0	14	21	28	38	45	64	CE	263K	125	782
2400-2	60KC	4	2	NO	2400-2	95	1.2	1.6	2.2	3.8	5.0	9.8	15	21	26	34	45	77	513K	125	782
2400-2	60KC	6	2	NO	2400-2	90	1.3	1.5	2.2	3.5	4.2	8.5	13	17	22	27	38	56	1019K	125	708
2400-2	60KC	10	2	NO	2400-2	50	1.5	1.7	2.2	3.4	3.9	7.4	12	15	18	21	28	49	1953K	96	844
2400-3	90KC	3	2	NO	2400-3	95	1.1	1.5	2.1	3.6	4.3	9.1	15	19	26	31	44	CE	263K	125	782
2400-3	90KC	4	2	NO	2400-3	95	1.2	1.4	1.9	2.9	3.7	7.0	11	15	18	23	31	52	513K	125	782
2400-3	90KC	6	2	NO	2400-3	90	1.3	1.4	1.8	2.8	3.2	6.1	8.9	12	15	19	26	38	1019K	125	708
2400-3	90KC	10	2	NO	2400-3	50	1.5	1.6	1.9	2.8	3.1	5.5	8.1	11	13	15	19	34	1953K	96	844
2311	156KC	2	2	NO	2311	30	1.1	1.3	1.7	3.0	3.5	6.0	8.5	13	CE	CE	CE	CE	112K	45	889
2311	156KC	3	2	NO	2311	30	1.1	1.2	1.3	2.4	2.7	4.4	6.1	9.0	13	15	CE	CE	169K	45	889
2311	156KC	4	2	NO	2311	30	1.1	1.2	1.4	2.4	2.8	4.4	6.1	9.1	13	15	20	CE	253K	45	888
2301	1200KC	2	2	NO	2301	120	1.1	1.2	1.6	2.1	2.3	3.4	CE	CE	CE	CE	CE	CE	55K	250	475
2301	1200KC	3	2	NO	2301	120	1.1	1.3	1.6	2.2	2.3	3.4	4.8	CE	CE	CE	CE	CE	83K	250	475
2301	1200KC	4	2	NO	2301	120	1.1	1.3	1.7	2.3	2.4	3.5	4.9	5.8	7.4	CE	CE	CE	125K	250	474
2400-2	60KC	3	2	YES	2400-2	95	1.1	1.5	2.3	4.2	5.0	11	18	23	31	37	52	CE	263K	125	782
2400-2	60KC	4	2	YES	2400-2	95	1.2	1.5	2.0	3.3	4.2	8.2	12	17	21	28	36	62	513K	125	782
2400-2	60KC	6	2	YES	2400-2	90	1.3	1.5	1.9	3.0	3.6	6.9	11	15	18	21	31	51	1019K	125	708
2400-2	60KC	10	2	YES	2400-2	50	1.5	1.7	2.0	2.9	3.3	6.0	9.3	12	17	20	26	45	1953K	96	844
2400-3	90KC	3	2	YES	2400-3	95	1.1	1.4	1.9	3.1	3.7	7.5	12	16	21	25	35	CE	263K	125	782
2400-3	90KC	4	2	YES	2400-3	95	1.2	1.4	1.7	2.6	3.2	5.8	8.4	12	15	19	25	42	513K	125	782
2400-3	90KC	6	2	YES	2400-3	90	1.3	1.4	1.7	2.4	2.8	5.0	7.2	11	13	15	21	35	1019K	125	708
2400-3	90KC	10	2	YES	2400-3	50	1.5	1.6	1.8	2.5	2.7	4.5	6.7	8.5	12	14	18	30	1953K	96	844

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.9	3.9	7.6	18	22	48	76	110	CE	CE	CE	CE	105K	50	333
2400-2	60KC	4	1	NO	2400-2	35	1.7	3.0	5.7	13	17	35	57	76	110	140	200	CE	210K	50	333
2400-2	60KC	6	1	NO	2400-2	35	1.7	2.7	5.0	9.9	14	30	44	64	88	110	150	230	421K	50	332
2400-2	60KC	10	1	NO	2400-2	25	1.9	2.6	4.5	8.9	12	25	39	57	75	92	130	190	827K	50	357
2400-3	90KC	3	1	NO	2400-3	35	1.6	3.0	5.5	13	15	33	52	74	CE	CE	CE	CE	105K	50	333
2400-3	90KC	4	1	NO	2400-3	35	1.5	2.4	4.2	8.5	12	24	39	51	72	92	140	CE	210K	50	333
2400-3	90KC	6	1	NO	2400-3	35	1.5	2.2	3.7	7.1	9.6	20	30	43	60	73	97	160	421K	50	332
2400-3	90KC	10	1	NO	2400-3	25	1.7	2.2	3.5	6.5	7.9	17	27	39	51	63	83	130	827K	50	357
2311	156KC	1	1	NO	2311	15	1.4	1.9	2.9	8.0	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	390
2311	156KC	2	1	NO	2311	15	1.4	1.9	2.9	7.2	8.7	CE	CE	CE	CE	CE	CE	CE	45K	18	390
2311	156KC	3	1	NO	2311	15	1.3	1.7	2.4	6.1	7.3	17	CE	CE	CE	CE	CE	CE	67K	18	390
2301	1200KC	1	1	NO	2301	50	1.2	1.6	2.1	CE	CE	CE	CE	CE	CE	CE	CE	CE	11K	100	201
2301	1200KC	2	1	NO	2301	50	1.2	1.6	2.2	3.3	CE	CE	CE	CE	CE	CE	CE	CE	22K	100	201
2301	1200KC	3	1	NO	2301	50	1.3	1.7	2.3	3.3	3.7	CE	CE	CE	CE	CE	CE	CE	33K	100	201
2400-2	60KC	3	2	NO	2400-2	35	1.6	3.1	5.8	13	16	38	57	80	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	NO	2400-2	35	1.6	2.5	4.5	9.8	12	26	42	56	78	99	150	CE	209K	50	297
2400-2	60KC	6	2	NO	2400-2	35	1.5	2.4	4.1	8.0	11	21	34	47	58	70	110	170	408K	50	306
2400-2	60KC	10	2	NO	2400-2	25	1.7	2.4	3.9	7.4	9.6	18	26	41	51	60	79	120	779K	38	354
2400-3	90KC	3	2	NO	2400-3	35	1.5	2.4	4.3	9.1	12	26	39	54	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	NO	2400-3	35	1.4	2.1	3.4	6.9	8.4	18	29	38	53	67	98	CE	209K	50	297
2400-3	90KC	6	2	NO	2400-3	35	1.4	2.0	3.1	5.8	7.6	15	23	32	40	48	71	120	408K	50	306
2400-3	90KC	10	2	NO	2400-3	25	1.6	2.0	3.1	5.4	6.9	13	18	28	35	41	54	80	779K	38	354
2311	156KC	2	2	NO	2311	15	1.3	1.8	3.4	5.9	7.1	CE	CE	CE	CE	CE	CE	CE	45K	18	376
2311	156KC	3	2	NO	2311	15	1.1	1.4	2.6	4.2	5.0	13	CE	CE	CE	CE	CE	CE	67K	18	376
2311	156KC	4	2	NO	2311	15	1.2	1.4	2.7	4.3	5.1	13	18	32	CE	CE	CE	CE	101K	18	376
2301	1200KC	2	2	NO	2301	50	1.2	1.6	2.2	3.2	CE	CE	CE	CE	CE	CE	CE	CE	22K	100	201
2301	1200KC	3	2	NO	2301	50	1.3	1.6	2.2	3.2	3.6	CE	CE	CE	CE	CE	CE	CE	33K	100	201
2301	1200KC	4	2	NO	2301	50	1.3	1.7	2.3	3.3	3.7	6.2	CE	CE	CE	CE	CE	CE	50K	100	201
2400-2	60KC	3	2	YES	2400-2	35	1.5	2.7	4.9	11	14	31	46	65	CE	CE	CE	CE	105K	50	286
2400-2	60KC	4	2	YES	2400-2	35	1.5	2.3	3.9	8.2	9.9	21	34	45	63	80	120	CE	209K	50	297
2400-2	60KC	6	2	YES	2400-2	35	1.5	2.1	3.5	6.5	8.6	18	26	38	53	65	86	140	408K	50	306
2400-2	60KC	10	2	YES	2400-2	25	1.7	2.1	3.3	5.9	7.7	17	24	38	46	57	75	120	779K	38	354
2400-3	90KC	3	2	YES	2400-3	35	1.4	2.2	3.6	7.5	9.1	21	31	44	CE	CE	CE	CE	105K	50	286
2400-3	90KC	4	2	YES	2400-3	35	1.4	1.9	3.0	5.8	7.0	15	23	31	43	54	79	CE	209K	50	297
2400-3	90KC	6	2	YES	2400-3	35	1.4	1.8	2.7	4.7	6.1	13	18	26	36	44	58	91	408K	50	306
2400-3	90KC	10	2	YES	2400-3	25	1.6	1.9	2.7	4.5	5.7	12	17	26	31	39	51	75	779K	38	354

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	3.9	9.8	22	48	64	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-2	60KC	4	1	NO	2400-2	20	3.0	7.7	16	35	44	110	190	CE	CE	CE	CE	CE	84K	20	137
2400-2	60KC	6	1	NO	2400-2	20	2.7	6.6	14	29	36	87	140	190	240	310	CE	CE	168K	20	124
2400-2	60KC	10	1	NO	2400-2	15	2.6	5.3	13	26	32	74	120	160	190	230	320	510	330K	20	137
2400-3	90KC	3	1	NO	2400-3	20	3.0	6.9	15	33	43	CE	CE	CE	CE	CE	CE	CE	42K	20	131
2400-3	90KC	4	1	NO	2400-3	20	2.4	5.5	12	24	30	72	130	CE	CE	CE	CE	CE	84K	20	137
2400-3	90KC	6	1	NO	2400-3	20	2.2	4.9	9.5	20	25	59	90	130	160	210	CE	CE	168K	20	124
2400-3	90KC	10	1	NO	2400-3	15	2.2	4.0	8.7	18	22	50	77	110	130	160	210	350	330K	20	137
2311	156KC	1	1	NO	2311	6	1.9	5.5	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	161
2311	156KC	2	1	NO	2311	6	2.0	4.9	8.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	161
2311	156KC	3	1	NO	2311	6	1.7	4.2	7.4	18	22	CE	CE	CE	CE	CE	CE	CE	26K	7	161
2301	1200KC	1	1	NO	2301	25	1.6	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	4K	40	77
2301	1200KC	2	1	NO	2301	25	1.6	2.6	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	40	77
2301	1200KC	3	1	NO	2301	25	1.7	2.7	4.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	13K	40	77
2400-2	60KC	3	2	NO	2400-2	20	3.1	7.7	17	37	47	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	NO	2400-2	20	2.6	5.9	12	26	35	79	140	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	NO	2400-2	20	2.4	5.3	11	22	28	58	99	140	180	240	CE	CE	162K	20	114
2400-2	60KC	10	2	NO	2400-2	15	2.3	4.5	9.5	18	22	50	74	98	130	150	250	420	310K	15	135
2400-3	90KC	3	2	NO	2400-3	20	2.4	5.5	12	25	32	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	NO	2400-3	20	2.1	4.3	8.3	18	24	53	92	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	NO	2400-3	20	2.0	4.0	7.5	15	19	39	67	93	120	160	CE	CE	162K	20	114
2400-3	90KC	10	2	NO	2400-3	15	2.0	3.5	6.9	13	15	34	50	66	82	98	170	290	310K	15	135
2311	156KC	2	2	NO	2311	6	1.8	4.1	7.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	155
2311	156KC	3	2	NO	2311	6	1.4	3.1	5.1	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	155
2311	156KC	4	2	NO	2311	6	1.4	3.1	5.1	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	155
2301	1200KC	2	2	NO	2301	25	1.6	2.6	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	40	77
2301	1200KC	3	2	NO	2301	25	1.6	2.6	3.9	CE	CE	CE	CE	CE	CE	CE	CE	CE	13K	40	77
2301	1200KC	4	2	NO	2301	25	1.7	2.7	4.0	6.6	CE	CE	CE	CE	CE	CE	CE	CE	20K	40	77
2400-2	60KC	3	2	YES	2400-2	20	2.7	6.5	14	30	38	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-2	60KC	4	2	YES	2400-2	20	2.3	5.0	9.8	21	29	64	120	CE	CE	CE	CE	CE	82K	20	108
2400-2	60KC	6	2	YES	2400-2	20	2.1	4.4	8.6	18	22	53	81	120	150	190	CE	CE	162K	20	114
2400-2	60KC	10	2	YES	2400-2	15	2.1	4.3	8.0	17	20	46	71	94	120	140	200	340	310K	15	135
2400-3	90KC	3	2	YES	2400-3	20	2.2	4.7	9.2	21	26	CE	CE	CE	CE	CE	CE	CE	42K	20	109
2400-3	90KC	4	2	YES	2400-3	20	1.9	3.7	6.9	15	20	43	75	CE	CE	CE	CE	CE	82K	20	108
2400-3	90KC	6	2	YES	2400-3	20	1.8	3.4	6.1	13	15	36	55	75	95	130	CE	CE	162K	20	114
2400-3	90KC	10	2	YES	2400-3	15	1.9	3.3	5.8	12	14	31	48	63	79	94	130	230	310K	15	135

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.1	1.1	1.3	1.6	1.9	3.6	5.6	7.1	9.7	12	17	25	1053K	500	5558
2400-2	60KC	4	1	NO	2400-2	350	1.1	1.2	1.3	1.6	1.7	2.8	4.2	5.9	7.1	8.3	13	18	2106K	500	5556
2400-2	60KC	6	1	NO	2400-2	350	1.2	1.3	1.4	1.7	1.9	2.5	3.7	5.2	6.2	7.1	11	16	4213K	500	5556
2400-2	60KC	10	1	NO	2400-2	300	1.4	1.5	1.7	1.9	2.0	2.7	3.3	4.0	5.5	6.3	8.2	14	8427K	500	5608
2400-3	90KC	3	1	NO	2400-3	350	1.1	1.1	1.2	1.4	1.6	2.8	4.2	5.2	7.0	8.2	12	17	1053K	500	5558
2400-3	90KC	4	1	NO	2400-3	350	1.1	1.2	1.3	1.4	1.5	2.3	3.2	4.4	5.2	6.1	8.7	13	2106K	500	5556
2400-3	90KC	6	1	NO	2400-3	350	1.2	1.3	1.4	1.5	1.6	2.1	2.9	4.0	4.6	5.3	7.6	11	4213K	500	5556
2400-3	90KC	10	1	NO	2400-3	300	1.4	1.5	1.6	1.8	1.8	2.3	2.7	3.2	4.2	4.8	6.1	9.5	8427K	500	5608
2311	156KC	1	1	NO	2311	125	1.0	1.1	1.2	1.4	1.5	2.0	2.5	3.0	3.5	4.0	8.3	CE	227K	181	5966
2311	156KC	2	1	NO	2311	125	1.0	1.1	1.2	1.4	1.5	2.0	2.5	3.0	3.5	4.0	8.0	13	455K	181	5966
2311	156KC	3	1	NO	2311	125	1.0	1.1	1.1	1.3	1.4	1.7	2.1	2.5	2.9	3.2	7.0	11	683K	181	5966
2301	1200KC	1	1	NO	2301	200	1.0	1.0	1.0	1.1	1.2	1.3	1.8	2.0	CE	CE	CE	CE	120K	1000	4849
2301	1200KC	2	1	NO	2301	200	1.0	1.0	1.1	1.1	1.2	1.3	1.8	2.1	2.3	2.6	3.1	CE	240K	1000	4849
2301	1200KC	3	1	NO	2301	200	1.0	1.0	1.1	1.1	1.2	1.4	1.8	2.1	2.3	2.6	3.1	4.2	360K	1000	4849
2400-2	60KC	3	2	NO	2400-2	350	1.0	1.1	1.2	1.4	1.6	2.9	4.3	5.3	7.2	8.4	13	19	1053K	500	5515
2400-2	60KC	4	2	NO	2400-2	350	1.1	1.1	1.2	1.4	1.5	2.4	3.3	4.5	5.4	6.2	9.0	14	2106K	500	5530
2400-2	60KC	6	2	NO	2400-2	350	1.2	1.2	1.3	1.5	1.6	2.1	3.0	3.8	4.9	5.6	7.7	12	4213K	500	5556
2400-2	60KC	10	2	NO	2400-2	300	1.4	1.4	1.5	1.7	1.8	2.3	2.9	3.4	4.5	5.1	6.4	11	8268K	500	5301
2400-3	90KC	3	2	NO	2400-3	350	1.0	1.1	1.1	1.3	1.5	2.3	3.2	4.0	5.2	6.1	8.6	13	1053K	500	5515
2400-3	90KC	4	2	NO	2400-3	350	1.1	1.1	1.2	1.3	1.4	2.0	2.6	3.4	4.0	4.6	6.5	9.4	2106K	500	5530
2400-3	90KC	6	2	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	1.8	2.4	2.9	3.7	4.2	5.6	8.0	4213K	500	5556
2400-3	90KC	10	2	NO	2400-3	300	1.4	1.4	1.5	1.6	1.7	2.0	2.4	2.8	3.6	4.0	4.8	7.5	8268K	500	5301
2311	156KC	2	2	NO	2311	125	1.0	1.1	1.1	1.3	1.4	1.8	2.2	2.7	3.1	3.5	6.7	11	455K	181	5885
2311	156KC	3	2	NO	2311	125	1.0	1.0	1.1	1.2	1.2	1.4	1.6	1.8	2.1	2.3	5.0	8.0	683K	181	5885
2311	156KC	4	2	NO	2311	125	1.1	1.1	1.1	1.2	1.2	1.5	1.7	1.9	2.1	2.3	5.1	8.1	1025K	181	5882
2301	1200KC	2	2	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.7	2.0	2.2	2.4	2.9	CE	240K	1000	4849
2301	1200KC	3	2	NO	2301	200	1.0	1.0	1.1	1.1	1.2	1.3	1.8	2.0	2.2	2.5	3.0	4.0	360K	1000	4849
2301	1200KC	4	2	NO	2301	200	1.0	1.1	1.1	1.2	1.2	1.4	1.8	2.1	2.3	2.5	3.0	4.0	540K	1000	4846
2400-2	60KC	3	2	YES	2400-2	350	1.0	1.1	1.2	1.4	1.5	2.5	3.6	4.5	5.9	6.9	9.9	15	1053K	500	5515
2400-2	60KC	4	2	YES	2400-2	350	1.1	1.1	1.2	1.4	1.4	2.1	2.8	3.8	4.5	5.2	7.4	11	2106K	500	5530
2400-2	60KC	6	2	YES	2400-2	350	1.2	1.2	1.3	1.5	1.5	1.9	2.6	3.5	4.0	4.6	6.4	9.0	4213K	500	5556
2400-2	60KC	10	2	YES	2400-2	300	1.4	1.4	1.5	1.7	1.8	2.1	2.5	2.9	3.7	4.2	5.9	8.1	8268K	500	5301
2400-3	90KC	3	2	YES	2400-3	350	1.0	1.1	1.1	1.3	1.4	2.0	2.8	3.4	4.3	5.0	7.0	11	1053K	500	5515
2400-3	90KC	4	2	YES	2400-3	350	1.1	1.1	1.2	1.3	1.3	1.8	2.3	2.9	3.4	3.9	5.3	7.6	2106K	500	5530
2400-3	90KC	6	2	YES	2400-3	350	1.2	1.2	1.3	1.4	1.4	1.7	2.1	2.8	3.1	3.5	4.8	6.5	4213K	500	5556
2400-3	90KC	10	2	YES	2400-3	300	1.4	1.4	1.5	1.6	1.6	1.9	2.1	2.4	3.0	3.3	4.5	5.9	8268K	500	5301

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	90	1.2	1.5	2.7	5.0	6.2	15	24	31	43	52	75	CE	263K	125	1874
2400-2	60KC	4	1	NO	2400-2	90	1.3	1.6	2.0	4.2	5.0	11	18	23	32	38	56	100	526K	125	1874
2400-2	60KC	6	1	NO	2400-2	90	1.4	1.7	2.1	3.7	4.3	8.7	15	19	27	32	42	72	1053K	125	1872
2400-2	60KC	10	1	NO	2400-2	90	1.6	1.9	2.4	3.3	3.8	7.5	13	17	21	28	36	60	2083K	125	1869
2400-3	90KC	3	1	NO	2400-3	90	1.1	1.3	2.2	3.7	4.5	10	17	22	30	35	51	CE	263K	125	1874
2400-3	90KC	4	1	NO	2400-3	90	1.2	1.4	1.7	3.2	3.7	7.3	12	16	22	26	38	68	526K	125	1874
2400-3	90KC	6	1	NO	2400-3	90	1.3	1.5	1.8	2.9	3.3	6.3	11	14	19	22	29	49	1053K	125	1872
2400-3	90KC	10	1	NO	2400-3	90	1.5	1.7	2.1	2.7	3.0	5.6	8.9	12	14	19	25	41	2083K	125	1869
2311	156KC	1	1	NO	2311	30	1.1	1.4	1.8	2.5	2.9	4.9	CE	CE	CE	CE	CE	CE	56K	45	2019
2311	156KC	2	1	NO	2311	30	1.1	1.4	1.8	2.6	2.9	4.9	13	16	CE	CE	CE	CE	113K	45	2019
2311	156KC	3	1	NO	2311	30	1.1	1.3	1.6	2.2	2.4	3.9	11	14	18	21	CE	CE	170K	45	2019
2301	1200KC	1	1	NO	2301	120	1.0	1.0	1.1	1.4	1.5	CE	CE	CE	CE	CE	CE	CE	30K	250	1577
2301	1200KC	2	1	NO	2301	120	1.0	1.0	1.1	1.4	1.5	1.9	CE	CE	CE	CE	CE	CE	60K	250	1577
2301	1200KC	3	1	NO	2301	120	1.0	1.0	1.1	1.4	1.5	2.0	2.4	CE	CE	CE	CE	CE	91K	250	1577
2400-2	60KC	3	2	NO	2400-2	90	1.1	1.4	2.2	3.9	5.2	11	18	23	31	37	54	CE	263K	125	1764
2400-2	60KC	4	2	NO	2400-2	90	1.2	1.4	1.8	3.3	3.9	7.7	13	17	23	28	40	72	526K	125	1764
2400-2	60KC	6	2	NO	2400-2	90	1.3	1.5	1.9	3.1	3.5	6.8	11	14	20	24	32	48	1053K	125	1852
2400-2	60KC	10	2	NO	2400-2	90	1.5	1.7	2.1	2.9	3.3	6.1	8.7	13	17	21	27	39	2015K	125	1795
2400-3	90KC	3	2	NO	2400-3	90	1.1	1.2	1.8	3.0	3.8	7.5	12	16	22	26	37	CE	263K	125	1764
2400-3	90KC	4	2	NO	2400-3	90	1.2	1.3	1.6	2.6	3.0	5.5	8.8	12	16	19	28	49	526K	125	1764
2400-3	90KC	6	2	NO	2400-3	90	1.3	1.4	1.6	2.5	2.8	5.0	7.6	9.9	14	17	22	33	1053K	125	1852
2400-3	90KC	10	2	NO	2400-3	90	1.4	1.6	1.8	2.4	2.6	4.6	6.3	9.1	12	15	19	27	2015K	125	1795
2311	156KC	2	2	NO	2311	30	1.1	1.3	1.7	2.3	2.7	4.3	11	14	CE	CE	CE	CE	113K	45	1992
2311	156KC	3	2	NO	2311	30	1.1	1.2	1.3	1.7	1.8	2.7	8.0	11	13	15	CE	CE	170K	45	1992
2311	156KC	4	2	NO	2311	30	1.1	1.2	1.4	1.7	1.9	2.7	8.0	11	13	15	20	CE	255K	45	1991
2301	1200KC	2	2	NO	2301	120	1.0	1.0	1.1	1.3	1.4	1.8	CE	CE	CE	CE	CE	CE	60K	250	1577
2301	1200KC	3	2	NO	2301	120	1.0	1.0	1.1	1.4	1.5	1.9	2.3	CE	CE	CE	CE	CE	91K	250	1577
2301	1200KC	4	2	NO	2301	120	1.1	1.1	1.1	1.4	1.5	1.9	2.3	2.7	3.2	CE	CE	CE	136K	250	1576
2400-2	60KC	3	2	YES	2400-2	90	1.1	1.3	2.0	3.3	4.4	8.7	14	19	26	30	44	CE	263K	125	1764
2400-2	60KC	4	2	YES	2400-2	90	1.2	1.4	1.7	2.9	3.4	6.4	11	14	19	23	33	58	526K	125	1764
2400-2	60KC	6	2	YES	2400-2	90	1.3	1.5	1.7	2.6	3.0	5.6	8.9	12	16	19	25	42	1053K	125	1852
2400-2	60KC	10	2	YES	2400-2	90	1.5	1.7	2.0	2.5	2.8	5.0	7.9	10	13	17	22	36	2015K	125	1795
2400-3	90KC	3	2	YES	2400-3	90	1.1	1.2	1.7	2.6	3.3	6.2	9.7	13	18	21	30	CE	263K	125	1764
2400-3	90KC	4	2	YES	2400-3	90	1.1	1.3	1.5	2.3	2.6	4.7	7.3	9.5	13	16	22	39	526K	125	1764
2400-3	90KC	6	2	YES	2400-3	90	1.3	1.4	1.6	2.2	2.4	4.2	6.3	8.0	11	13	17	29	1053K	125	1852
2400-3	90KC	10	2	YES	2400-3	90	1.4	1.6	1.8	2.2	2.3	3.8	5.8	7.2	9.0	12	15	25	2015K	125	1795

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.5	3.1	5.9	15	18	43	70	93	CE	CE	CE	CE	105K	50	808
2400-2	60KC	4	1	NO	2400-2	35	1.6	2.7	4.9	11	13	32	47	69	97	130	190	CE	200K	50	817
2400-2	60KC	6	1	NO	2400-2	35	1.7	2.4	4.3	8.7	11	24	39	58	73	90	140	210	421K	50	807
2400-2	60KC	10	1	NO	2400-2	35	1.9	2.6	3.8	7.5	9.0	20	34	44	61	73	110	170	842K	50	806
2400-3	90KC	3	1	NO	2400-3	35	1.3	2.4	4.3	9.9	13	29	47	63	CE	CE	CE	CE	105K	50	808
2400-3	90KC	4	1	NO	2400-3	35	1.4	2.1	3.7	7.2	9.0	22	32	47	65	84	130	CE	200K	50	817
2400-3	90KC	6	1	NO	2400-3	35	1.5	2.0	3.3	6.2	7.5	16	27	39	50	61	88	140	421K	50	807
2400-3	90KC	10	1	NO	2400-3	35	1.7	2.2	3.0	5.5	6.5	14	23	30	42	50	72	120	842K	50	806
2311	156KC	1	1	NO	2311	15	1.4	1.9	2.9	4.8	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	865
2311	156KC	2	1	NO	2311	15	1.4	1.9	2.9	4.8	5.8	CE	CE	CE	CE	CE	CE	CE	45K	18	865
2311	156KC	3	1	NO	2311	15	1.3	1.7	2.4	3.7	4.4	17	CE	CE	CE	CE	CE	CE	68K	18	865
2301	1200KC	1	1	NO	2301	50	1.0	1.1	1.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	12K	100	676
2301	1200KC	2	1	NO	2301	50	1.0	1.1	1.4	1.8	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	676
2301	1200KC	3	1	NO	2301	50	1.0	1.1	1.4	1.8	2.0	CE	CE	CE	CE	CE	CE	CE	36K	100	676
2400-2	60KC	3	2	NO	2400-2	35	1.4	2.5	4.6	11	13	31	51	67	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	NO	2400-2	35	1.4	2.2	3.9	7.7	11	23	34	50	76	95	140	CE	210K	50	782
2400-2	60KC	6	2	NO	2400-2	35	1.5	2.1	3.5	6.8	8.3	19	30	40	49	68	91	150	421K	50	759
2400-2	60KC	10	2	NO	2400-2	35	1.7	2.2	3.2	6.1	7.3	16	25	33	41	48	66	120	835K	50	770
2400-3	90KC	3	2	NO	2400-3	35	1.2	2.0	3.4	7.4	9.0	21	34	45	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	NO	2400-3	35	1.3	1.9	3.0	5.5	7.5	16	23	34	51	64	92	CE	210K	50	782
2400-3	90KC	6	2	NO	2400-3	35	1.4	1.8	2.8	5.0	6.0	13	20	27	34	46	62	100	421K	50	759
2400-3	90KC	10	2	NO	2400-3	35	1.6	1.9	2.6	4.6	5.3	11	18	23	28	33	45	78	835K	50	770
2311	156KC	2	2	NO	2311	15	1.3	1.8	2.6	4.2	5.0	CE	CE	CE	CE	CE	CE	CE	45K	18	851
2311	156KC	3	2	NO	2311	15	1.1	1.4	1.8	2.5	2.9	13	CE	CE	CE	CE	CE	CE	68K	18	851
2311	156KC	4	2	NO	2311	15	1.2	1.4	1.8	2.6	3.0	13	18	24	CE	CE	CE	CE	102K	18	850
2301	1200KC	2	2	NO	2301	50	1.0	1.1	1.4	1.7	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	676
2301	1200KC	3	2	NO	2301	50	1.0	1.1	1.4	1.7	1.9	CE	CE	CE	CE	CE	CE	CE	36K	100	676
2301	1200KC	4	2	NO	2301	50	1.1	1.1	1.4	1.8	1.9	2.8	CE	CE	CE	CE	CE	CE	54K	100	676
2400-2	60KC	3	2	YES	2400-2	35	1.3	2.2	3.9	8.7	11	26	41	54	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	YES	2400-2	35	1.4	2.0	3.4	6.4	8.8	19	28	41	61	76	110	CE	210K	50	782
2400-2	60KC	6	2	YES	2400-2	35	1.5	1.9	3.0	5.6	6.7	15	23	34	43	53	77	120	421K	50	759
2400-2	60KC	10	2	YES	2400-2	35	1.7	2.1	2.8	5.0	5.9	13	21	27	37	43	64	98	835K	50	770
2400-3	90KC	3	2	YES	2400-3	35	1.2	1.8	3.0	6.2	7.4	18	28	37	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	YES	2400-3	35	1.3	1.7	2.6	4.6	6.2	13	19	28	42	52	74	CE	210K	50	782
2400-3	90KC	6	2	YES	2400-3	35	1.4	1.6	2.4	4.1	4.9	11	16	23	29	36	52	79	421K	50	759
2400-3	90KC	10	2	YES	2400-3	35	1.6	1.9	2.3	3.8	4.4	8.6	14	19	25	30	43	66	835K	50	770

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	3.1	8.2	18	43	53	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-2	60KC	4	1	NO	2400-2	20	2.6	5.9	13	31	39	95	170	CE	CE	CE	CE	CE	81K	20	326
2400-2	60KC	6	1	NO	2400-2	20	2.4	5.0	11	23	33	73	120	170	230	280	CE	CE	162K	20	326
2400-2	60KC	10	1	NO	2400-2	20	2.6	4.3	8.9	20	28	61	90	140	180	210	290	470	337K	20	320
2400-3	90KC	3	1	NO	2400-3	20	2.4	5.8	12	29	36	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-3	90KC	4	1	NO	2400-3	20	2.1	4.3	8.9	21	26	64	120	CE	CE	CE	CE	CE	81K	20	326
2400-3	90KC	6	1	NO	2400-3	20	2.0	3.7	7.4	16	22	49	75	120	150	190	CE	CE	162K	20	326
2400-3	90KC	10	1	NO	2400-3	20	2.2	3.4	6.4	14	20	41	61	89	120	150	190	320	337K	20	320
2311	156KC	1	1	NO	2311	6	1.9	3.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	6K	7	356
2311	156KC	2	1	NO	2311	6	2.0	3.4	5.9	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	356
2311	156KC	3	1	NO	2311	6	1.7	2.7	4.4	17	21	CE	CE	CE	CE	CE	CE	CE	26K	7	356
2301	1200KC	1	1	NO	2301	25	1.1	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	4K	40	273
2301	1200KC	2	1	NO	2301	25	1.1	1.5	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	273
2301	1200KC	3	1	NO	2301	25	1.1	1.5	1.9	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	273
2400-2	60KC	3	2	NO	2400-2	20	2.5	6.2	13	31	39	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	NO	2400-2	20	2.2	4.6	11	23	28	75	130	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	NO	2400-2	20	2.1	4.0	8.3	19	25	49	85	130	170	210	CE	CE	168K	20	301
2400-2	60KC	10	2	NO	2400-2	20	2.2	3.7	7.2	16	21	40	60	96	120	150	220	360	333K	20	302
2400-3	90KC	3	2	NO	2400-3	20	2.0	4.5	8.9	21	26	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	NO	2400-3	20	1.8	3.5	7.4	16	19	51	85	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	NO	2400-3	20	1.8	3.1	6.0	13	17	34	58	82	110	140	CE	CE	168K	20	301
2400-3	90KC	10	2	NO	2400-3	20	1.9	2.9	5.3	11	15	28	40	65	80	96	150	240	333K	20	302
2311	156KC	2	2	NO	2311	6	1.8	3.0	5.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	351
2311	156KC	3	2	NO	2311	6	1.4	2.0	2.9	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	351
2311	156KC	4	2	NO	2311	6	1.4	2.0	3.0	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	350
2301	1200KC	2	2	NO	2301	25	1.1	1.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	273
2301	1200KC	3	2	NO	2301	25	1.1	1.4	1.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	273
2301	1200KC	4	2	NO	2301	25	1.1	1.5	1.9	2.6	CE	CE	CE	CE	CE	CE	CE	CE	21K	40	273
2400-2	60KC	3	2	YES	2400-2	20	2.2	5.2	11	25	31	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	YES	2400-2	20	2.0	4.0	8.7	19	23	61	110	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	YES	2400-2	20	1.9	3.4	6.7	15	20	43	71	97	130	170	CE	CE	168K	20	301
2400-2	60KC	10	2	YES	2400-2	20	2.1	3.1	5.8	12	17	36	54	78	110	130	170	280	333K	20	302
2400-3	90KC	3	2	YES	2400-3	20	1.8	3.8	7.4	17	21	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	YES	2400-3	20	1.7	3.0	6.2	13	16	41	69	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	YES	2400-3	20	1.6	2.7	4.9	11	14	29	48	65	87	110	CE	CE	168K	20	301
2400-3	90KC	10	2	YES	2400-3	20	1.9	2.5	4.4	8.5	12	25	36	53	69	83	120	190	333K	20	302

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.0	1.1	1.2	1.6	1.8	3.5	5.5	6.9	9.5	12	17	24	1053K	500	5558
2400-2	60KC	4	1	NO	2400-2	350	1.1	1.1	1.3	1.5	1.7	2.7	4.1	5.8	7.0	8.1	12	18	2106K	500	5556
2400-2	60KC	6	1	NO	2400-2	350	1.2	1.2	1.4	1.6	1.7	2.4	3.5	5.1	6.0	7.0	11	15	4213K	500	5556
2400-2	60KC	10	1	NO	2400-2	350	1.3	1.4	1.6	1.8	1.9	2.6	3.2	3.8	5.3	6.1	9.0	13	8427K	500	5543
2400-3	90KC	3	1	NO	2400-3	350	1.0	1.1	1.1	1.4	1.6	2.7	4.0	5.1	6.8	8.0	12	17	1053K	500	5558
2400-3	90KC	4	1	NO	2400-3	350	1.1	1.1	1.2	1.4	1.5	2.2	3.1	4.3	5.1	5.9	8.5	13	2106K	500	5556
2400-3	90KC	6	1	NO	2400-3	350	1.1	1.2	1.3	1.5	1.6	2.0	2.8	3.8	4.5	5.2	7.4	11	4213K	500	5556
2400-3	90KC	10	1	NO	2400-3	350	1.3	1.4	1.5	1.7	1.7	2.2	2.6	3.0	4.1	4.6	6.6	9.2	8427K	500	5543
2311	156KC	1	1	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.9	2.4	2.9	3.4	3.9	8.1	CE	227K	181	5966
2311	156KC	2	1	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.9	2.4	2.9	3.4	3.9	7.9	13	455K	181	5966
2311	156KC	3	1	NO	2311	125	1.0	1.0	1.1	1.2	1.3	1.7	2.0	2.4	2.8	3.1	6.9	11	683K	181	5966
2311	156KC	4	1	NO	2311	125	1.0	1.1	1.1	1.3	1.3	1.7	2.1	2.4	2.8	3.2	6.9	11	1025K	181	5964
2301	1200KC	1	1	NO	2301	200	0.9	1.0	1.0	1.0	1.1	1.2	1.6	1.8	CE	CE	CE	CE	120K	1000	4849
2301	1200KC	2	1	NO	2301	200	0.9	1.0	1.0	1.1	1.1	1.2	1.6	1.8	2.0	2.2	2.7	CE	240K	1000	4849
2301	1200KC	3	1	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.6	1.8	2.1	2.3	2.7	3.6	360K	1000	4849
2301	1200KC	4	1	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.7	1.9	2.1	2.3	2.8	3.6	540K	1000	4846
2400-2	60KC	3	2	NO	2400-2	350	1.0	1.1	1.1	1.3	1.6	2.8	4.2	5.2	7.1	8.3	12	18	1053K	500	5515
2400-2	60KC	4	2	NO	2400-2	350	1.0	1.1	1.2	1.4	1.5	2.3	3.2	4.4	5.3	6.1	8.9	14	2106K	500	5530
2400-2	60KC	6	2	NO	2400-2	350	1.1	1.2	1.3	1.5	1.5	2.1	2.9	3.7	4.8	5.5	7.6	12	4213K	500	5556
2400-2	60KC	10	2	NO	2400-2	350	1.3	1.4	1.4	1.6	1.7	2.2	2.8	3.3	4.4	5.0	6.3	11	8262K	500	5236
2400-3	90KC	3	2	NO	2400-3	350	1.0	1.0	1.1	1.2	1.4	2.2	3.2	3.9	5.1	5.9	8.4	13	1053K	500	5515
2400-3	90KC	4	2	NO	2400-3	350	1.0	1.1	1.1	1.2	1.3	1.9	2.5	3.3	3.9	4.5	6.3	9.2	2106K	500	5530
2400-3	90KC	6	2	NO	2400-3	350	1.1	1.2	1.2	1.3	1.4	1.8	2.4	2.9	3.6	4.1	5.5	7.9	4213K	500	5556
2400-3	90KC	10	2	NO	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.9	2.3	2.6	3.4	3.8	4.7	7.3	8262K	500	5236
2311	156KC	2	2	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.8	2.2	2.6	3.0	3.4	6.6	11	455K	181	5865
2311	156KC	3	2	NO	2311	125	1.0	1.0	1.0	1.1	1.2	1.4	1.6	1.8	2.0	2.2	5.0	7.9	683K	181	5865
2311	156KC	4	2	NO	2311	125	1.0	1.0	1.1	1.2	1.2	1.4	1.6	1.8	2.0	2.3	5.0	8.0	1025K	181	5882
2301	1200KC	2	2	NO	2301	200	0.9	1.0	1.0	1.0	1.1	1.2	1.5	1.7	1.9	2.1	2.5	CE	240K	1000	4849
2301	1200KC	3	2	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.2	1.6	1.8	2.0	2.1	2.6	3.4	360K	1000	4849
2301	1200KC	4	2	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.6	1.8	2.0	2.2	2.6	3.4	540K	1000	4846
2400-2	60KC	3	2	YES	2400-2	350	1.0	1.0	1.1	1.3	1.5	2.5	3.6	4.4	5.9	6.8	9.8	15	1053K	500	5515
2400-2	60KC	4	2	YES	2400-2	350	1.0	1.1	1.2	1.3	1.4	2.1	2.8	3.8	4.4	5.1	7.3	11	2106K	500	5530
2400-2	60KC	6	2	YES	2400-2	350	1.1	1.2	1.3	1.4	1.5	1.8	2.5	3.4	3.9	4.5	6.3	8.9	4213K	500	5556
2400-2	60KC	10	2	YES	2400-2	350	1.3	1.4	1.4	1.6	1.7	2.0	2.4	2.8	3.6	4.1	5.7	7.9	8262K	500	5236
2400-3	90KC	3	2	YES	2400-3	350	1.0	1.0	1.1	1.2	1.3	2.0	2.7	3.3	4.3	4.9	6.9	10	1053K	500	5515
2400-3	90KC	4	2	YES	2400-3	350	1.0	1.1	1.1	1.2	1.3	1.7	2.2	2.9	3.3	3.8	5.3	7.5	2106K	500	5530
2400-3	90KC	6	2	YES	2400-3	350	1.1	1.2	1.2	1.3	1.4	1.6	2.1	2.7	3.0	3.4	4.7	6.4	4213K	500	5556
2400-3	90KC	10	2	YES	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.8	2.0	2.3	2.9	3.2	4.3	5.8	8262K	500	5236

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	90	1.2	1.5	2.6	4.9	6.1	15	24	31	43	51	75	CE	263K	125	1874
2400-2	60KC	4	1	NO	2400-2	90	1.2	1.5	2.0	4.1	4.9	11	17	23	32	38	55	99	526K	125	1874
2400-2	60KC	6	1	NO	2400-2	90	1.3	1.6	2.1	3.6	4.2	8.6	15	19	27	32	42	71	1053K	125	1872
2400-2	60KC	10	1	NO	2400-2	90	1.5	1.8	2.3	3.2	3.7	7.4	13	16	20	27	36	59	2083K	125	1869
2400-3	90KC	3	1	NO	2400-3	90	1.1	1.3	2.1	3.6	4.4	9.9	16	21	29	35	51	CE	263K	125	1874
2400-3	90KC	4	1	NO	2400-3	90	1.2	1.3	1.7	3.1	3.6	7.2	12	16	22	26	38	67	526K	125	1874
2400-3	90KC	6	1	NO	2400-3	90	1.2	1.4	1.8	2.8	3.2	6.2	10	13	18	22	28	48	1053K	125	1872
2400-3	90KC	10	1	NO	2400-3	90	1.4	1.6	2.0	2.6	2.9	5.4	8.8	12	14	19	25	41	2083K	125	1869
2311	156KC	1	1	NO	2311	30	1.1	1.3	1.7	2.5	2.9	4.9	CE	CE	CE	CE	CE	CE	56K	45	2019
2311	156KC	2	1	NO	2311	30	1.1	1.3	1.7	2.5	2.9	4.9	13	16	CE	CE	CE	CE	113K	45	2019
2311	156KC	3	1	NO	2311	30	1.1	1.2	1.5	2.1	2.4	3.8	11	14	18	21	CE	CE	170K	45	2019
2311	156KC	4	1	NO	2311	30	1.1	1.3	1.6	2.1	2.4	3.9	11	14	18	21	27	CE	255K	45	2018
2301	1200KC	1	1	NO	2301	120	0.9	1.0	1.0	1.3	1.4	CE	CE	CE	CE	CE	CE	CE	30K	250	1577
2301	1200KC	2	1	NO	2301	120	1.0	1.0	1.0	1.3	1.4	1.8	CE	CE	CE	CE	CE	CE	60K	250	1577
2301	1200KC	3	1	NO	2301	120	1.0	1.0	1.1	1.3	1.4	1.8	2.2	CE	CE	CE	CE	CE	91K	250	1577
2301	1200KC	4	1	NO	2301	120	1.0	1.0	1.1	1.4	1.5	1.9	2.3	2.7	3.1	CE	CE	CE	136K	250	1576
2400-2	60KC	3	2	NO	2400-2	90	1.1	1.3	2.2	3.8	5.2	11	18	23	31	37	54	CE	263K	125	1764
2400-2	60KC	4	2	NO	2400-2	90	1.1	1.4	1.7	3.3	3.8	7.6	13	17	23	27	40	72	526K	125	1764
2400-2	60KC	6	2	NO	2400-2	90	1.2	1.4	1.8	3.0	3.4	6.8	11	14	20	24	31	48	1053K	125	1852
2400-2	60KC	10	2	NO	2400-2	90	1.4	1.6	2.0	2.8	3.2	6.0	8.6	13	17	21	27	39	2015K	125	1795
2400-3	90KC	3	2	NO	2400-3	90	1.1	1.2	1.8	2.9	3.8	7.4	12	16	21	25	37	CE	263K	125	1764
2400-3	90KC	4	2	NO	2400-3	90	1.1	1.2	1.5	2.6	2.9	5.5	8.7	12	16	19	27	49	526K	125	1764
2400-3	90KC	6	2	NO	2400-3	90	1.2	1.3	1.6	2.4	2.7	4.9	7.5	9.8	14	17	22	33	1053K	125	1852
2400-3	90KC	10	2	NO	2400-3	90	1.4	1.5	1.7	2.3	2.6	4.5	6.2	8.9	12	14	19	27	2015K	125	1795
2311	156KC	2	2	NO	2311	30	1.1	1.3	1.6	2.3	2.6	4.3	11	14	CE	CE	CE	CE	113K	45	1992
2311	156KC	3	2	NO	2311	30	1.0	1.1	1.3	1.6	1.8	2.6	7.9	11	13	15	CE	CE	170K	45	1992
2311	156KC	4	2	NO	2311	30	1.1	1.2	1.3	1.7	1.8	2.7	8.0	11	13	15	20	CE	255K	45	1991
2301	1200KC	2	2	NO	2301	120	1.0	1.0	1.0	1.3	1.3	1.7	CE	CE	CE	CE	CE	CE	60K	250	1577
2301	1200KC	3	2	NO	2301	120	1.0	1.0	1.0	1.3	1.4	1.7	2.1	CE	CE	CE	CE	CE	91K	250	1577
2301	1200KC	4	2	NO	2301	120	1.0	1.0	1.1	1.3	1.4	1.8	2.1	2.5	2.8	CE	CE	CE	136K	250	1576
2400-2	60KC	3	2	YES	2400-2	90	1.1	1.3	2.0	3.3	4.3	8.7	14	19	25	30	44	CE	263K	125	1764
2400-2	60KC	4	2	YES	2400-2	90	1.1	1.3	1.6	2.9	3.3	6.4	11	14	19	22	33	58	526K	125	1764
2400-2	60KC	6	2	YES	2400-2	90	1.2	1.4	1.7	2.6	2.9	5.5	8.8	12	16	19	25	42	1053K	125	1852
2400-2	60KC	10	2	YES	2400-2	90	1.4	1.6	1.9	2.4	2.7	4.9	7.8	9.9	13	17	22	36	2015K	125	1795
2400-3	90KC	3	2	YES	2400-3	90	1.0	1.2	1.6	2.5	3.2	6.1	9.7	13	18	21	30	CE	263K	125	1764
2400-3	90KC	4	2	YES	2400-3	90	1.1	1.2	1.4	2.3	2.6	4.6	7.2	9.4	13	15	22	39	526K	125	1764
2400-3	90KC	6	2	YES	2400-3	90	1.2	1.3	1.5	2.1	2.3	4.1	6.3	8.0	11	13	17	29	1053K	125	1852
2400-3	90KC	10	2	YES	2400-3	90	1.4	1.5	1.7	2.1	2.2	3.7	5.7	7.1	8.9	12	15	25	2015K	125	1795

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.4	3.0	5.9	15	18	43	70	92	CE	CE	CE	CE	105K	50	808
2400-2	60KC	4	1	NO	2400-2	35	1.5	2.6	4.9	11	13	31	46	68	96	130	190	CE	200K	50	817
2400-2	60KC	6	1	NO	2400-2	35	1.6	2.3	4.2	8.6	11	24	39	57	73	90	130	210	421K	50	807
2400-2	60KC	10	1	NO	2400-2	35	1.8	2.5	3.7	7.4	8.9	20	34	44	61	73	110	170	842K	50	806
2400-3	90KC	3	1	NO	2400-3	35	1.3	2.4	4.3	9.8	12	29	47	62	CE	CE	CE	CE	105K	50	808
2400-3	90KC	4	1	NO	2400-3	35	1.3	2.1	3.6	7.1	8.9	21	31	46	65	83	130	CE	200K	50	817
2400-3	90KC	6	1	NO	2400-3	35	1.4	1.9	3.2	6.1	7.4	16	26	39	49	61	88	140	421K	50	807
2400-3	90KC	10	1	NO	2400-3	35	1.6	2.1	2.9	5.4	6.4	14	23	30	41	49	72	120	842K	50	806
2311	156KC	1	1	NO	2311	15	1.3	1.9	2.8	4.8	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	865
2311	156KC	2	1	NO	2311	15	1.3	1.9	2.9	4.8	5.7	CE	CE	CE	CE	CE	CE	CE	45K	18	865
2311	156KC	3	1	NO	2311	15	1.2	1.6	2.3	3.7	4.4	17	CE	CE	CE	CE	CE	CE	68K	18	865
2311	156KC	4	1	NO	2311	15	1.3	1.7	2.4	3.7	4.4	17	25	33	CE	CE	CE	CE	102K	18	865
2301	1200KC	1	1	NO	2301	50	1.0	1.0	1.3	CE	CE	CE	CE	CE	CE	CE	CE	CE	12K	100	676
2301	1200KC	2	1	NO	2301	50	1.0	1.0	1.3	1.7	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	676
2301	1200KC	3	1	NO	2301	50	1.0	1.1	1.4	1.7	1.9	CE	CE	CE	CE	CE	CE	CE	36K	100	676
2301	1200KC	4	1	NO	2301	50	1.0	1.1	1.4	1.8	1.9	2.8	CE	CE	CE	CE	CE	CE	54K	100	676
2400-2	60KC	3	2	NO	2400-2	35	1.3	2.5	4.6	11	13	31	51	67	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	NO	2400-2	35	1.4	2.2	3.8	7.6	11	23	34	50	76	94	140	CE	210K	50	782
2400-2	60KC	6	2	NO	2400-2	35	1.4	2.0	3.4	6.7	8.2	19	29	40	49	68	91	150	421K	50	759
2400-2	60KC	10	2	NO	2400-2	35	1.6	2.1	3.1	6.0	7.1	16	25	33	41	48	65	120	835K	50	770
2400-3	90KC	3	2	NO	2400-3	35	1.2	2.0	3.4	7.3	8.9	21	34	45	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	NO	2400-3	35	1.2	1.8	2.9	5.4	7.4	16	23	34	51	63	91	CE	210K	50	782
2400-3	90KC	6	2	NO	2400-3	35	1.3	1.7	2.7	4.9	5.9	13	20	27	34	46	62	99	421K	50	759
2400-3	90KC	10	2	NO	2400-3	35	1.5	1.8	2.5	4.5	5.2	11	17	23	28	33	44	78	835K	50	770
2311	156KC	2	2	NO	2311	15	1.3	1.7	2.5	4.1	4.9	CE	CE	CE	CE	CE	CE	CE	45K	18	851
2311	156KC	3	2	NO	2311	15	1.1	1.3	1.7	2.5	2.9	13	CE	CE	CE	CE	CE	CE	68K	18	851
2311	156KC	4	2	NO	2311	15	1.1	1.4	1.8	2.5	2.9	13	18	24	CE	CE	CE	CE	102K	18	850
2301	1200KC	2	2	NO	2301	50	1.0	1.0	1.3	1.6	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	676
2301	1200KC	3	2	NO	2301	50	1.0	1.0	1.3	1.6	1.8	CE	CE	CE	CE	CE	CE	CE	36K	100	676
2301	1200KC	4	2	NO	2301	50	1.0	1.1	1.4	1.7	1.8	2.6	CE	CE	CE	CE	CE	CE	54K	100	676
2400-2	60KC	3	2	YES	2400-2	35	1.3	2.2	3.9	8.6	11	25	41	54	CE	CE	CE	CE	105K	50	782
2400-2	60KC	4	2	YES	2400-2	35	1.3	2.0	3.3	6.3	8.7	19	28	40	61	76	110	CE	210K	50	782
2400-2	60KC	6	2	YES	2400-2	35	1.4	1.8	2.9	5.5	6.7	15	23	34	43	53	77	120	421K	50	759
2400-2	60KC	10	2	YES	2400-2	35	1.6	2.0	2.7	4.9	5.8	12	20	27	36	43	64	98	835K	50	770
2400-3	90KC	3	2	YES	2400-3	35	1.2	1.8	2.9	6.1	7.4	17	28	37	CE	CE	CE	CE	105K	50	782
2400-3	90KC	4	2	YES	2400-3	35	1.2	1.7	2.6	4.6	6.2	13	19	27	41	51	74	CE	210K	50	782
2400-3	90KC	6	2	YES	2400-3	35	1.3	1.6	2.3	4.1	4.8	11	16	23	29	36	52	79	421K	50	759
2400-3	90KC	10	2	YES	2400-3	35	1.5	1.8	2.2	3.7	4.3	8.5	14	18	25	30	43	66	835K	50	770

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	3.0	8.1	18	43	53	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-2	60KC	4	1	NO	2400-2	20	2.6	5.8	13	31	39	94	170	CE	CE	CE	CE	CE	81K	20	326
2400-2	60KC	6	1	NO	2400-2	20	2.3	4.9	11	23	32	72	120	170	230	280	CE	CE	162K	20	326
2400-2	60KC	10	1	NO	2400-2	20	2.5	4.2	8.8	20	28	60	90	140	180	210	290	470	337K	20	320
2400-3	90KC	3	1	NO	2400-3	20	2.3	5.7	12	29	36	CE	CE	CE	CE	CE	CE	CE	42K	20	321
2400-3	90KC	4	1	NO	2400-3	20	2.1	4.2	8.8	21	26	63	120	CE	CE	CE	CE	CE	81K	20	326
2400-3	90KC	6	1	NO	2400-3	20	1.9	3.7	7.3	16	22	49	75	120	150	190	CE	CE	162K	20	326
2400-3	90KC	10	1	NO	2400-3	20	2.1	3.3	6.3	14	19	41	61	88	120	140	190	320	337K	20	320
2311	156KC	1	1	NO	2311	6	1.9	3.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	356
2311	156KC	2	1	NO	2311	6	1.9	3.4	5.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	356
2311	156KC	3	1	NO	2311	6	1.6	2.7	4.4	17	21	CE	CE	CE	CE	CE	CE	CE	26K	7	356
2311	156KC	4	1	NO	2311	6	1.7	2.7	4.4	17	21	CE	CE	CE	CE	CE	CE	CE	39K	7	356
2301	1200KC	1	1	NO	2301	25	1.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	4K	40	273
2301	1200KC	2	1	NO	2301	25	1.0	1.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	273
2301	1200KC	3	1	NO	2301	25	1.0	1.4	1.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	273
2301	1200KC	4	1	NO	2301	25	1.1	1.5	1.9	2.7	CE	CE	CE	CE	CE	CE	CE	CE	21K	40	273
2400-2	60KC	3	2	NO	2400-2	20	2.5	6.1	13	31	38	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	NO	2400-2	20	2.2	4.6	11	23	28	75	130	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	NO	2400-2	20	2.0	4.0	8.2	19	25	49	85	130	170	210	CE	CE	168K	20	301
2400-2	60KC	10	2	NO	2400-2	20	2.1	3.6	7.1	16	21	40	59	96	120	150	220	360	333K	20	302
2400-3	90KC	3	2	NO	2400-3	20	2.0	4.4	8.9	21	26	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	NO	2400-3	20	1.8	3.4	7.3	16	19	51	85	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	NO	2400-3	20	1.7	3.0	5.9	13	17	34	57	81	110	140	CE	CE	168K	20	301
2400-3	90KC	10	2	NO	2400-3	20	1.8	2.8	5.2	11	15	28	40	65	80	96	150	240	333K	20	302
2311	156KC	2	2	NO	2311	6	1.7	3.0	5.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	351
2311	156KC	3	2	NO	2311	6	1.3	1.9	2.9	13	16	CE	CE	CE	CE	CE	CE	CE	26K	7	351
2311	156KC	4	2	NO	2311	6	1.4	2.0	2.9	13	16	CE	CE	CE	CE	CE	CE	CE	39K	7	350
2301	1200KC	2	2	NO	2301	25	1.0	1.3	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	273
2301	1200KC	3	2	NO	2301	25	1.0	1.4	1.7	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	273
2301	1200KC	4	2	NO	2301	25	1.1	1.4	1.8	2.5	CE	CE	CE	CE	CE	CE	CE	CE	21K	40	273
2400-2	60KC	3	2	YES	2400-2	20	2.2	5.1	11	25	31	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-2	60KC	4	2	YES	2400-2	20	1.9	3.9	8.7	19	23	61	110	CE	CE	CE	CE	CE	84K	20	301
2400-2	60KC	6	2	YES	2400-2	20	1.8	3.3	6.7	15	20	43	71	96	130	170	CE	CE	168K	20	301
2400-2	60KC	10	2	YES	2400-2	20	2.0	3.0	5.7	12	17	36	53	78	110	130	170	280	333K	20	302
2400-3	90KC	3	2	YES	2400-3	20	1.8	3.8	7.3	17	21	CE	CE	CE	CE	CE	CE	CE	42K	20	301
2400-3	90KC	4	2	YES	2400-3	20	1.6	3.0	6.1	13	16	41	68	CE	CE	CE	CE	CE	84K	20	301
2400-3	90KC	6	2	YES	2400-3	20	1.6	2.6	4.8	11	14	29	48	65	86	110	CE	CE	168K	20	301
2400-3	90KC	10	2	YES	2400-3	20	1.8	2.5	4.3	8.4	12	25	36	52	69	83	120	190	333K	20	302

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	350	1.0	1.1	1.2	1.5	1.6	2.7	4.2	6.1	7.3	8.6	13	22	1053K	500	12080
2400-2	60KC	4	1	NO	2400-2	350	1.1	1.1	1.3	1.5	1.7	2.3	3.5	4.3	6.1	7.1	11	16	2106K	500	12078
2400-2	60KC	6	1	NO	2400-2	350	1.2	1.2	1.4	1.6	1.7	2.4	3.0	3.6	5.1	5.9	7.5	13	4213K	500	12073
2400-2	60KC	10	1	NO	2400-2	350	1.3	1.4	1.6	1.8	1.9	2.6	3.2	3.8	4.5	5.1	6.4	11	8427K	500	12064
2400-3	90KC	3	1	NO	2400-3	350	1.0	1.1	1.1	1.3	1.4	2.1	3.2	4.5	5.3	6.2	9.1	15	1053K	500	12080
2400-3	90KC	4	1	NO	2400-3	350	1.1	1.1	1.2	1.4	1.5	1.9	2.7	3.3	4.5	5.2	7.5	11	2106K	500	12078
2400-3	90KC	6	1	NO	2400-3	350	1.1	1.2	1.3	1.5	1.6	2.0	2.4	2.9	3.9	4.4	5.5	9.1	4213K	500	12073
2400-3	90KC	10	1	NO	2400-3	350	1.3	1.4	1.5	1.7	1.7	2.2	2.6	3.1	3.5	3.9	4.8	7.9	8427K	500	12064
2311	156KC	1	1	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.9	2.4	2.9	3.4	3.9	4.9	CE	228K	181	12488
2311	156KC	2	1	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.9	2.4	2.9	3.4	3.9	4.9	6.9	457K	181	12488
2311	156KC	3	1	NO	2311	125	1.0	1.0	1.1	1.2	1.3	1.7	2.0	2.4	2.8	3.1	3.9	5.3	686K	181	12488
2311	156KC	4	1	NO	2311	125	1.0	1.1	1.1	1.3	1.3	1.7	2.1	2.4	2.8	3.2	3.9	5.4	1029K	181	12485
2301	1200KC	1	1	NO	2301	200	0.9	1.0	1.0	1.0	1.1	1.2	1.4	1.6	CE	CE	CE	CE	123K	1000	11371
2301	1200KC	2	1	NO	2301	200	0.9	1.0	1.0	1.1	1.1	1.3	1.4	1.6	1.7	1.9	2.2	CE	247K	1000	11371
2301	1200KC	3	1	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.4	1.6	1.8	1.9	2.2	2.9	370K	1000	11371
2301	1200KC	4	1	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.3	1.5	1.6	1.8	1.9	2.3	2.9	556K	1000	11368
2400-2	60KC	3	2	NO	2400-2	350	1.0	1.1	1.1	1.3	1.4	2.2	3.3	4.6	5.5	6.4	9.5	16	1053K	500	11754
2400-2	60KC	4	2	NO	2400-2	350	1.0	1.1	1.2	1.4	1.4	1.9	2.8	3.4	4.6	5.3	7.8	12	2106K	500	11752
2400-2	60KC	6	2	NO	2400-2	350	1.1	1.2	1.3	1.4	1.5	2.0	2.5	3.0	4.1	4.7	6.0	9.8	4213K	500	11747
2400-2	60KC	10	2	NO	2400-2	350	1.3	1.4	1.4	1.6	1.7	2.1	2.6	3.0	3.7	4.2	5.1	8.6	8427K	500	11738
2400-3	90KC	3	2	NO	2400-3	350	1.0	1.0	1.1	1.2	1.3	1.8	2.5	3.5	4.1	4.7	6.7	11	1053K	500	11754
2400-3	90KC	4	2	NO	2400-3	350	1.0	1.1	1.1	1.2	1.3	1.6	2.2	2.6	3.5	4.0	5.6	7.9	2106K	500	11752
2400-3	90KC	6	2	NO	2400-3	350	1.1	1.2	1.2	1.3	1.4	1.7	2.1	2.4	3.2	3.6	4.4	7.0	4213K	500	11747
2400-3	90KC	10	2	NO	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.9	2.2	2.5	2.9	3.3	3.9	6.3	8427K	500	11738
2311	156KC	2	2	NO	2311	125	1.0	1.0	1.1	1.3	1.4	1.8	2.2	2.6	3.0	3.4	4.3	5.9	457K	181	12407
2311	156KC	3	2	NO	2311	125	1.0	1.0	1.0	1.1	1.2	1.4	1.6	1.8	2.0	2.2	2.6	3.5	686K	181	12407
2311	156KC	4	2	NO	2311	125	1.0	1.0	1.1	1.2	1.2	1.4	1.6	1.8	2.0	2.3	2.7	3.5	1029K	181	12404
2301	1200KC	2	2	NO	2301	200	0.9	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.2	CE	247K	1000	11241
2301	1200KC	3	2	NO	2301	200	1.0	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.7	2.3	2.9	370K	1000	11241
2301	1200KC	4	2	NO	2301	200	1.0	1.0	1.0	1.1	1.1	1.2	1.3	1.5	1.6	1.7	2.3	3.0	556K	1000	11238
2400-2	60KC	3	2	YES	2400-2	350	1.0	1.0	1.1	1.3	1.3	1.9	2.8	3.9	4.6	5.3	7.7	13	1053K	500	11754
2400-2	60KC	4	2	YES	2400-2	350	1.0	1.1	1.2	1.3	1.4	1.7	2.4	2.9	3.9	4.5	6.4	9.1	2106K	500	11752
2400-2	60KC	6	2	YES	2400-2	350	1.1	1.2	1.3	1.4	1.5	1.8	2.2	2.5	3.4	3.9	4.8	7.7	4213K	500	11747
2400-2	60KC	10	2	YES	2400-2	350	1.3	1.4	1.4	1.6	1.7	2.0	2.4	2.7	3.1	3.4	4.2	6.7	8427K	500	11738
2400-3	90KC	3	2	YES	2400-3	350	1.0	1.0	1.1	1.2	1.2	1.6	2.2	2.9	3.4	3.9	5.5	8.8	1053K	500	11754
2400-3	90KC	4	2	YES	2400-3	350	1.0	1.1	1.1	1.2	1.3	1.5	2.0	2.3	3.0	3.4	4.7	6.5	2106K	500	11752
2400-3	90KC	6	2	YES	2400-3	350	1.1	1.2	1.2	1.3	1.4	1.6	1.8	2.1	2.7	3.0	3.6	5.6	4213K	500	11747
2400-3	90KC	10	2	YES	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.8	2.0	2.3	2.5	2.8	3.2	5.0	8427K	500	11738

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	90	1.2	1.5	1.9	3.6	5.1	11	19	28	34	46	61	CE	263K	125	4080
2400-2	60KC	4	1	NO	2400-2	90	1.2	1.5	2.0	2.9	4.2	8.7	15	20	28	33	44	85	526K	125	4080
2400-2	60KC	6	1	NO	2400-2	90	1.3	1.6	2.1	3.0	3.5	7.3	13	16	20	28	37	71	1053K	125	4078
2400-2	60KC	10	1	NO	2400-2	90	1.5	1.8	2.3	3.2	3.7	6.1	8.7	14	17	24	31	57	2106K	125	4075
2400-3	90KC	3	1	NO	2400-3	90	1.1	1.3	1.6	2.8	3.7	7.6	13	19	24	31	41	CE	263K	125	4080
2400-3	90KC	4	1	NO	2400-3	90	1.2	1.3	1.7	2.3	3.1	6.2	11	14	19	23	30	58	526K	125	4080
2400-3	90KC	6	1	NO	2400-3	90	1.2	1.4	1.8	2.4	2.7	5.3	8.7	12	14	19	25	48	1053K	125	4078
2400-3	90KC	10	1	NO	2400-3	90	1.4	1.6	2.0	2.6	2.9	4.5	6.3	9.5	12	17	21	39	2106K	125	4075
2311	156KC	1	1	NO	2311	30	1.1	1.3	1.7	2.5	2.9	4.9	CE	CE	CE	CE	CE	CE	56K	45	4225
2311	156KC	2	1	NO	2311	30	1.1	1.3	1.7	2.5	2.9	4.9	6.8	8.8	CE	CE	CE	CE	113K	45	4225
2311	156KC	3	1	NO	2311	30	1.1	1.2	1.5	2.1	2.4	3.8	5.3	6.7	8.2	21	CE	CE	170K	45	4225
2311	156KC	4	1	NO	2311	30	1.1	1.3	1.6	2.1	2.4	3.9	5.3	6.8	8.2	21	27	CE	256K	45	4224
2301	1200KC	1	1	NO	2301	120	0.9	1.0	1.0	1.1	1.2	CE	CE	CE	CE	CE	CE	CE	31K	250	3783
2301	1200KC	2	1	NO	2301	120	1.0	1.0	1.0	1.2	1.2	1.5	CE	CE	CE	CE	CE	CE	62K	250	3783
2301	1200KC	3	1	NO	2301	120	1.0	1.0	1.1	1.2	1.2	1.5	1.8	CE	CE	CE	CE	CE	93K	250	3783
2301	1200KC	4	1	NO	2301	120	1.0	1.0	1.1	1.2	1.3	1.5	1.8	2.1	3.1	CE	CE	CE	139K	250	3782
2400-2	60KC	3	2	NO	2400-2	90	1.1	1.3	1.7	3.3	3.9	8.1	14	20	25	34	44	CE	263K	125	3970
2400-2	60KC	4	2	NO	2400-2	90	1.1	1.4	1.7	2.4	3.3	6.6	11	15	20	24	32	62	526K	125	3969
2400-2	60KC	6	2	NO	2400-2	90	1.2	1.4	1.8	2.5	2.9	5.7	9.5	13	16	20	26	47	1053K	125	3968
2400-2	60KC	10	2	NO	2400-2	90	1.4	1.6	2.0	2.7	3.0	5.0	8.3	11	13	16	21	39	2106K	125	3965
2400-3	90KC	3	2	NO	2400-3	90	1.1	1.2	1.4	2.6	3.0	5.7	9.3	14	17	23	30	CE	263K	125	3970
2400-3	90KC	4	2	NO	2400-3	90	1.1	1.2	1.5	1.9	2.5	4.8	7.6	9.8	14	17	22	42	526K	125	3969
2400-3	90KC	6	2	NO	2400-3	90	1.2	1.3	1.6	2.0	2.3	4.2	6.8	8.6	11	14	18	32	1053K	125	3968
2400-3	90KC	10	2	NO	2400-3	90	1.4	1.5	1.7	2.2	2.4	3.8	6.0	7.6	9.1	11	15	27	2106K	125	3965
2311	156KC	2	2	NO	2311	30	1.1	1.3	1.6	2.3	2.6	4.3	6.0	7.6	CE	CE	CE	CE	113K	45	4198
2311	156KC	3	2	NO	2311	30	1.0	1.1	1.3	1.6	1.8	2.6	3.5	4.3	5.2	15	CE	CE	170K	45	4198
2311	156KC	4	2	NO	2311	30	1.1	1.2	1.3	1.7	1.8	2.7	3.5	4.4	5.2	15	20	CE	256K	45	4197
2301	1200KC	2	2	NO	2301	120	0.9	1.0	1.0	1.1	1.1	1.3	CE	CE	CE	CE	CE	CE	62K	250	3677
2301	1200KC	3	2	NO	2301	120	1.0	1.0	1.0	1.1	1.1	1.3	1.7	CE	CE	CE	CE	CE	93K	250	3677
2301	1200KC	4	2	NO	2301	120	1.0	1.0	1.0	1.1	1.1	1.3	1.8	2.0	2.3	CE	CE	CE	139K	250	3676
2400-2	60KC	3	2	YES	2400-2	90	1.1	1.3	1.5	2.9	3.4	6.7	11	17	21	27	36	CE	263K	125	3970
2400-2	60KC	4	2	YES	2400-2	90	1.1	1.3	1.6	2.1	2.9	5.5	9.0	12	17	20	26	50	526K	125	3969
2400-2	60KC	6	2	YES	2400-2	90	1.2	1.4	1.7	2.2	2.5	4.7	7.6	9.8	12	17	22	42	1053K	125	3968
2400-2	60KC	10	2	YES	2400-2	90	1.4	1.6	1.9	2.4	2.7	4.1	6.6	8.4	11	15	19	34	2106K	125	3965
2400-3	90KC	3	2	YES	2400-3	90	1.0	1.2	1.3	2.3	2.6	4.8	7.7	12	14	19	24	CE	263K	125	3970
2400-3	90KC	4	2	YES	2400-3	90	1.1	1.2	1.4	1.8	2.3	4.0	6.3	8.1	12	14	18	34	526K	125	3969
2400-3	90KC	6	2	YES	2400-3	90	1.2	1.3	1.5	1.9	2.0	3.5	5.5	6.9	8.4	12	15	28	1053K	125	3968
2400-3	90KC	10	2	YES	2400-3	90	1.4	1.5	1.7	2.1	2.2	3.2	4.9	6.0	7.2	9.9	13	23	2106K	125	3965

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	35	1.4	2.2	5.0	11	16	34	57	84	CE	CE	CE	CE	105K	50	1757
2400-2	60KC	4	1	NO	2400-2	35	1.5	2.2	4.1	8.7	11	24	41	61	87	120	170	CE	210K	50	1757
2400-2	60KC	6	1	NO	2400-2	35	1.6	2.3	3.5	7.2	8.7	20	34	45	73	85	120	190	421K	50	1756
2400-2	60KC	10	1	NO	2400-2	35	1.8	2.5	3.7	6.1	7.3	17	29	38	58	73	96	150	842K	50	1755
2400-3	90KC	3	1	NO	2400-3	35	1.3	1.8	3.7	7.5	11	23	39	57	CE	CE	CE	CE	105K	50	1757
2400-3	90KC	4	1	NO	2400-3	35	1.3	1.8	3.1	6.2	7.4	17	28	41	59	76	120	CE	210K	50	1757
2400-3	90KC	6	1	NO	2400-3	35	1.4	1.9	2.7	5.2	6.2	14	23	31	49	57	80	130	421K	50	1756
2400-3	90KC	10	1	NO	2400-3	35	1.6	2.1	2.9	4.5	5.3	12	20	26	40	49	65	97	842K	50	1755
2311	156KC	1	1	NO	2311	15	1.3	1.9	2.8	4.8	CE	CE	CE	CE	CE	CE	CE	CE	22K	18	1814
2311	156KC	2	1	NO	2311	15	1.3	1.9	2.9	4.8	5.7	CE	CE	CE	CE	CE	CE	CE	45K	18	1814
2311	156KC	3	1	NO	2311	15	1.2	1.6	2.3	3.7	4.4	7.8	CE	CE	CE	CE	CE	CE	68K	18	1814
2311	156KC	4	1	NO	2311	15	1.3	1.7	2.4	3.7	4.4	7.8	25	33	CE	CE	CE	CE	102K	18	1814
2301	1200KC	1	1	NO	2301	50	1.0	1.0	1.1	CE	CE	CE	CE	CE	CE	CE	CE	CE	12K	100	1626
2301	1200KC	2	1	NO	2301	50	1.0	1.0	1.2	1.4	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	1626
2301	1200KC	3	1	NO	2301	50	1.0	1.1	1.2	1.4	1.5	CE	CE	CE	CE	CE	CE	CE	37K	100	1626
2301	1200KC	4	1	NO	2301	50	1.0	1.1	1.2	1.4	1.5	2.8	CE	CE	CE	CE	CE	CE	55K	100	1625
2400-2	60KC	3	2	NO	2400-2	35	1.3	1.8	3.9	8.0	12	25	41	61	CE	CE	CE	CE	105K	50	1710
2400-2	60KC	4	2	NO	2400-2	35	1.4	1.9	3.3	6.6	7.9	18	30	45	63	82	120	CE	210K	50	1709
2400-2	60KC	6	2	NO	2400-2	35	1.4	2.0	2.8	5.7	6.8	15	25	34	49	58	77	140	421K	50	1709
2400-2	60KC	10	2	NO	2400-2	35	1.6	2.1	3.0	5.0	5.9	13	20	30	41	48	64	94	842K	50	1707
2400-3	90KC	3	2	NO	2400-3	35	1.2	1.5	3.0	5.7	7.9	17	28	41	CE	CE	CE	CE	105K	50	1710
2400-3	90KC	4	2	NO	2400-3	35	1.2	1.6	2.5	4.7	5.7	12	20	30	43	55	80	CE	210K	50	1709
2400-3	90KC	6	2	NO	2400-3	35	1.3	1.7	2.2	4.2	4.9	11	17	23	33	40	52	93	421K	50	1709
2400-3	90KC	10	2	NO	2400-3	35	1.5	1.8	2.4	3.8	4.4	9.1	14	20	28	33	43	64	842K	50	1707
2311	156KC	2	2	NO	2311	15	1.3	1.7	2.5	4.1	4.9	CE	CE	CE	CE	CE	CE	CE	45K	18	1800
2311	156KC	3	2	NO	2311	15	1.1	1.3	1.7	2.5	2.9	4.8	CE	CE	CE	CE	CE	CE	68K	18	1800
2311	156KC	4	2	NO	2311	15	1.1	1.4	1.8	2.5	2.9	4.9	18	24	CE	CE	CE	CE	102K	18	1800
2301	1200KC	2	2	NO	2301	50	1.0	1.0	1.1	1.2	CE	CE	CE	CE	CE	CE	CE	CE	24K	100	1578
2301	1200KC	3	2	NO	2301	50	1.0	1.0	1.1	1.2	1.5	CE	CE	CE	CE	CE	CE	CE	37K	100	1578
2301	1200KC	4	2	NO	2301	50	1.0	1.0	1.1	1.2	1.6	2.1	CE	CE	CE	CE	CE	CE	55K	100	1578
2400-2	60KC	3	2	YES	2400-2	35	1.3	1.7	3.4	6.7	9.3	20	34	49	CE	CE	CE	CE	105K	50	1710
2400-2	60KC	4	2	YES	2400-2	35	1.3	1.7	2.8	5.5	6.6	15	24	36	51	66	96	CE	210K	50	1709
2400-2	60KC	6	2	YES	2400-2	35	1.4	1.8	2.5	4.7	5.6	12	21	27	43	50	70	110	421K	50	1709
2400-2	60KC	10	2	YES	2400-2	35	1.6	2.0	2.7	4.1	4.8	11	16	23	35	43	57	84	842K	50	1707
2400-3	90KC	3	2	YES	2400-3	35	1.2	1.4	2.6	4.8	6.5	14	23	33	CE	CE	CE	CE	105K	50	1710
2400-3	90KC	4	2	YES	2400-3	35	1.2	1.5	2.3	4.0	4.8	9.8	17	25	35	45	65	CE	210K	50	1709
2400-3	90KC	6	2	YES	2400-3	35	1.3	1.6	2.0	3.5	4.1	8.3	14	18	29	34	47	74	421K	50	1709
2400-3	90KC	10	2	YES	2400-3	35	1.5	1.8	2.2	3.2	3.6	7.2	12	16	24	29	38	57	842K	50	1707

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-2	60KC	3	1	NO	2400-2	20	2.1	6.0	16	34	47	CE	CE	CE	CE	CE	CE	CE	42K	20	712
2400-2	60KC	4	1	NO	2400-2	20	2.2	4.9	11	24	34	87	150	CE	CE	CE	CE	CE	84K	20	712
2400-2	60KC	6	1	NO	2400-2	20	2.3	4.0	8.6	20	28	72	120	150	200	250	CE	CE	168K	20	712
2400-2	60KC	10	1	NO	2400-2	20	2.5	4.2	7.2	17	21	58	90	120	150	180	250	410	337K	20	736
2400-3	90KC	3	1	NO	2400-3	20	1.8	4.3	11	23	32	CE	CE	CE	CE	CE	CE	CE	42K	20	712
2400-3	90KC	4	1	NO	2400-3	20	1.8	3.6	7.4	16	23	59	96	CE	CE	CE	CE	CE	84K	20	712
2400-3	90KC	6	1	NO	2400-3	20	1.9	3.1	6.2	14	20	49	75	99	140	170	CE	CE	168K	20	712
2400-3	90KC	10	1	NO	2400-3	20	2.1	3.3	5.2	12	15	39	61	80	100	120	170	270	337K	20	736
2311	156KC	1	1	NO	2311	6	1.9	3.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	8K	7	748
2311	156KC	2	1	NO	2311	6	1.9	3.4	5.8	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	748
2311	156KC	3	1	NO	2311	6	1.6	2.7	4.4	7.8	21	CE	CE	CE	CE	CE	CE	CE	26K	7	748
2311	156KC	4	1	NO	2311	6	1.7	2.7	4.4	7.9	21	CE	CE	CE	CE	CE	CE	CE	39K	7	748
2301	1200KC	1	1	NO	2301	25	1.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	4K	40	665
2301	1200KC	2	1	NO	2301	25	1.0	1.2	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	665
2301	1200KC	3	1	NO	2301	25	1.0	1.2	1.4	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	665
2301	1200KC	4	1	NO	2301	25	1.1	1.2	1.5	2.7	CE	CE	CE	CE	CE	CE	CE	CE	22K	40	665
2400-2	60KC	3	2	NO	2400-2	20	1.8	4.6	12	25	35	CE	CE	CE	CE	CE	CE	CE	42K	20	693
2400-2	60KC	4	2	NO	2400-2	20	1.9	3.8	7.9	18	25	63	110	CE	CE	CE	CE	CE	84K	20	693
2400-2	60KC	6	2	NO	2400-2	20	1.9	3.3	6.8	15	21	49	72	110	150	190	CE	CE	168K	20	692
2400-2	60KC	10	2	NO	2400-2	20	2.1	3.4	5.8	13	17	40	59	78	97	120	190	300	337K	20	692
2400-3	90KC	3	2	NO	2400-3	20	1.5	3.4	7.8	17	24	CE	CE	CE	CE	CE	CE	CE	42K	20	693
2400-3	90KC	4	2	NO	2400-3	20	1.6	2.9	5.6	12	17	43	74	CE	CE	CE	CE	CE	84K	20	693
2400-3	90KC	6	2	NO	2400-3	20	1.7	2.6	4.9	11	14	33	49	73	97	130	CE	CE	168K	20	692
2400-3	90KC	10	2	NO	2400-3	20	1.8	2.7	4.3	9.0	12	27	40	53	66	78	130	200	337K	20	692
2311	156KC	2	2	NO	2311	6	1.7	3.0	5.0	CE	CE	CE	CE	CE	CE	CE	CE	CE	17K	7	742
2311	156KC	3	2	NO	2311	6	1.3	1.9	2.9	4.8	16	CE	CE	CE	CE	CE	CE	CE	26K	7	742
2311	156KC	4	2	NO	2311	6	1.4	2.0	2.9	4.9	16	CE	CE	CE	CE	CE	CE	CE	39K	7	742
2301	1200KC	2	2	NO	2301	25	1.0	1.1	CE	CE	CE	CE	CE	CE	CE	CE	CE	CE	9K	40	640
2301	1200KC	3	2	NO	2301	25	1.0	1.1	1.5	CE	CE	CE	CE	CE	CE	CE	CE	CE	14K	40	640
2301	1200KC	4	2	NO	2301	25	1.0	1.1	1.5	2.0	CE	CE	CE	CE	CE	CE	CE	CE	22K	40	640
2400-2	60KC	3	2	YES	2400-2	20	1.7	3.9	9.2	20	28	CE	CE	CE	CE	CE	CE	CE	42K	20	693
2400-2	60KC	4	2	YES	2400-2	20	1.7	3.3	6.5	14	20	51	89	CE	CE	CE	CE	CE	84K	20	693
2400-2	60KC	6	2	YES	2400-2	20	1.8	2.8	5.5	12	17	43	65	86	120	150	CE	CE	168K	20	692
2400-2	60KC	10	2	YES	2400-2	20	2.0	3.0	4.7	10	15	34	53	70	87	110	150	240	337K	20	692
2400-3	90KC	3	2	YES	2400-3	20	1.4	2.9	6.5	14	19	CE	CE	CE	CE	CE	CE	CE	42K	20	693
2400-3	90KC	4	2	YES	2400-3	20	1.5	2.5	4.7	9.7	14	35	60	CE	CE	CE	CE	CE	84K	20	693
2400-3	90KC	6	2	YES	2400-3	20	1.6	2.3	4.1	8.3	12	29	44	58	77	97	CE	CE	168K	20	692
2400-3	90KC	10	2	YES	2400-3	20	1.8	2.4	3.6	7.1	11	24	36	47	58	70	96	160	337K	20	692

The following tables contain preliminary, estimated total execution times of the sort/merge program when either the IBM 2314 Direct Access Storage Facility or the IBM 2400 Magnetic Tape Unit, Models 4, 5 and 6, is used for input, output and intermediate storage. For comparison, execution times appear for applications using the IBM 2400 Magnetic Tape Unit, Models 3, 5 and 6, for input and output, and the 2314 for intermediate storage. Please refer to Appendix C of this publication for an explanation of the assumptions made in producing these timings.

System/360 Model 30 times are based on a 1.5 microsecond memory cycle.

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER /CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	150	1.7	2.4	3.9	6.9	8.7	18	27	37	47	57	78	130	1647K	141	147
2400-4	60KC	5	1	NO	2400-4	100	1.8	2.3	3.2	5.3	6.6	13	19	26	32	40	53	85	3065K	109	209
2400-4	60KC	8	1	NO	2400-4	100	2.1	2.5	3.4	5.3	6.3	12	18	25	31	37	52	77	4268K	87	245
2400-5	120KC	3	1	NO	2400-5	150	1.7	2.3	3.6	6.1	7.7	15	24	33	40	49	67	110	1647K	141	147
2400-5	120KC	5	1	NO	2400-5	100	1.8	2.3	3.1	4.8	6.0	12	17	23	28	35	47	74	3065K	109	209
2400-5	120KC	8	1	NO	2400-5	100	2.0	2.5	3.3	4.9	5.8	11	16	22	27	32	46	67	4268K	87	245
2400-6	180KC	3	1	NO	2400-6	150	1.7	2.3	3.5	5.9	7.4	15	23	31	39	47	64	100	1647K	141	147
2400-6	180KC	5	1	NO	2400-6	100	1.8	2.2	3.0	4.7	5.8	11	16	22	27	34	45	71	3065K	109	209
2400-6	180KC	8	1	NO	2400-6	100	2.0	2.4	3.2	4.8	5.6	11	16	21	26	31	44	65	4268K	87	245
2400-4	60KC	3	2	NO	2400-4	80	1.7	2.3	3.5	6.3	7.5	16	24	32	42	50	70	110	1456K	93	190
2400-4	60KC	5	2	NO	2400-4	40	1.8	2.3	3.2	5.1	6.1	13	18	25	30	36	51	75	2588K	68	270
2400-4	60KC	8	2	NO	2400-4	40	2.0	2.5	3.4	5.3	6.2	12	17	22	27	33	47	69	3444K	52	292
2400-5	120KC	3	2	NO	2400-5	80	1.7	2.3	3.3	5.9	7.1	15	23	30	39	46	64	97	1456K	93	190
2400-5	120KC	5	2	NO	2400-5	40	1.8	2.3	3.1	4.8	5.7	12	17	23	28	33	47	70	2588K	68	270
2400-5	120KC	8	2	NO	2400-5	40	2.0	2.5	3.3	5.1	5.9	11	17	21	26	32	44	67	3444K	52	292
2400-6	180KC	3	2	NO	2400-6	80	1.7	2.3	3.3	5.8	6.9	15	22	29	38	45	63	95	1456K	93	190
2400-6	180KC	5	2	NO	2400-6	40	1.8	2.3	3.0	4.8	5.6	12	16	23	28	33	46	68	2588K	68	270
2400-6	180KC	8	2	NO	2400-6	40	2.0	2.5	3.3	5.0	5.8	11	16	21	26	32	43	66	3444K	52	292
2400-4	60KC	3	2	YES	2400-4	80	1.7	2.3	3.3	5.9	7.0	15	22	29	38	46	63	96	1456K	93	190
2400-4	60KC	5	2	YES	2400-4	40	1.8	2.3	3.0	4.8	5.6	11	16	22	28	33	46	68	2588K	68	270
2400-4	60KC	8	2	YES	2400-4	40	2.0	2.5	3.3	5.0	5.7	11	16	21	27	33	43	68	3444K	52	292
2400-5	120KC	3	2	YES	2400-5	80	1.7	2.2	3.3	5.7	6.8	14	22	28	37	44	61	92	1456K	93	190
2400-5	120KC	5	2	YES	2400-5	40	1.7	2.2	3.0	4.7	5.5	11	16	22	27	32	45	66	2588K	68	270
2400-5	120KC	8	2	YES	2400-5	40	2.0	2.5	3.2	4.9	5.6	11	16	20	26	32	42	66	3444K	52	292
2400-6	180KC	3	2	YES	2400-6	80	1.7	2.2	3.2	5.7	6.8	14	22	28	37	44	61	92	1456K	93	190
2400-6	180KC	5	2	YES	2400-6	40	1.7	2.2	3.0	4.7	5.5	11	16	22	27	31	44	65	2588K	68	270
2400-6	180KC	8	2	YES	2400-6	40	2.0	2.5	3.2	4.9	5.6	11	16	20	26	32	41	65	3444K	52	292

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	35	2.3	4.1	7.5	15	19	40	63	86	110	140	190	290	407K	34	45
2400-4	60KC	5	1	NO	2400-4	25	2.2	3.4	5.6	11	14	28	42	59	73	87	130	190	764K	27	70
2400-4	60KC	8	1	NO	2400-4	25	2.4	3.7	5.9	11	13	27	42	55	70	84	120	190	1053K	21	83
2400-5	120KC	3	1	NO	2400-5	35	2.1	3.4	5.9	12	15	30	46	63	80	99	140	210	407K	34	45
2400-5	120KC	5	1	NO	2400-5	25	2.1	3.0	4.6	8.2	11	22	32	44	55	66	93	140	764K	27	70
2400-5	120KC	8	1	NO	2400-5	25	2.3	3.3	4.9	8.6	11	21	32	42	53	64	89	140	1053K	21	83
2400-6	180KC	3	1	NO	2400-6	35	2.0	3.2	5.4	11	13	27	41	56	72	88	120	190	407K	34	45
2400-6	180KC	5	1	NO	2400-6	25	2.0	2.8	4.3	7.6	9.5	20	29	40	50	60	84	130	764K	27	70
2400-6	180KC	8	1	NO	2400-6	25	2.2	3.2	4.7	8.0	9.6	19	30	39	48	58	82	130	1053K	21	83
2400-4	60KC	3	2	NO	2400-4	20	2.1	3.4	6.1	12	15	31	48	65	83	100	140	220	362K	23	60
2400-4	60KC	5	2	NO	2400-4	15	2.1	3.2	5.2	9.4	12	23	34	45	61	72	95	160	647K	17	86
2400-4	60KC	8	2	NO	2400-4	15	2.3	3.4	4.7	8.5	10	21	30	39	47	56	84	130	861K	13	89
2400-5	120KC	3	2	NO	2400-5	20	2.0	3.1	5.3	9.8	13	26	40	55	69	84	120	190	362K	23	60
2400-5	120KC	5	2	NO	2400-5	15	2.1	2.9	4.6	8.2	9.8	20	31	41	54	65	88	150	647K	17	86
2400-5	120KC	8	2	NO	2400-5	15	2.3	3.3	4.5	8.0	9.5	20	28	36	44	53	78	120	861K	13	89
2400-6	180KC	3	2	NO	2400-6	20	1.9	3.0	5.1	9.4	12	25	38	52	65	79	110	180	362K	23	60
2400-6	180KC	5	2	NO	2400-6	15	2.0	2.9	4.4	7.8	9.4	19	30	39	52	61	86	140	647K	17	86
2400-6	180KC	8	2	NO	2400-6	15	2.3	3.2	4.4	7.9	9.3	19	27	35	44	52	77	120	861K	13	89
2400-4	60KC	3	2	YES	2400-4	20	1.9	3.0	5.1	9.4	13	25	38	52	66	79	110	180	362K	23	60
2400-4	60KC	5	2	YES	2400-4	15	2.0	2.9	4.4	7.7	9.2	19	29	38	50	60	83	160	647K	17	86
2400-4	60KC	8	2	YES	2400-4	15	2.3	3.2	4.7	8.2	9.8	20	30	39	47	56	84	130	861K	13	89
2400-5	120KC	3	2	YES	2400-5	20	1.9	2.9	4.8	8.8	12	23	35	48	61	73	110	160	362K	23	60
2400-5	120KC	5	2	YES	2400-5	15	2.0	2.8	4.2	7.3	8.7	17	27	35	47	56	77	150	647K	17	86
2400-5	120KC	8	2	YES	2400-5	15	2.2	3.1	4.5	7.8	9.3	19	28	36	44	53	78	120	861K	13	89
2400-6	180KC	3	2	YES	2400-6	20	1.9	2.8	4.8	8.6	11	22	34	47	59	71	99	160	362K	23	60
2400-6	180KC	5	2	YES	2400-6	15	2.0	2.8	4.1	7.1	8.5	17	27	35	46	55	76	140	647K	17	86
2400-6	180KC	8	2	YES	2400-6	15	2.2	3.1	4.4	7.7	9.2	18	27	35	44	52	77	120	861K	13	89

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	20	3.9	8.7	18	38	49	110	170	220	290	350	CE	CE	161K	13	14
2400-4	60KC	5	1	NO	2400-4	15	3.1	6.3	12	25	30	63	110	140	180	270	370	CE	287K	9	26
2400-4	60KC	8	1	NO	2400-4	15	3.4	6.1	12	23	31	61	97	140	170	210	270	460	413K	8	31
2400-5	120KC	3	1	NO	2400-5	20	3.0	6.0	12	24	30	63	99	140	180	220	CE	CE	161K	13	14
2400-5	120KC	5	1	NO	2400-5	15	2.6	4.7	8.3	17	20	42	66	87	120	170	240	CE	287K	9	26
2400-5	120KC	8	1	NO	2400-5	15	2.9	4.8	8.4	17	22	41	67	90	120	140	180	300	413K	8	31
2400-6	180KC	3	1	NO	2400-6	20	2.7	5.3	11	21	26	55	85	120	150	190	CE	CE	161K	13	14
2400-6	180KC	5	1	NO	2400-6	15	2.5	4.3	7.5	15	18	37	58	76	110	150	210	CE	287K	9	26
2400-6	180KC	8	1	NO	2400-6	15	2.8	4.5	7.7	15	20	36	60	79	98	120	160	260	413K	8	31
2400-4	60KC	3	2	NO	2400-4	10	3.2	6.7	14	28	36	75	120	170	210	CE	CE	CE	143K	9	22
2400-4	60KC	5	2	NO	2400-4	10	2.9	5.6	11	21	26	54	85	120	150	180	230	CE	245K	6	28
2400-4	60KC	8	2	NO	2400-4	10	3.1	5.5	8.7	18	22	41	68	90	120	140	180	300	389K	5	30
2400-5	120KC	3	2	NO	2400-5	10	2.6	5.0	9.4	19	25	50	78	110	140	CE	CE	CE	143K	9	22
2400-5	120KC	5	2	NO	2400-5	10	2.6	4.5	8.1	16	20	40	64	85	110	130	170	CE	245K	6	28
2400-5	120KC	8	2	NO	2400-5	10	2.9	4.7	7.2	14	17	31	52	68	84	100	140	230	389K	5	30
2400-6	180KC	3	2	NO	2400-6	10	2.5	4.7	8.8	18	23	46	72	100	130	CE	CE	CE	143K	9	22
2400-6	180KC	5	2	NO	2400-6	10	2.5	4.3	7.6	15	19	38	60	79	110	130	170	CE	245K	6	28
2400-6	180KC	8	2	NO	2400-6	10	2.9	4.7	7.0	14	17	30	50	66	82	98	130	220	389K	5	30
2400-4	60KC	3	2	YES	2400-4	10	2.8	5.6	11	22	29	60	94	140	170	CE	CE	CE	143K	9	22
2400-4	60KC	5	2	YES	2400-4	10	2.6	4.7	8.5	17	21	43	68	90	150	180	230	CE	245K	6	28
2400-4	60KC	8	2	YES	2400-4	10	3.0	4.9	8.6	17	22	41	68	90	120	140	180	300	389K	5	30
2400-5	120KC	3	2	YES	2400-5	10	2.4	4.4	7.9	16	20	41	64	89	120	CE	CE	CE	143K	9	22
2400-5	120KC	5	2	YES	2400-5	10	2.4	4.0	6.8	13	16	33	52	68	110	130	170	CE	245K	6	28
2400-5	120KC	8	2	YES	2400-5	10	2.8	4.3	7.2	14	17	31	52	68	84	100	140	230	389K	5	30
2400-6	180KC	3	2	YES	2400-6	10	2.4	4.3	7.7	15	20	40	62	86	110	CE	CE	CE	143K	9	22
2400-6	180KC	5	2	YES	2400-6	10	2.4	3.9	6.7	13	16	32	50	66	110	130	170	CE	245K	6	28
2400-6	180KC	8	2	YES	2400-6	10	2.7	4.2	7.0	14	17	30	50	66	82	98	130	220	389K	5	30

SYSTEM/360 MODEL 30

MAIN STORAGE USED 18,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	10	9.4	25	51	110	140	290	CE	CE	CE	CE	CE	CE	63K	5	3
2400-4	60KC	5	1	NO	2400-4	10	6.2	16	33	68	85	180	350	510	CE	CE	CE	CE	119K	4	7
2400-4	60KC	8	1	NO	2400-4	10	6.4	15	30	63	84	170	280	380	470	560	CE	CE	161K	3	8
2400-5	120KC	3	1	NO	2400-5	10	5.9	15	29	60	78	170	CE	CE	CE	CE	CE	CE	63K	5	3
2400-5	120KC	5	1	NO	2400-5	10	4.4	10	20	41	51	110	210	300	CE	CE	CE	CE	119K	4	7
2400-5	120KC	8	1	NO	2400-5	10	4.7	9.7	20	40	51	99	170	230	280	330	CE	CE	161K	3	8
2400-6	180KC	3	1	NO	2400-6	10	5.2	13	25	50	65	140	CE	CE	CE	CE	CE	CE	63K	5	3
2400-6	180KC	5	1	NO	2400-6	10	4.0	8.8	18	36	44	93	180	250	CE	CE	CE	CE	119K	4	7
2400-6	180KC	8	1	NO	2400-6	10	4.4	8.8	17	35	44	86	150	190	240	290	CE	CE	161K	3	8
2400-4	60KC	3	2	NO	2400-4	10	14	36	74	170	200	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-4	60KC	5	2	NO	2400-4	10	9.0	23	48	100	130	280	CE	CE	CE	CE	CE	CE	60K	1	1
2400-4	60KC	8	2	NO	2400-4	10	6.3	15	30	63	78	200	300	CE	CE	CE	CE	CE	90K	1	10
2400-5	120KC	3	2	NO	2400-5	10	9.8	25	51	120	140	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-5	120KC	5	2	NO	2400-5	10	6.6	17	33	69	86	200	CE	CE	CE	CE	CE	CE	60K	1	1
2400-5	120KC	8	2	NO	2400-5	10	4.8	11	21	43	53	140	210	CE	CE	CE	CE	CE	90K	1	10
2400-6	180KC	3	2	NO	2400-6	10	9.3	24	49	110	140	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-6	180KC	5	2	NO	2400-6	10	6.3	16	31	65	80	200	CE	CE	CE	CE	CE	CE	60K	1	1
2400-6	180KC	8	2	NO	2400-6	10	4.6	9.5	19	40	49	140	200	CE	CE	CE	CE	CE	90K	1	10
2400-4	60KC	3	2	YES	2400-4	10	12	29	59	130	160	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-4	60KC	5	2	YES	2400-4	10	7.4	19	38	78	97	280	CE	CE	CE	CE	CE	CE	60K	1	1
2400-4	60KC	8	2	YES	2400-4	10	5.4	12	24	49	61	200	300	CE	CE	CE	CE	CE	90K	1	10
2400-5	120KC	3	2	YES	2400-5	10	8.3	21	43	92	120	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-5	120KC	5	2	YES	2400-5	10	5.6	14	27	55	69	200	CE	CE	CE	CE	CE	CE	60K	1	1
2400-5	120KC	8	2	YES	2400-5	10	4.2	8.4	17	34	42	140	210	CE	CE	CE	CE	CE	90K	1	10
2400-6	180KC	3	2	YES	2400-6	10	8.1	21	41	89	120	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-6	180KC	5	2	YES	2400-6	10	5.5	13	26	54	67	200	CE	CE	CE	CE	CE	CE	60K	1	1
2400-6	180KC	8	2	YES	2400-6	10	4.1	8.1	16	33	40	140	200	CE	CE	CE	CE	CE	90K	1	10

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	350	1.6	2.1	3.2	5.4	6.8	14	21	29	37	46	62	97	1994K	449	586
2400-4	60KC	5	1	NO	2400-4	350	1.8	2.1	2.8	4.4	5.4	10	16	21	26	32	42	68	4720K	369	692
2400-4	60KC	8	1	NO	2400-4	250	2.0	2.4	2.9	4.3	5.4	9.7	14	20	24	28	40	59	9593K	304	807
2400-5	120KC	3	1	NO	2400-5	350	1.5	2.0	3.0	4.9	6.2	12	19	26	32	41	54	85	1994K	449	586
2400-5	120KC	5	1	NO	2400-5	350	1.7	2.0	2.7	4.1	5.0	9.1	14	19	23	29	38	60	4720K	369	692
2400-5	120KC	8	1	NO	2400-5	250	2.0	2.3	2.8	4.1	5.1	8.9	13	18	22	26	36	53	9593K	304	807
2400-6	180KC	3	1	NO	2400-6	350	1.5	2.0	2.9	4.8	5.9	12	18	25	31	39	51	81	1994K	449	586
2400-6	180KC	5	1	NO	2400-6	350	1.7	2.0	2.6	4.0	4.9	8.8	14	18	22	28	36	58	4720K	369	692
2400-6	180KC	8	1	NO	2400-6	250	2.0	2.3	2.8	4.0	5.0	8.7	13	17	21	25	35	51	9593K	304	807
2400-4	60KC	3	2	NO	2400-4	200	1.6	2.0	2.9	4.9	5.9	12	19	25	33	39	54	86	1913K	312	592
2400-4	60KC	5	2	NO	2400-4	125	1.7	2.0	2.7	4.2	5.2	9.5	14	19	24	28	40	60	4673K	230	921
2400-4	60KC	8	2	NO	2400-4	125	2.0	2.3	2.8	4.2	4.9	9.3	13	18	22	27	38	55	7812K	182	923
2400-5	120KC	3	2	NO	2400-5	200	1.5	2.0	2.8	4.7	5.6	12	18	23	30	36	51	80	1913K	312	592
2400-5	120KC	5	2	NO	2400-5	125	1.7	2.0	2.6	4.0	5.0	9.0	13	18	22	26	37	56	4673K	230	921
2400-5	120KC	8	2	NO	2400-5	125	2.0	2.3	2.8	4.1	4.7	8.9	13	17	22	25	36	53	7812K	182	923
2400-6	180KC	3	2	NO	2400-6	200	1.5	2.0	2.7	4.6	5.5	11	17	23	30	36	50	78	1913K	312	592
2400-6	180KC	5	2	NO	2400-6	125	1.7	2.0	2.6	4.0	4.9	8.8	13	18	22	26	36	55	4673K	230	921
2400-6	180KC	8	2	NO	2400-6	125	2.0	2.3	2.8	4.0	4.6	8.7	13	17	21	25	35	52	7812K	182	923
2400-4	60KC	3	2	YES	2400-4	200	1.5	2.0	2.8	4.7	5.6	12	18	23	30	36	50	80	1913K	312	592
2400-4	60KC	5	2	YES	2400-4	125	1.7	2.0	2.6	4.0	4.9	8.9	13	18	22	26	37	55	4673K	230	921
2400-4	60KC	8	2	YES	2400-4	125	2.0	2.3	2.8	4.0	4.6	8.8	13	17	21	25	35	52	7812K	182	923
2400-5	120KC	3	2	YES	2400-5	200	1.5	2.0	2.7	4.6	5.5	11	17	23	29	35	49	77	1913K	312	592
2400-5	120KC	5	2	YES	2400-5	125	1.7	2.0	2.6	3.9	4.8	8.7	13	18	21	26	36	53	4673K	230	921
2400-5	120KC	8	2	YES	2400-5	125	2.0	2.3	2.8	4.0	4.6	8.6	12	17	21	24	34	51	7812K	182	923
2400-6	180KC	3	2	YES	2400-6	200	1.5	2.0	2.7	4.6	5.4	11	17	22	29	35	49	77	1913K	312	592
2400-6	180KC	5	2	YES	2400-6	125	1.7	2.0	2.6	3.9	4.8	8.6	13	17	21	25	35	53	4673K	230	921
2400-6	180KC	8	2	YES	2400-6	125	2.0	2.3	2.8	4.0	4.6	8.6	12	17	21	24	34	50	7812K	182	923

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	85	2.0	3.2	5.5	12	14	29	45	63	80	99	140	220	500K	116	196
2400-4	60KC	5	1	NO	2400-4	50	1.9	2.8	4.3	7.7	9.4	20	30	43	53	63	90	140	1367K	92	263
2400-4	60KC	8	1	NO	2400-4	50	2.2	2.9	4.4	7.5	8.9	18	28	37	50	59	78	130	2500K	76	284
2400-5	120KC	3	1	NO	2400-5	85	1.8	2.7	4.4	8.5	11	22	34	46	59	73	99	160	500K	116	196
2400-5	120KC	5	1	NO	2400-5	50	1.8	2.5	3.7	6.2	7.5	15	23	33	40	48	68	110	1367K	92	263
2400-5	120KC	8	1	NO	2400-5	50	2.1	2.7	3.8	6.2	7.3	14	22	29	38	46	60	96	2500K	76	284
2400-6	180KC	3	1	NO	2400-6	85	1.8	2.6	4.1	7.7	9.3	20	30	41	52	64	88	140	500K	116	196
2400-6	180KC	5	1	NO	2400-6	50	1.8	2.4	3.5	5.7	7.0	14	21	29	36	43	61	90	1367K	92	263
2400-6	180KC	8	1	NO	2400-6	50	2.1	2.6	3.6	5.8	6.8	13	20	26	35	41	54	87	2500K	76	284
2400-4	60KC	3	2	NO	2400-4	45	1.8	2.7	4.4	8.1	11	21	33	47	58	71	97	160	478K	78	208
2400-4	60KC	5	2	NO	2400-4	30	1.8	2.6	3.7	6.6	7.8	16	25	33	41	51	69	110	1214K	57	285
2400-4	60KC	8	2	NO	2400-4	30	2.1	2.7	3.7	6.2	7.2	15	21	27	33	39	58	85	2070K	45	314
2400-5	120KC	3	2	NO	2400-5	45	1.7	2.5	3.9	7.0	8.9	18	28	39	48	60	81	130	478K	78	208
2400-5	120KC	5	2	NO	2400-5	30	1.8	2.4	3.5	5.8	6.8	14	21	28	36	43	61	90	1214K	57	285
2400-5	120KC	8	2	NO	2400-5	30	2.1	2.7	3.5	5.9	6.8	14	19	25	31	36	54	79	2070K	45	314
2400-6	180KC	3	2	NO	2400-6	45	1.7	2.4	3.8	6.7	8.4	17	26	37	45	56	76	120	478K	78	208
2400-6	180KC	5	2	NO	2400-6	30	1.8	2.4	3.4	5.5	6.5	13	20	27	34	41	57	85	1214K	57	285
2400-6	180KC	8	2	NO	2400-6	30	2.1	2.6	3.5	5.7	6.7	13	19	25	30	36	53	78	2070K	45	314
2400-4	60KC	3	2	YES	2400-4	45	1.7	2.4	3.9	6.8	8.6	17	27	37	46	57	77	130	478K	78	208
2400-4	60KC	5	2	YES	2400-4	30	1.8	2.4	3.4	5.5	6.5	13	20	26	34	40	57	84	1214K	57	285
2400-4	60KC	8	2	YES	2400-4	30	2.1	2.6	3.6	5.7	6.6	13	19	25	33	39	52	83	2070K	45	314
2400-5	120KC	3	2	YES	2400-5	45	1.7	2.3	3.7	6.4	8.0	16	25	34	43	53	71	120	478K	78	208
2400-5	120KC	5	2	YES	2400-5	30	1.8	2.4	3.3	5.3	6.2	12	19	25	32	38	53	79	1214K	57	285
2400-5	120KC	8	2	YES	2400-5	30	2.1	2.6	3.5	5.4	6.3	12	18	24	31	36	49	78	2070K	45	314
2400-6	180KC	3	2	YES	2400-6	45	1.7	2.3	3.6	6.2	7.9	16	24	34	42	51	69	110	478K	78	208
2400-6	180KC	5	2	YES	2400-6	30	1.8	2.3	3.2	5.2	6.1	12	18	24	31	37	52	77	1214K	57	285
2400-6	180KC	8	2	YES	2400-6	30	2.1	2.6	3.5	5.4	6.2	12	18	23	30	36	48	76	2070K	45	314

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	30	2.8	5.8	12	25	33	69	110	160	200	240	CE	CE	199K	46	95
2400-4	60KC	5	1	NO	2400-4	25	2.5	4.4	8.0	18	21	45	72	95	120	160	230	370	501K	30	116
2400-4	60KC	8	1	NO	2400-4	25	2.7	4.3	7.4	15	19	41	60	87	110	130	190	290	986K	30	117
2400-5	120KC	3	1	NO	2400-5	30	2.3	4.1	7.7	16	20	42	65	91	120	150	CE	CE	199K	46	95
2400-5	120KC	5	1	NO	2400-5	25	2.2	3.4	5.7	12	14	28	45	59	74	95	140	230	501K	30	116
2400-5	120KC	8	1	NO	2400-5	25	2.4	3.5	5.5	10	14	27	39	56	70	83	120	190	986K	30	117
2400-6	180KC	3	1	NO	2400-6	30	2.1	3.7	6.6	13	17	35	54	76	95	120	CE	CE	199K	46	95
2400-6	180KC	5	1	NO	2400-6	25	2.1	3.2	5.1	9.8	12	24	38	51	63	80	130	200	501K	30	116
2400-6	180KC	8	1	NO	2400-6	25	2.4	3.3	5.0	8.9	12	24	34	49	60	72	99	160	986K	30	117
2400-4	60KC	3	2	NO	2400-4	20	2.4	4.6	9.1	19	25	51	80	120	150	180	CE	CE	190K	30	95
2400-4	60KC	5	2	NO	2400-4	15	2.4	3.8	6.5	13	16	34	53	72	89	110	160	240	483K	19	124
2400-4	60KC	8	2	NO	2400-4	15	2.5	3.9	5.9	12	14	26	44	58	71	85	120	200	827K	18	129
2400-5	120KC	3	2	NO	2400-5	20	2.1	3.4	6.2	12	16	32	49	69	86	110	CE	CE	190K	30	95
2400-5	120KC	5	2	NO	2400-5	15	2.1	3.1	4.9	9.0	12	24	36	48	59	73	110	160	483K	19	124
2400-5	120KC	8	2	NO	2400-5	15	2.4	3.3	4.8	8.8	11	19	31	41	50	59	78	140	827K	18	129
2400-6	180KC	3	2	NO	2400-6	20	2.0	3.3	5.7	11	14	29	45	62	78	96	CE	CE	190K	30	95
2400-6	180KC	5	2	NO	2400-6	15	2.1	3.0	4.6	8.4	11	22	33	45	56	70	98	160	483K	19	124
2400-6	180KC	8	2	NO	2400-6	15	2.3	3.2	4.7	8.6	11	18	30	39	48	57	75	130	827K	18	129
2400-4	60KC	3	2	YES	2400-4	20	2.2	4.0	7.5	15	20	41	64	90	120	140	CE	CE	190K	30	95
2400-4	60KC	5	2	YES	2400-4	15	2.2	3.2	5.3	9.9	14	27	40	57	71	87	130	210	483K	19	124
2400-4	60KC	8	2	YES	2400-4	15	2.4	3.4	5.3	9.6	12	25	38	53	67	80	120	180	827K	18	129
2400-5	120KC	3	2	YES	2400-5	20	2.0	3.1	5.3	9.8	13	26	40	56	69	85	CE	CE	190K	30	95
2400-5	120KC	5	2	YES	2400-5	15	2.0	2.8	4.3	7.5	9.7	20	29	40	49	62	88	150	483K	19	124
2400-5	120KC	8	2	YES	2400-5	15	2.3	3.1	4.5	7.7	9.5	19	29	41	50	59	78	140	827K	18	129
2400-6	180KC	3	2	YES	2400-6	20	1.9	3.0	5.1	9.4	13	25	38	53	66	82	CE	CE	190K	30	95
2400-6	180KC	5	2	YES	2400-6	15	2.0	2.8	4.2	7.3	9.3	19	28	38	47	59	85	140	483K	19	124
2400-6	180KC	8	2	YES	2400-6	15	2.3	3.0	4.4	7.5	9.3	18	28	39	48	57	75	130	827K	18	129

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	20	5.8	15	32	69	89	200	310	CE	CE	CE	CE	CE	79K	18	30
2400-4	60KC	5	1	NO	2400-4	15	4.3	9.8	20	42	54	120	190	290	380	460	690	CE	213K	14	35
2400-4	60KC	8	1	NO	2400-4	15	4.1	9.2	19	39	48	110	170	230	290	350	490	790	382K	12	42
2400-5	120KC	3	1	NO	2400-5	20	3.9	8.8	19	39	50	110	170	CE	CE	CE	CE	CE	79K	18	30
2400-5	120KC	5	1	NO	2400-5	15	3.1	6.2	12	24	31	66	110	160	210	260	390	CE	213K	14	35
2400-5	120KC	8	1	NO	2400-5	15	3.2	6.1	12	23	28	58	95	140	170	200	280	450	382K	12	42
2400-6	180KC	3	1	NO	2400-6	20	3.4	7.3	15	31	38	83	130	CE	CE	CE	CE	CE	79K	18	30
2400-6	180KC	5	1	NO	2400-6	15	2.9	5.2	9.6	20	25	54	80	130	170	210	310	CE	213K	14	35
2400-6	180KC	8	1	NO	2400-6	15	3.0	5.3	9.5	19	23	48	76	120	140	170	230	380	382K	12	42
2400-4	60KC	3	2	NO	2400-4	10	4.5	11	24	50	65	140	220	CE	CE	CE	CE	CE	76K	12	33
2400-4	60KC	5	2	NO	2400-4	10	3.8	8.0	16	34	42	88	150	200	260	380	CE	CE	179K	9	42
2400-4	60KC	8	2	NO	2400-4	10	3.8	6.6	14	25	36	68	110	160	200	230	310	CE	270K	7	45
2400-5	120KC	3	2	NO	2400-5	10	3.2	6.7	14	28	36	76	120	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	5	2	NO	2400-5	10	2.9	5.3	9.7	20	24	50	78	110	150	220	CE	CE	179K	9	42
2400-5	120KC	8	2	NO	2400-5	10	3.0	4.7	8.5	15	21	39	57	86	110	130	170	CE	270K	7	45
2400-6	180KC	3	2	NO	2400-6	10	2.9	5.7	11	23	29	60	93	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	5	2	NO	2400-6	10	2.8	4.7	8.5	17	21	44	66	93	120	200	CE	CE	179K	9	42
2400-6	180KC	8	2	NO	2400-6	10	2.9	4.4	7.8	14	19	35	51	76	94	120	150	CE	270K	7	45
2400-4	60KC	3	2	YES	2400-4	10	3.9	8.9	19	40	52	110	180	CE	CE	CE	CE	CE	76K	12	33
2400-4	60KC	5	2	YES	2400-4	10	3.3	6.5	13	26	32	69	130	170	230	300	CE	CE	179K	9	42
2400-4	60KC	8	2	YES	2400-4	10	3.3	6.5	13	25	31	66	110	160	200	230	310	CE	270K	7	45
2400-5	120KC	3	2	YES	2400-5	10	2.8	5.5	11	22	29	60	93	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	5	2	YES	2400-5	10	2.6	4.4	7.7	15	19	40	70	95	130	170	CE	CE	179K	9	42
2400-5	120KC	8	2	YES	2400-5	10	2.8	4.6	7.9	15	19	38	57	86	110	130	170	CE	270K	7	45
2400-6	180KC	3	2	YES	2400-6	10	2.6	4.9	9.0	19	24	49	75	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	5	2	YES	2400-6	10	2.5	4.1	7.0	14	17	36	66	89	120	160	CE	CE	179K	9	42
2400-6	180KC	8	2	YES	2400-6	10	2.7	4.4	7.6	14	18	35	51	76	94	120	150	CE	270K	7	45

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	150	1.4	1.8	2.7	4.6	5.7	12	17	24	30	36	49	77	1647K	141	147
2400-4	60KC	4	1	NO	2400-4	150	1.4	1.8	2.4	4.0	4.6	8.6	14	18	23	28	37	57	1892K	122	153
2400-4	60KC	6	1	NO	2400-4	100	1.5	1.9	2.4	3.7	4.3	7.6	12	16	20	24	32	50	3326K	98	225
2400-4	60KC	8	1	NO	2400-4	100	1.6	2.0	2.5	3.7	4.3	7.8	12	16	20	23	33	49	4268K	87	245
2400-5	120KC	3	1	NO	2400-5	150	1.4	1.7	2.4	3.9	4.7	8.9	14	19	24	28	39	60	1647K	141	147
2400-5	120KC	4	1	NO	2400-5	150	1.4	1.7	2.2	3.4	3.9	7.1	11	14	19	22	29	45	1892K	122	153
2400-5	120KC	6	1	NO	2400-5	100	1.5	1.8	2.3	3.2	3.7	6.4	9.6	13	17	20	25	40	3326K	98	225
2400-5	120KC	8	1	NO	2400-5	100	1.6	1.9	2.4	3.3	3.8	6.5	9.4	13	16	19	27	39	4268K	87	245
2400-6	180KC	3	1	NO	2400-6	150	1.3	1.7	2.3	3.7	4.5	8.3	13	18	22	26	36	55	1647K	141	147
2400-6	180KC	4	1	NO	2400-6	150	1.4	1.6	2.1	3.3	3.8	6.7	10	13	17	21	27	42	1892K	122	153
2400-6	180KC	6	1	NO	2400-6	100	1.5	1.8	2.2	3.1	3.5	6.1	9.0	12	16	18	24	37	3326K	98	225
2400-6	180KC	8	1	NO	2400-6	100	1.6	1.9	2.3	3.2	3.7	6.2	8.9	13	15	18	25	36	4268K	87	245

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	20	3.5	8.1	17	35	46	97	160	210	270	330	CE	CE	161K	13	14
2400-4	60KC	4	1	NO	2400-4	20	2.9	6.1	12	25	33	69	110	150	190	240	CE	CE	169K	13	17
2400-4	60KC	6	1	NO	2400-4	15	2.9	5.5	11	22	27	56	91	130	170	230	310	CE	298K	10	28
2400-4	60KC	8	1	NO	2400-4	15	3.0	5.5	11	22	29	57	91	130	160	190	260	430	413K	8	31
2400-5	120KC	3	1	NO	2400-5	20	2.5	5.0	9.6	20	26	54	84	120	150	180	CE	CE	161K	13	14
2400-5	120KC	4	1	NO	2400-5	20	2.2	4.0	7.2	15	19	39	60	81	110	130	CE	CE	169K	13	17
2400-5	120KC	6	1	NO	2400-5	15	2.3	3.7	6.5	13	16	32	52	72	91	130	170	CE	298K	10	28
2400-5	120KC	8	1	NO	2400-5	15	2.4	3.8	6.6	13	17	33	52	73	90	110	150	240	413K	8	31
2400-6	180KC	3	1	NO	2400-6	20	2.2	4.1	7.7	16	20	41	65	87	120	140	CE	CE	161K	13	14
2400-6	180KC	4	1	NO	2400-6	20	2.0	3.4	5.9	12	15	31	48	64	81	100	CE	CE	169K	13	17
2400-6	180KC	6	1	NO	2400-6	15	2.1	3.3	5.6	11	13	27	42	59	74	100	140	CE	298K	10	28
2400-6	180KC	8	1	NO	2400-6	15	2.3	3.5	5.8	11	15	27	44	58	72	86	120	200	413K	8	31

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	2	NO	2400-4	80	1.4	1.7	2.4	3.9	4.6	9.1	14	18	24	29	40	60	1456K	93	190
2400-4	60KC	4	2	NO	2400-4	80	1.4	1.7	2.2	3.3	4.1	7.4	12	15	18	23	30	47	1450K	92	201
2400-4	60KC	6	2	NO	2400-4	40	1.5	1.8	2.4	3.5	4.0	7.1	11	13	16	21	27	39	2572K	67	281
2400-4	60KC	8	2	NO	2400-4	40	1.6	1.9	2.5	3.5	3.9	7.0	9.5	12	15	18	25	37	3444K	52	292
2400-5	120KC	3	2	NO	2400-5	80	1.3	1.7	2.2	3.6	4.2	8.0	13	16	21	25	34	52	1456K	93	190
2400-5	120KC	4	2	NO	2400-5	80	1.4	1.6	2.1	3.1	3.7	6.6	9.9	13	16	20	26	41	1450K	92	201
2400-5	120KC	6	2	NO	2400-5	40	1.5	1.7	2.2	3.2	3.7	6.3	9.4	12	15	19	25	37	2572K	67	281
2400-5	120KC	8	2	NO	2400-5	40	1.6	1.9	2.4	3.3	3.7	6.3	9.0	12	14	17	24	35	3444K	52	292
2400-6	180KC	3	2	NO	2400-6	80	1.3	1.6	2.2	3.5	4.0	7.7	12	16	20	24	33	49	1456K	93	190
2400-6	180KC	4	2	NO	2400-6	80	1.4	1.6	2.1	3.0	3.6	6.4	9.6	13	16	20	25	40	1450K	92	201
2400-6	180KC	6	2	NO	2400-6	40	1.5	1.7	2.2	3.2	3.6	6.1	9.1	12	15	18	24	37	2572K	67	281
2400-6	180KC	8	2	NO	2400-6	40	1.6	1.9	2.3	3.2	3.7	6.2	8.9	12	14	17	24	34	3444K	52	292
2400-4	60KC	3	2	YES	2400-4	80	1.3	1.6	2.2	3.5	4.1	7.8	12	16	20	24	33	50	1456K	93	190
2400-4	60KC	4	2	YES	2400-4	80	1.4	1.6	2.1	3.0	3.7	6.4	9.6	13	16	20	26	40	1450K	92	201
2400-4	60KC	6	2	YES	2400-4	40	1.5	1.7	2.2	3.1	3.5	6.0	8.9	12	14	18	23	37	2572K	67	281
2400-4	60KC	8	2	YES	2400-4	40	1.6	1.9	2.3	3.2	3.6	6.0	8.8	12	15	18	23	36	3444K	52	292
2400-5	120KC	3	2	YES	2400-5	80	1.3	1.6	2.1	3.4	3.9	7.4	12	15	19	23	31	47	1456K	93	190
2400-5	120KC	4	2	YES	2400-5	80	1.4	1.6	2.0	2.9	3.5	6.1	9.1	12	15	19	24	38	1450K	92	201
2400-5	120KC	6	2	YES	2400-5	40	1.5	1.7	2.2	3.0	3.4	5.8	8.5	11	14	17	22	35	2572K	67	281
2400-5	120KC	8	2	YES	2400-5	40	1.6	1.9	2.3	3.1	3.5	5.8	8.4	11	14	17	22	34	3444K	52	292
2400-6	180KC	3	2	YES	2400-6	80	1.3	1.6	2.1	3.3	3.8	7.3	11	15	19	22	31	46	1456K	93	190
2400-6	180KC	4	2	YES	2400-6	80	1.4	1.6	2.0	2.9	3.5	6.1	9.0	12	15	18	24	37	1450K	92	201
2400-6	180KC	6	2	YES	2400-6	40	1.5	1.7	2.2	3.0	3.4	5.7	8.4	11	13	17	22	34	2572K	67	281
2400-6	180KC	8	2	YES	2400-6	40	1.6	1.9	2.3	3.1	3.5	5.7	8.4	11	14	17	22	34	3444K	52	292

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	35	1.9	3.5	6.5	13	17	35	55	76	96	120	170	260	407K	34	45
2400-4	60KC	4	1	NO	2400-4	35	1.8	2.9	5.0	9.7	13	26	41	54	70	86	120	190	501K	34	53
2400-4	60KC	6	1	NO	2400-4	25	1.9	2.8	4.7	8.7	11	23	35	47	58	75	100	160	813K	24	76
2400-4	60KC	8	1	NO	2400-4	25	2.0	3.0	4.8	8.8	11	22	35	46	58	71	98	160	1053K	21	83
2400-5	120KC	3	1	NO	2400-5	35	1.6	2.6	4.3	8.1	11	21	33	45	57	70	95	150	407K	34	45
2400-5	120KC	4	1	NO	2400-5	35	1.6	2.3	3.5	6.4	8.0	16	25	33	42	52	69	110	501K	34	53
2400-5	120KC	6	1	NO	2400-5	25	1.7	2.3	3.5	6.0	7.3	15	22	30	37	47	62	99	813K	24	76
2400-5	120KC	8	1	NO	2400-5	25	1.8	2.5	3.7	6.2	7.3	15	23	30	37	45	62	98	1053K	21	83
2400-6	180KC	3	1	NO	2400-6	35	1.6	2.4	3.8	7.1	8.8	18	28	38	48	59	81	130	407K	34	45
2400-6	180KC	4	1	NO	2400-6	35	1.6	2.2	3.2	5.7	7.1	14	22	29	37	45	59	94	501K	34	53
2400-6	180KC	6	1	NO	2400-6	25	1.7	2.2	3.3	5.5	6.5	13	20	26	32	41	54	86	813K	24	76
2400-6	180KC	8	1	NO	2400-6	25	1.8	2.4	3.4	5.6	6.6	13	20	26	33	39	54	85	1053K	21	83
2400-4	60KC	3	2	NO	2400-4	20	1.8	2.9	5.3	10	14	27	42	58	74	89	130	200	362K	23	60
2400-4	60KC	4	2	NO	2400-4	20	1.7	2.6	4.3	7.9	11	21	31	44	55	68	93	150	362K	23	68
2400-4	60KC	6	2	NO	2400-4	15	1.8	2.6	4.1	7.4	8.9	19	26	34	46	57	74	110	630K	16	86
2400-4	60KC	8	2	NO	2400-4	15	1.9	2.8	3.8	7.0	8.2	17	25	32	39	47	71	110	861K	13	89
2400-5	120KC	3	2	NO	2400-5	20	1.5	2.2	3.6	6.4	8.2	17	25	34	44	53	73	120	362K	23	60
2400-5	120KC	4	2	NO	2400-5	20	1.5	2.1	3.1	5.3	6.8	14	20	27	34	41	56	89	362K	23	68
2400-5	120KC	6	2	NO	2400-5	15	1.7	2.2	3.2	5.3	6.4	12	17	22	29	36	46	68	630K	16	86
2400-5	120KC	8	2	NO	2400-5	15	1.8	2.4	3.1	5.2	6.0	12	16	21	26	30	45	65	861K	13	89
2400-6	180KC	3	2	NO	2400-6	20	1.5	2.1	3.4	6.0	7.6	15	23	31	40	48	66	110	362K	23	60
2400-6	180KC	4	2	NO	2400-6	20	1.5	2.1	3.0	5.0	6.4	13	18	25	31	38	52	82	362K	23	68
2400-6	180KC	6	2	NO	2400-6	15	1.7	2.2	3.0	5.0	6.2	12	17	21	28	34	45	66	630K	16	86
2400-6	180KC	8	2	NO	2400-6	15	1.8	2.4	3.1	5.1	5.8	12	16	20	25	29	43	63	861K	13	89
2400-4	60KC	3	2	YES	2400-4	20	1.6	2.6	4.4	8.2	11	22	34	46	59	71	98	160	362K	23	60
2400-4	60KC	4	2	YES	2400-4	20	1.6	2.3	3.6	6.5	8.4	17	25	35	44	54	74	120	362K	23	68
2400-4	60KC	6	2	YES	2400-4	15	1.7	2.3	3.5	6.0	7.8	16	23	32	40	48	68	110	630K	16	86
2400-4	60KC	8	2	YES	2400-4	15	1.8	2.6	3.8	6.7	8.0	16	25	32	39	47	70	110	861K	13	89
2400-5	120KC	3	2	YES	2400-5	20	1.5	2.0	3.1	5.4	6.8	13	20	28	35	42	57	90	362K	23	60
2400-5	120KC	4	2	YES	2400-5	20	1.5	2.0	2.8	4.5	5.7	11	16	22	27	33	45	71	362K	23	68
2400-5	120KC	6	2	YES	2400-5	15	1.7	2.0	2.8	4.4	5.5	11	15	21	26	30	43	68	630K	16	86
2400-5	120KC	8	2	YES	2400-5	15	1.8	2.3	3.1	4.9	5.7	11	16	21	26	30	44	65	861K	13	89
2400-6	180KC	3	2	YES	2400-6	20	1.5	2.0	3.0	5.2	6.5	13	20	26	33	40	55	85	362K	23	60
2400-6	180KC	4	2	YES	2400-6	20	1.5	1.9	2.7	4.4	5.5	11	15	21	26	32	43	68	362K	23	68
2400-6	180KC	6	2	YES	2400-6	15	1.6	2.0	2.7	4.3	5.4	10	15	20	25	30	41	66	630K	16	86
2400-6	180KC	8	2	YES	2400-6	15	1.8	2.2	3.0	4.8	5.6	11	16	20	25	29	43	63	861K	13	89

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	2	NO	2400-4	10	2.9	6.3	13	26	35	72	120	160	200	CE	CE	CE	143K	9	22
2400-4	60KC	4	2	NO	2400-4	10	2.5	5.2	9.9	20	25	52	84	120	150	CE	CE	CE	143K	9	24
2400-4	60KC	6	2	NO	2400-4	10	2.7	5.1	8.8	18	22	47	69	91	130	160	210	630	339K	6	29
2400-4	60KC	8	2	NO	2400-4	10	2.8	5.1	8.1	17	21	39	65	86	110	130	170	290	389K	5	30
2400-5	120KC	3	2	NO	2400-5	10	2.1	4.0	7.5	15	20	40	63	87	110	CE	CE	CE	143K	9	22
2400-5	120KC	4	2	NO	2400-5	10	2.0	3.5	6.1	12	15	30	47	65	82	CE	CE	CE	143K	9	24
2400-5	120KC	6	2	NO	2400-5	10	2.2	3.5	5.8	11	13	27	39	51	71	84	120	360	339K	6	29
2400-5	120KC	8	2	NO	2400-5	10	2.3	3.7	5.4	11	13	23	37	49	60	72	95	160	389K	5	30
2400-6	180KC	3	2	NO	2400-6	10	1.9	3.4	6.2	12	16	32	49	68	85	CE	CE	CE	143K	9	22
2400-6	180KC	4	2	NO	2400-6	10	1.9	3.0	5.1	9.6	12	24	38	53	66	CE	CE	CE	143K	9	24
2400-6	180KC	6	2	NO	2400-6	10	2.1	3.2	5.1	9.2	11	22	32	42	57	68	90	300	339K	6	29
2400-6	180KC	8	2	NO	2400-6	10	2.2	3.4	4.8	8.8	11	19	31	40	50	59	78	130	389K	5	30
2400-4	60KC	3	2	YES	2400-4	10	2.5	5.3	11	21	28	58	91	130	160	CE	CE	CE	143K	9	22
2400-4	60KC	4	2	YES	2400-4	10	2.3	4.4	8.2	17	21	42	67	93	120	CE	CE	CE	143K	9	24
2400-4	60KC	6	2	YES	2400-4	10	2.5	4.3	7.8	16	20	40	65	86	130	160	210	630	339K	6	29
2400-4	60KC	8	2	YES	2400-4	10	2.6	4.5	8.1	16	21	39	65	86	110	130	170	290	389K	5	30
2400-5	120KC	3	2	YES	2400-5	10	1.9	3.4	6.2	12	16	32	50	69	86	CE	CE	CE	143K	9	22
2400-5	120KC	4	2	YES	2400-5	10	1.8	3.0	5.1	9.5	12	24	38	52	65	CE	CE	CE	143K	9	24
2400-5	120KC	6	2	YES	2400-5	10	2.0	3.0	5.0	9.3	12	23	37	48	71	84	120	360	339K	6	29
2400-5	120KC	8	2	YES	2400-5	10	2.2	3.2	5.2	9.5	13	23	37	49	60	72	95	160	389K	5	30
2400-6	180KC	3	2	YES	2400-6	10	1.8	3.0	5.1	9.6	13	25	39	54	67	CE	CE	CE	143K	9	22
2400-6	180KC	4	2	YES	2400-6	10	1.7	2.7	4.3	7.9	9.6	20	30	42	52	CE	CE	CE	143K	9	24
2400-6	180KC	6	2	YES	2400-6	10	1.9	2.8	4.4	8.0	9.6	20	31	40	57	68	90	300	339K	6	29
2400-6	180KC	8	2	YES	2400-6	10	2.1	3.0	4.7	8.4	11	19	31	40	50	59	78	130	389K	5	30

SYSTEM/360 MODEL 40

MAIN STORAGE USED 18,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	10	8.8	24	49	110	140	280	CE	CE	CE	CE	CE	CE	63K	5	3
2400-4	60KC	4	1	NO	2400-4	10	6.4	16	33	74	92	200	CE	CE	CE	CE	CE	CE	60K	4	5
2400-4	60KC	6	1	NO	2400-4	10	5.7	14	28	58	78	170	300	410	CE	CE	CE	CE	119K	4	6
2400-4	60KC	8	1	NO	2400-4	10	5.9	14	28	60	80	160	270	360	450	530	CE	CE	161K	3	8
2400-5	120KC	3	1	NO	2400-5	10	5.3	14	27	55	72	150	CE	CE	CE	CE	CE	CE	63K	5	3
2400-5	120KC	4	1	NO	2400-5	10	4.1	9.1	19	41	51	110	CE	CE	CE	CE	CE	CE	60K	4	5
2400-5	120KC	6	1	NO	2400-5	10	3.8	7.9	16	33	44	92	170	230	CE	CE	CE	CE	119K	4	6
2400-5	120KC	8	1	NO	2400-5	10	4.0	8.2	17	34	45	87	150	200	250	300	CE	CE	161K	3	8
2400-6	180KC	3	1	NO	2400-6	10	4.3	11	21	42	55	120	CE	CE	CE	CE	CE	CE	63K	5	3
2400-6	180KC	4	1	NO	2400-6	10	3.5	7.3	15	32	39	81	CE	CE	CE	CE	CE	CE	60K	4	5
2400-6	180KC	6	1	NO	2400-6	10	3.3	6.5	13	26	34	72	130	180	CE	CE	CE	CE	119K	4	6
2400-6	180KC	8	1	NO	2400-6	10	3.5	6.9	14	27	36	69	120	160	190	230	CE	CE	161K	3	8
2400-4	60KC	3	2	NO	2400-4	10	13	34	70	160	200	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-4	60KC	4	2	NO	2400-4	10	9.1	24	50	110	140	470	CE	CE	CE	CE	CE	CE	60K	1	2
2400-4	60KC	6	2	NO	2400-4	10	8.2	20	40	86	110	230	CE	CE	CE	CE	CE	CE	60K	1	1
2400-4	60KC	8	2	NO	2400-4	10	5.8	14	28	60	75	190	290	CE	CE	CE	CE	CE	90K	1	10
2400-5	120KC	3	2	NO	2400-5	10	7.7	20	40	86	110	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-5	120KC	4	2	NO	2400-5	10	5.6	14	29	59	77	290	CE	CE	CE	CE	CE	CE	60K	1	2
2400-5	120KC	6	2	NO	2400-5	10	5.2	12	24	49	60	130	CE	CE	CE	CE	CE	CE	60K	1	1
2400-5	120KC	8	2	NO	2400-5	10	4.0	8.2	17	34	42	110	160	CE	CE	CE	CE	CE	90K	1	10
2400-6	180KC	3	2	NO	2400-6	10	6.6	17	34	72	90	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-6	180KC	4	2	NO	2400-6	10	4.9	12	24	49	64	250	CE	CE	CE	CE	CE	CE	60K	1	2
2400-6	180KC	6	2	NO	2400-6	10	4.6	9.9	20	41	50	110	CE	CE	CE	CE	CE	CE	60K	1	1
2400-6	180KC	8	2	NO	2400-6	10	3.6	7.1	14	29	36	88	130	CE	CE	CE	CE	CE	90K	1	10
2400-4	60KC	3	2	YES	2400-4	10	11	28	58	130	160	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-4	60KC	4	2	YES	2400-4	10	7.7	20	41	85	120	470	CE	CE	CE	CE	CE	CE	60K	1	2
2400-4	60KC	6	2	YES	2400-4	10	6.9	16	33	69	85	230	CE	CE	CE	CE	CE	CE	60K	1	1
2400-4	60KC	8	2	YES	2400-4	10	5.0	12	23	48	60	190	290	CE	CE	CE	CE	CE	90K	1	10
2400-5	120KC	3	2	YES	2400-5	10	6.4	16	32	69	86	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-5	120KC	4	2	YES	2400-5	10	4.8	12	23	48	62	290	CE	CE	CE	CE	CE	CE	60K	1	2
2400-5	120KC	6	2	YES	2400-5	10	4.4	9.5	19	39	48	130	CE	CE	CE	CE	CE	CE	60K	1	1
2400-5	120KC	8	2	YES	2400-5	10	3.5	6.8	14	27	33	110	160	CE	CE	CE	CE	CE	90K	1	10
2400-6	180KC	3	2	YES	2400-6	10	5.5	14	27	58	72	CE	CE	CE	CE	CE	CE	CE	30K	1	2
2400-6	180KC	4	2	YES	2400-6	10	4.2	9.7	20	40	52	250	CE	CE	CE	CE	CE	CE	60K	1	2
2400-6	180KC	6	2	YES	2400-6	10	3.9	8.1	16	32	40	110	CE	CE	CE	CE	CE	CE	60K	1	1
2400-6	180KC	8	2	YES	2400-6	10	3.1	5.9	12	23	28	88	130	CE	CE	CE	CE	CE	90K	1	10

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	300	1.3	1.6	2.3	3.6	4.5	8.4	13	18	23	28	38	60	2002K	468	586
2400-4	60KC	4	1	NO	2400-4	300	1.3	1.6	2.1	3.1	3.8	6.9	11	14	18	22	29	46	3669K	422	611
2400-4	60KC	6	1	NO	2400-4	175	1.5	1.7	2.1	3.1	3.5	6.0	9.1	12	16	19	24	39	6939K	367	839
2400-4	60KC	8	1	NO	2400-4	175	1.6	1.8	2.1	3.0	3.7	6.3	8.6	12	15	18	25	36	9734K	304	875
2400-4	60KC	10	1	NO	2400-4	175	1.8	2.0	2.3	3.2	3.5	6.0	8.9	12	14	18	23	37	12085K	258	905
2400-5	120KC	3	1	NO	2400-5	300	1.3	1.5	2.1	3.1	3.8	7.0	11	14	18	22	30	48	2002K	468	586
2400-5	120KC	4	1	NO	2400-5	300	1.3	1.5	1.9	2.8	3.4	5.9	8.8	12	14	18	24	37	3669K	422	611
2400-5	120KC	6	1	NO	2400-5	175	1.5	1.6	2.0	2.8	3.1	5.2	7.7	9.8	13	16	20	32	6939K	367	839
2400-5	120KC	8	1	NO	2400-5	175	1.6	1.8	2.0	2.8	3.3	5.5	7.4	11	13	15	21	30	9734K	304	875
2400-5	120KC	10	1	NO	2400-5	175	1.7	1.9	2.2	2.9	3.3	5.3	7.7	9.6	12	15	20	31	12085K	258	905
2400-6	180KC	3	1	NO	2400-6	300	1.2	1.5	2.0	3.0	3.6	6.5	9.8	13	17	20	28	44	2002K	468	586
2400-6	180KC	4	1	NO	2400-6	300	1.3	1.5	1.9	2.7	3.2	5.5	8.3	11	14	17	22	34	3669K	422	611
2400-6	180KC	6	1	NO	2400-6	175	1.5	1.6	2.0	2.7	3.0	5.0	7.3	9.3	13	15	19	30	6939K	367	839
2400-6	180KC	8	1	NO	2400-6	175	1.6	1.8	2.0	2.7	3.2	5.2	7.0	9.6	12	14	20	28	9734K	304	875
2400-6	180KC	10	1	NO	2400-6	175	1.7	1.9	2.2	2.9	3.2	5.1	7.3	9.1	12	14	19	29	12085K	258	905
2400-4	60KC	3	2	NO	2400-4	200	1.2	1.5	2.0	3.1	3.7	7.0	11	14	19	22	31	48	1913K	312	592
2400-4	60KC	4	2	NO	2400-4	200	1.3	1.6	2.0	2.8	3.2	5.9	8.3	12	14	18	24	37	3231K	308	680
2400-4	60KC	6	2	NO	2400-4	115	1.5	1.6	2.0	2.9	3.2	5.4	8.0	11	13	16	21	32	5887K	229	889
2400-4	60KC	8	2	NO	2400-4	115	1.6	1.7	2.1	2.8	3.2	5.6	7.5	9.5	12	16	20	29	7858K	182	936
2400-4	60KC	10	2	NO	2400-4	115	1.7	1.9	2.2	3.0	3.4	5.2	7.8	9.8	12	14	18	30	9269K	151	964
2400-5	120KC	3	2	NO	2400-5	200	1.2	1.5	1.9	2.9	3.4	6.3	9.5	13	16	20	27	42	1913K	312	592
2400-5	120KC	4	2	NO	2400-5	200	1.3	1.5	1.9	2.6	3.0	5.4	7.6	11	13	16	21	33	3231K	308	680
2400-5	120KC	6	2	NO	2400-5	115	1.4	1.6	2.0	2.7	3.0	5.0	7.3	9.2	12	15	19	30	5887K	229	889
2400-5	120KC	8	2	NO	2400-5	115	1.6	1.7	2.0	2.7	3.0	5.3	7.1	9.1	12	14	19	28	7858K	182	936
2400-5	120KC	10	2	NO	2400-5	115	1.7	1.9	2.1	2.9	3.2	5.0	7.4	9.2	12	14	17	29	9269K	151	964
2400-6	180KC	3	2	NO	2400-6	200	1.2	1.5	1.9	2.8	3.3	6.1	9.1	12	16	19	26	40	1913K	312	592
2400-6	180KC	4	2	NO	2400-6	200	1.3	1.5	1.9	2.6	3.0	5.3	7.3	10	13	16	21	32	3231K	308	680
2400-6	180KC	6	2	NO	2400-6	115	1.4	1.6	2.0	2.7	3.0	4.9	7.1	8.9	12	14	18	28	5887K	229	889
2400-6	180KC	8	2	NO	2400-6	115	1.6	1.7	2.0	2.7	3.0	5.1	6.9	9.0	12	14	19	27	7858K	182	936
2400-6	180KC	10	2	NO	2400-6	115	1.7	1.9	2.1	2.9	3.1	5.0	7.2	9.0	11	14	17	28	9269K	151	964
2400-4	60KC	3	2	YES	2400-4	200	1.2	1.5	1.9	2.9	3.3	6.2	9.3	13	16	19	26	41	1913K	312	592
2400-4	60KC	4	2	YES	2400-4	200	1.3	1.5	1.9	2.6	3.0	5.4	7.4	11	13	16	21	33	3231K	308	680
2400-4	60KC	6	2	YES	2400-4	115	1.5	1.6	2.0	2.7	3.0	4.9	7.1	8.9	12	14	18	28	5887K	229	889
2400-4	60KC	8	2	YES	2400-4	115	1.6	1.7	2.0	2.7	3.0	5.1	6.8	9.3	12	14	19	27	7858K	182	936
2400-4	60KC	10	2	YES	2400-4	115	1.7	1.9	2.2	2.8	3.1	5.0	7.1	8.9	11	14	18	28	9269K	151	964
2400-5	120KC	3	2	YES	2400-5	200	1.2	1.5	1.9	2.8	3.2	5.9	8.8	12	15	18	25	39	1913K	312	592
2400-5	120KC	4	2	YES	2400-5	200	1.3	1.5	1.9	2.6	2.9	5.2	7.1	9.7	12	15	20	31	3231K	308	680
2400-5	120KC	6	2	YES	2400-5	115	1.4	1.6	1.9	2.6	2.9	4.7	6.8	8.6	12	14	17	27	5887K	229	889
2400-5	120KC	8	2	YES	2400-5	115	1.6	1.7	2.0	2.6	2.9	5.0	6.6	9.0	11	13	18	26	7858K	182	936
2400-5	120KC	10	2	YES	2400-5	115	1.7	1.9	2.1	2.8	3.1	4.8	6.9	8.6	11	14	17	27	9269K	151	964
2400-6	180KC	3	2	YES	2400-6	200	1.2	1.5	1.8	2.8	3.2	5.8	8.7	12	15	18	25	38	1913K	312	592
2400-6	180KC	4	2	YES	2400-6	200	1.3	1.5	1.8	2.5	2.9	5.1	7.0	9.6	12	15	20	31	3231K	308	680
2400-6	180KC	6	2	YES	2400-6	115	1.4	1.6	1.9	2.6	2.9	4.7	6.7	8.5	11	13	17	27	5887K	229	889
2400-6	180KC	8	2	YES	2400-6	115	1.6	1.7	2.0	2.6	2.9	4.9	6.6	8.9	11	13	18	26	7858K	182	936
2400-6	180KC	10	2	YES	2400-6	115	1.7	1.9	2.1	2.8	3.1	4.8	6.8	8.5	11	13	17	27	9269K	151	964

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	80	1.6	2.6	4.7	9.1	12	25	40	55	70	87	120	190	500K	116	196
2400-4	60KC	4	1	NO	2400-4	80	1.6	2.4	3.8	7.0	9.2	19	29	40	50	64	85	140	929K	115	197
2400-4	60KC	6	1	NO	2400-4	40	1.6	2.2	3.5	6.5	7.7	16	24	33	41	53	70	120	1619K	91	290
2400-4	60KC	8	1	NO	2400-4	40	1.8	2.4	3.5	6.1	7.2	15	23	30	41	49	65	110	2517K	76	302
2400-4	60KC	10	1	NO	2400-4	40	1.9	2.3	3.4	5.7	7.5	15	22	31	38	46	66	98	3154K	64	309
2400-5	120KC	3	1	NO	2400-5	80	1.5	2.1	3.3	5.9	7.4	16	24	33	42	51	70	110	500K	116	196
2400-5	120KC	4	1	NO	2400-5	80	1.5	2.0	2.8	4.8	6.1	12	18	25	31	39	52	82	929K	115	197
2400-5	120KC	6	1	NO	2400-5	40	1.5	2.0	2.8	4.6	5.4	11	16	21	26	33	44	70	1619K	91	290
2400-5	120KC	8	1	NO	2400-5	40	1.7	2.1	2.9	4.5	5.2	9.7	16	20	27	32	41	66	2517K	76	302
2400-5	120KC	10	1	NO	2400-5	40	1.8	2.1	2.8	4.4	5.5	11	15	21	25	30	43	63	3154K	64	309
2400-6	180KC	3	1	NO	2400-6	80	1.4	1.9	2.9	5.2	6.4	13	20	28	35	43	58	91	500K	116	196
2400-6	180KC	4	1	NO	2400-6	80	1.4	1.9	2.6	4.3	5.4	11	15	21	26	33	44	69	929K	115	197
2400-6	180KC	6	1	NO	2400-6	40	1.5	1.9	2.6	4.2	4.8	8.9	14	18	22	29	38	60	1619K	91	290
2400-6	180KC	8	1	NO	2400-6	40	1.7	2.0	2.7	4.1	4.7	8.6	14	17	23	27	36	57	2517K	76	302
2400-6	180KC	10	1	NO	2400-6	40	1.8	2.1	2.7	4.0	5.0	9.0	13	18	22	26	37	54	3154K	64	309
2400-4	60KC	3	2	NO	2400-4	45	1.5	2.2	3.8	6.9	9.0	19	29	41	51	63	86	140	478K	78	208
2400-4	60KC	4	2	NO	2400-4	45	1.5	2.1	3.2	5.5	6.7	14	21	30	37	45	64	97	839K	77	263
2400-4	60KC	6	2	NO	2400-4	25	1.5	2.1	3.0	5.1	6.4	12	19	24	30	37	53	77	1545K	57	327
2400-4	60KC	8	2	NO	2400-4	25	1.7	2.2	2.9	4.9	5.7	12	17	22	26	31	47	70	2070K	45	323
2400-4	60KC	10	2	NO	2400-4	25	1.8	2.2	3.0	5.1	6.0	10	15	22	27	32	42	61	2453K	37	332
2400-5	120KC	3	2	NO	2400-5	45	1.4	1.8	2.8	4.7	5.8	12	18	25	31	37	51	80	478K	78	208
2400-5	120KC	4	2	NO	2400-5	45	1.4	1.8	2.5	4.0	4.7	9.1	14	19	24	28	40	60	839K	77	263
2400-5	120KC	6	2	NO	2400-5	25	1.5	1.9	2.5	3.9	4.8	8.1	13	16	20	24	34	49	1545K	57	327
2400-5	120KC	8	2	NO	2400-5	25	1.6	2.0	2.5	3.9	4.5	8.3	12	15	18	21	31	46	2070K	45	323
2400-5	120KC	10	2	NO	2400-5	25	1.8	2.1	2.7	4.1	4.7	7.5	11	16	19	22	29	42	2453K	37	332
2400-6	180KC	3	2	NO	2400-6	45	1.4	1.8	2.6	4.3	5.4	11	16	22	28	34	46	72	478K	78	208
2400-6	180KC	4	2	NO	2400-6	45	1.4	1.8	2.4	3.8	4.4	8.4	13	18	22	26	36	55	839K	77	263
2400-6	180KC	6	2	NO	2400-6	25	1.5	1.8	2.4	3.7	4.5	7.9	12	16	19	23	33	48	1545K	57	327
2400-6	180KC	8	2	NO	2400-6	25	1.6	2.0	2.5	3.8	4.3	8.0	12	15	18	21	30	44	2070K	45	323
2400-6	180KC	10	2	NO	2400-6	25	1.8	2.0	2.6	3.9	4.6	7.3	10	15	18	21	28	40	2453K	37	332
2400-4	60KC	3	2	YES	2400-4	45	1.4	2.0	3.2	5.8	7.4	15	23	33	41	50	68	110	478K	78	208
2400-4	60KC	4	2	YES	2400-4	45	1.4	1.9	2.8	4.7	5.5	12	17	24	30	36	51	77	839K	77	263
2400-4	60KC	6	2	YES	2400-4	25	1.5	1.9	2.6	4.3	5.2	9.9	15	21	25	31	43	66	1545K	57	327
2400-4	60KC	8	2	YES	2400-4	25	1.7	2.1	2.8	4.3	5.0	9.4	15	19	25	31	40	65	2070K	45	323
2400-4	60KC	10	2	YES	2400-4	25	1.8	2.1	2.7	4.2	5.3	9.8	14	20	25	29	42	61	2453K	37	332
2400-5	120KC	3	2	YES	2400-5	45	1.4	1.7	2.5	4.0	4.9	9.3	15	20	25	30	41	64	478K	78	208
2400-5	120KC	4	2	YES	2400-5	45	1.4	1.7	2.3	3.5	4.1	7.6	12	16	20	23	32	49	839K	77	263
2400-5	120KC	6	2	YES	2400-5	25	1.5	1.8	2.3	3.4	4.1	7.2	11	14	18	21	29	44	1545K	57	327
2400-5	120KC	8	2	YES	2400-5	25	1.6	2.0	2.5	3.6	4.1	7.1	11	14	18	21	28	44	2070K	45	323
2400-5	120KC	10	2	YES	2400-5	25	1.8	2.0	2.5	3.6	4.3	7.4	11	15	18	21	29	42	2453K	37	332
2400-6	180KC	3	2	YES	2400-6	45	1.4	1.7	2.4	3.9	4.8	8.9	14	19	24	29	39	61	478K	78	208
2400-6	180KC	4	2	YES	2400-6	45	1.4	1.7	2.2	3.4	4.0	7.3	11	15	19	22	31	47	839K	77	263
2400-6	180KC	6	2	YES	2400-6	25	1.5	1.8	2.3	3.4	4.0	7.0	9.9	14	17	20	28	43	1545K	57	327
2400-6	180KC	8	2	YES	2400-6	25	1.6	1.9	2.5	3.5	4.0	6.9	11	14	17	21	27	43	2070K	45	323
2400-6	180KC	10	2	YES	2400-6	25	1.8	2.0	2.5	3.5	4.2	7.3	10	14	17	20	28	40	2453K	37	332

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	30	2.5	5.3	12	24	31	65	110	150	190	230	CE	CE	199K	46	95
2400-4	60KC	4	1	NO	2400-4	30	2.3	4.2	8.1	18	22	47	76	100	140	170	250	410	372K	46	88
2400-4	60KC	6	1	NO	2400-4	25	2.1	3.9	7.2	15	18	38	61	81	110	140	200	300	705K	36	107
2400-4	60KC	8	1	NO	2400-4	25	2.3	3.8	6.7	14	18	38	56	81	110	120	180	270	986K	30	117
2400-4	60KC	10	1	NO	2400-4	25	2.2	4.0	6.9	14	17	35	57	76	94	120	180	270	1229K	25	124
2400-5	120KC	3	1	NO	2400-5	30	1.9	3.5	6.6	14	18	36	57	80	100	130	CE	CE	199K	46	95
2400-5	120KC	4	1	NO	2400-5	30	1.8	2.9	5.1	11	13	27	42	56	74	89	140	230	372K	46	88
2400-5	120KC	6	1	NO	2400-5	25	1.8	2.9	4.7	8.6	11	22	35	46	61	73	110	170	705K	36	107
2400-5	120KC	8	1	NO	2400-5	25	2.0	2.8	4.5	8.1	11	22	32	46	57	68	97	150	986K	30	117
2400-5	120KC	10	1	NO	2400-5	25	2.0	3.0	4.7	8.4	11	21	33	43	54	68	110	150	1229K	25	124
2400-6	180KC	3	1	NO	2400-6	30	1.7	2.9	5.2	11	13	27	42	59	74	92	CE	CE	199K	46	95
2400-6	180KC	4	1	NO	2400-6	30	1.7	2.5	4.2	8.1	9.8	20	32	42	56	67	110	170	372K	46	88
2400-6	180KC	6	1	NO	2400-6	25	1.7	2.5	3.9	7.0	8.3	17	27	36	47	56	83	130	705K	36	107
2400-6	180KC	8	1	NO	2400-6	25	1.9	2.6	3.9	6.7	8.7	18	25	36	45	53	75	120	986K	30	117
2400-6	180KC	10	1	NO	2400-6	25	1.9	2.8	4.1	7.0	8.4	17	26	34	42	53	77	120	1229K	25	124
2400-4	60KC	3	2	NO	2400-4	20	2.1	4.2	8.6	18	23	48	77	110	140	170	CE	CE	190K	30	95
2400-4	60KC	4	2	NO	2400-4	20	2.0	3.5	6.3	13	17	35	57	75	97	130	190	320	334K	30	98
2400-4	60KC	6	2	NO	2400-4	20	2.0	3.3	6.0	12	15	28	46	61	75	91	140	200	596K	22	113
2400-4	60KC	8	2	NO	2400-4	15	2.1	3.4	5.4	11	14	25	42	55	68	81	110	190	827K	18	129
2400-4	60KC	10	2	NO	2400-4	15	2.2	3.2	5.6	9.3	12	25	37	48	59	70	110	170	981K	15	134
2400-5	120KC	3	2	NO	2400-5	20	1.7	2.9	5.2	9.9	13	27	42	59	74	90	CE	CE	190K	30	95
2400-5	120KC	4	2	NO	2400-5	20	1.7	2.5	4.1	7.7	9.7	20	32	42	54	67	110	180	334K	30	98
2400-5	120KC	6	2	NO	2400-5	20	1.7	2.6	4.0	7.1	8.5	16	26	34	42	51	74	110	596K	22	113
2400-5	120KC	8	2	NO	2400-5	15	1.9	2.6	3.8	6.9	8.1	15	24	31	38	46	60	110	827K	18	129
2400-5	120KC	10	2	NO	2400-5	15	2.0	2.6	4.0	6.1	7.1	15	21	28	34	40	62	91	981K	15	134
2400-6	180KC	3	2	NO	2400-6	20	1.6	2.5	4.2	7.8	10	21	32	44	55	67	CE	CE	190K	30	95
2400-6	180KC	4	2	NO	2400-6	20	1.6	2.2	3.5	6.3	7.8	16	25	32	42	51	81	140	334K	30	98
2400-6	180KC	6	2	NO	2400-6	20	1.7	2.3	3.5	5.9	7.1	13	21	27	33	40	57	84	596K	22	113
2400-6	180KC	8	2	NO	2400-6	15	1.8	2.5	3.4	5.9	6.9	12	20	25	31	36	48	79	827K	18	129
2400-6	180KC	10	2	NO	2400-6	15	1.9	2.4	3.6	5.3	6.2	13	18	23	28	33	49	72	981K	15	134
2400-4	60KC	3	2	YES	2400-4	20	2.0	3.6	7.1	15	19	39	62	87	110	140	CE	CE	190K	30	95
2400-4	60KC	4	2	YES	2400-4	20	1.9	3.0	5.3	11	14	29	45	60	77	96	160	260	334K	30	98
2400-4	60KC	6	2	YES	2400-4	20	1.9	3.0	4.9	9.2	12	23	38	49	67	80	130	190	596K	22	113
2400-4	60KC	8	2	YES	2400-4	15	2.0	3.0	4.8	8.8	11	23	36	51	64	76	110	170	827K	18	129
2400-4	60KC	10	2	YES	2400-4	15	2.0	3.2	5.1	9.3	12	24	37	48	59	70	110	170	981K	15	134
2400-5	120KC	3	2	YES	2400-5	20	1.6	2.5	4.4	8.1	11	22	34	47	58	71	CE	CE	190K	30	95
2400-5	120KC	4	2	YES	2400-5	20	1.6	2.3	3.5	6.3	8.0	16	25	33	43	53	83	140	334K	30	98
2400-5	120KC	6	2	YES	2400-5	20	1.7	2.3	3.4	5.8	6.9	14	22	28	38	45	70	110	596K	22	113
2400-5	120KC	8	2	YES	2400-5	15	1.8	2.4	3.4	5.7	6.9	14	21	29	36	43	60	95	827K	18	129
2400-5	120KC	10	2	YES	2400-5	15	1.9	2.6	3.7	6.1	7.1	14	21	28	34	40	59	91	981K	15	134
2400-6	180KC	3	2	YES	2400-6	20	1.5	2.2	3.6	6.4	8.2	17	25	35	44	53	CE	CE	190K	30	95
2400-6	180KC	4	2	YES	2400-6	20	1.6	2.1	3.0	5.2	6.5	13	20	26	33	41	64	110	334K	30	98
2400-6	180KC	6	2	YES	2400-6	20	1.6	2.1	3.0	4.9	5.8	11	17	23	30	35	55	82	596K	22	113
2400-6	180KC	8	2	YES	2400-6	15	1.8	2.3	3.1	5.0	6.0	12	17	24	30	35	48	77	827K	18	129
2400-6	180KC	10	2	YES	2400-6	15	1.9	2.4	3.4	5.3	6.2	12	18	23	28	33	49	72	981K	15	134

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	15	5.6	15	31	66	85	190	300	CE	CE	CE	CE	CE	79K	18	30
2400-4	60KC	4	1	NO	2400-4	15	4.2	11	22	46	59	140	210	330	440	CE	CE	CE	148K	18	36
2400-4	60KC	6	1	NO	2400-4	10	3.9	8.5	18	37	50	110	190	250	310	380	550	CE	267K	14	44
2400-4	60KC	8	1	NO	2400-4	10	3.7	8.2	17	37	46	99	160	220	270	330	460	720	401K	12	47
2400-4	60KC	10	1	NO	2400-4	10	3.9	8.1	17	35	43	93	170	220	280	330	440	720	477K	10	51
2400-5	120KC	3	1	NO	2400-5	15	3.5	8.2	17	36	46	98	160	CE	CE	CE	CE	CE	79K	18	30
2400-5	120KC	4	1	NO	2400-5	15	2.8	6.1	12	25	33	71	110	180	240	CE	CE	CE	148K	18	36
2400-5	120KC	6	1	NO	2400-5	10	2.8	5.2	9.9	21	28	58	99	140	170	210	300	CE	267K	14	44
2400-5	120KC	8	1	NO	2400-5	10	2.7	5.2	9.8	21	26	54	87	120	150	180	250	390	401K	12	47
2400-5	120KC	10	1	NO	2400-5	10	2.9	5.2	9.6	20	24	51	90	120	150	180	240	390	477K	10	51
2400-6	180KC	3	1	NO	2400-6	15	2.9	6.3	13	26	33	72	120	CE	CE	CE	CE	CE	79K	18	30
2400-6	180KC	4	1	NO	2400-6	15	2.4	4.8	9.1	19	25	52	80	130	180	CE	CE	CE	148K	18	36
2400-6	180KC	6	1	NO	2400-6	10	2.4	4.3	7.7	16	21	44	74	99	130	160	230	CE	267K	14	44
2400-6	180KC	8	1	NO	2400-6	10	2.5	4.3	7.9	16	20	41	65	89	110	140	190	290	401K	12	47
2400-6	180KC	10	1	NO	2400-6	10	2.7	4.4	7.7	16	19	39	67	89	110	140	180	300	477K	10	51
2400-4	60KC	3	2	NO	2400-4	10	4.3	11	23	49	64	140	220	CE	CE	CE	CE	CE	76K	12	33
2400-4	60KC	4	2	NO	2400-4	10	3.5	8.1	17	35	46	99	180	270	370	CE	CE	CE	127K	12	36
2400-4	60KC	6	2	NO	2400-4	10	3.3	7.0	14	29	39	75	130	170	210	330	510	CE	215K	9	42
2400-4	60KC	8	2	NO	2400-4	10	3.4	6.2	13	24	35	67	99	160	190	230	300	CE	270K	7	45
2400-4	60KC	10	2	NO	2400-4	10	3.2	6.5	12	25	31	58	110	140	170	200	270	660	360K	6	47
2400-5	120KC	3	2	NO	2400-5	10	2.8	6.1	13	26	34	71	120	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	4	2	NO	2400-5	10	2.4	4.9	9.3	19	25	53	93	150	200	CE	CE	CE	127K	12	36
2400-5	120KC	6	2	NO	2400-5	10	2.5	4.4	8.1	16	21	40	66	87	110	180	280	CE	215K	9	42
2400-5	120KC	8	2	NO	2400-5	10	2.6	4.1	7.7	14	19	36	53	80	99	120	160	CE	270K	7	45
2400-5	120KC	10	2	NO	2400-5	10	2.5	4.3	6.7	14	17	32	54	72	89	110	140	360	360K	6	47
2400-6	180KC	3	2	NO	2400-6	10	2.4	4.8	9.4	20	25	52	82	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	4	2	NO	2400-6	10	2.2	4.0	7.2	15	19	40	68	110	150	CE	CE	CE	127K	12	36
2400-6	180KC	6	2	NO	2400-6	10	2.2	3.7	6.5	13	17	30	50	65	81	140	220	CE	215K	9	42
2400-6	180KC	8	2	NO	2400-6	10	2.4	3.5	6.3	11	15	28	40	61	75	89	120	CE	270K	7	45
2400-6	180KC	10	2	NO	2400-6	10	2.3	3.8	5.6	12	14	25	42	55	68	81	110	290	360K	6	47
2400-4	60KC	3	2	YES	2400-4	10	3.7	8.6	19	39	51	110	170	CE	CE	CE	CE	CE	76K	12	33
2400-4	60KC	4	2	YES	2400-4	10	3.0	6.8	14	28	37	80	150	220	290	CE	CE	CE	127K	12	36
2400-4	60KC	6	2	YES	2400-4	10	2.9	5.7	11	24	31	66	130	170	210	270	410	CE	215K	9	42
2400-4	60KC	8	2	YES	2400-4	10	3.0	6.1	12	24	30	64	99	160	190	230	300	CE	270K	7	45
2400-4	60KC	10	2	YES	2400-4	10	3.2	6.0	12	24	31	58	110	140	170	200	270	530	360K	6	47
2400-5	120KC	3	2	YES	2400-5	10	2.5	5.1	11	21	27	57	89	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	4	2	YES	2400-5	10	2.2	4.1	7.6	16	20	42	77	120	160	CE	CE	CE	127K	12	36
2400-5	120KC	6	2	YES	2400-5	10	2.2	3.7	6.5	13	17	35	66	87	110	140	220	CE	215K	9	42
2400-5	120KC	8	2	YES	2400-5	10	2.3	4.0	7.0	14	17	35	53	80	99	120	160	CE	270K	7	45
2400-5	120KC	10	2	YES	2400-5	10	2.5	4.0	6.7	14	17	32	54	72	89	110	140	290	360K	6	47
2400-6	180KC	3	2	YES	2400-6	10	2.2	4.1	7.7	16	20	42	65	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	4	2	YES	2400-6	10	2.0	3.4	6.0	12	16	32	59	85	120	CE	CE	CE	127K	12	36
2400-6	180KC	6	2	YES	2400-6	10	2.1	3.2	5.3	11	14	27	50	65	81	110	170	CE	215K	9	42
2400-6	180KC	8	2	YES	2400-6	10	2.2	3.5	5.8	11	14	27	40	61	75	89	120	CE	270K	7	45
2400-6	180KC	10	2	YES	2400-6	10	2.3	3.6	5.6	11	14	25	42	55	68	81	110	230	360K	6	47

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	350	1.3	1.4	1.8	2.9	3.6	6.7	11	15	18	23	31	49	2014K	500	2344
2400-4	60KC	4	1	NO	2400-4	350	1.3	1.5	1.8	2.7	3.3	5.9	9.0	12	15	19	25	39	3749K	500	2344
2400-4	60KC	6	1	NO	2400-4	350	1.5	1.7	2.0	2.6	3.2	5.5	7.5	11	13	16	22	35	8041K	500	2291
2400-4	60KC	8	1	NO	2400-4	350	1.6	1.8	2.1	2.7	3.0	5.1	7.7	9.7	13	16	20	32	11748K	500	2344
2400-4	60KC	10	1	NO	2400-4	350	1.8	2.0	2.3	2.9	3.2	5.3	7.0	9.9	12	14	21	30	15227K	500	2329
2400-5	120KC	3	1	NO	2400-5	350	1.3	1.4	1.7	2.6	3.2	5.6	8.5	12	15	19	25	40	2014K	500	2344
2400-5	120KC	4	1	NO	2400-5	350	1.3	1.5	1.7	2.4	3.0	5.1	7.6	9.7	12	16	20	32	3749K	500	2344
2400-5	120KC	6	1	NO	2400-5	350	1.5	1.6	1.9	2.4	2.9	4.8	6.5	9.0	11	13	19	29	8041K	500	2291
2400-5	120KC	8	1	NO	2400-5	350	1.6	1.8	2.0	2.6	2.8	4.6	6.7	8.4	12	13	17	27	11748K	500	2344
2400-5	120KC	10	1	NO	2400-5	350	1.7	1.9	2.2	2.7	3.0	4.7	6.3	8.7	11	13	18	25	15227K	500	2329
2400-6	180KC	3	1	NO	2400-6	350	1.3	1.4	1.7	2.5	3.0	5.3	8.0	12	14	18	23	36	2014K	500	2344
2400-6	180KC	4	1	NO	2400-6	350	1.3	1.5	1.7	2.4	2.9	4.8	7.2	9.1	12	15	19	30	3749K	500	2344
2400-6	180KC	6	1	NO	2400-6	350	1.5	1.6	1.9	2.3	2.8	4.6	6.2	8.5	11	13	17	27	8041K	500	2291
2400-6	180KC	8	1	NO	2400-6	350	1.6	1.8	2.0	2.5	2.7	4.4	6.4	8.0	11	13	16	26	11748K	500	2344
2400-6	180KC	10	1	NO	2400-6	350	1.7	1.9	2.2	2.7	2.9	4.6	6.0	8.2	9.9	12	17	24	15227K	500	2329
2400-4	60KC	3	2	NO	2400-4	350	1.2	1.4	1.7	2.7	3.1	5.7	8.5	12	15	19	25	39	2014K	500	2107
2400-4	60KC	4	2	NO	2400-4	350	1.3	1.5	1.7	2.4	3.0	5.0	7.6	9.7	12	16	20	32	3935K	500	2344
2400-4	60KC	6	2	NO	2400-4	250	1.5	1.6	1.9	2.4	2.9	4.9	6.7	9.1	11	14	19	28	7490K	500	2495
2400-4	60KC	8	2	NO	2400-4	250	1.6	1.7	2.0	2.5	2.9	4.7	6.4	8.7	11	14	17	25	10663K	306	2358
2400-4	60KC	10	2	NO	2400-4	150	1.7	1.9	2.2	2.7	3.0	4.6	6.5	8.3	10	13	18	26	13645K	384	2562
2400-5	120KC	3	2	NO	2400-5	350	1.2	1.4	1.7	2.6	2.9	5.2	7.7	11	14	17	22	35	2014K	500	2107
2400-5	120KC	4	2	NO	2400-5	350	1.3	1.5	1.7	2.3	2.8	4.7	6.9	8.8	11	14	18	29	3935K	500	2344
2400-5	120KC	6	2	NO	2400-5	250	1.4	1.6	1.9	2.3	2.8	4.6	6.2	8.4	11	12	17	25	7490K	500	2495
2400-5	120KC	8	2	NO	2400-5	250	1.6	1.7	2.0	2.5	2.7	4.4	6.2	8.0	9.8	13	16	24	10663K	306	2358
2400-5	120KC	10	2	NO	2400-5	150	1.7	1.9	2.1	2.7	2.9	4.3	6.1	8.1	9.7	12	17	24	13645K	384	2562
2400-6	180KC	3	2	NO	2400-6	350	1.2	1.4	1.6	2.5	2.9	5.1	7.5	11	13	16	22	33	2014K	500	2107
2400-6	180KC	4	2	NO	2400-6	350	1.3	1.5	1.7	2.3	2.8	4.6	6.7	8.6	11	14	18	28	3935K	500	2344
2400-6	180KC	6	2	NO	2400-6	250	1.4	1.6	1.8	2.3	2.7	4.5	6.0	8.1	9.8	12	17	24	7490K	500	2495
2400-6	180KC	8	2	NO	2400-6	250	1.6	1.7	2.0	2.5	2.7	4.3	6.2	7.8	9.5	12	16	24	10663K	306	2358
2400-6	180KC	10	2	NO	2400-6	150	1.7	1.9	2.1	2.6	2.9	4.2	5.9	8.0	9.6	12	16	23	13645K	384	2562
2400-4	60KC	3	2	YES	2400-4	350	1.2	1.4	1.7	2.6	2.9	5.1	7.5	11	13	17	22	34	2014K	500	2107
2400-4	60KC	4	2	YES	2400-4	350	1.3	1.5	1.7	2.3	2.8	4.6	6.8	8.7	11	14	18	28	3935K	500	2344
2400-4	60KC	6	2	YES	2400-4	250	1.5	1.6	1.8	2.3	2.8	4.5	6.0	8.2	9.9	12	17	24	7490K	500	2495
2400-4	60KC	8	2	YES	2400-4	250	1.6	1.7	2.0	2.5	2.7	4.3	6.2	7.8	9.5	12	16	25	10663K	306	2358
2400-4	60KC	10	2	YES	2400-4	150	1.7	1.9	2.2	2.6	2.9	4.2	5.9	8.1	9.7	12	16	23	13645K	384	2562
2400-5	120KC	3	2	YES	2400-5	350	1.2	1.4	1.7	2.5	2.8	4.9	7.3	9.9	13	16	21	32	2014K	500	2107
2400-5	120KC	4	2	YES	2400-5	350	1.3	1.5	1.7	2.3	2.7	4.5	6.6	8.4	11	13	17	27	3935K	500	2344
2400-5	120KC	6	2	YES	2400-5	250	1.4	1.6	1.8	2.3	2.7	4.4	5.9	7.9	9.5	12	16	23	7490K	500	2495
2400-5	120KC	8	2	YES	2400-5	250	1.6	1.7	2.0	2.4	2.7	4.2	6.1	7.6	9.2	12	15	24	10663K	306	2358
2400-5	120KC	10	2	YES	2400-5	150	1.7	1.9	2.1	2.6	2.9	4.1	5.8	7.9	9.4	11	16	22	13645K	384	2562
2400-6	180KC	3	2	YES	2400-6	350	1.2	1.4	1.6	2.5	2.8	4.9	7.2	9.8	13	16	21	32	2014K	500	2107
2400-6	180KC	4	2	YES	2400-6	350	1.3	1.4	1.7	2.3	2.7	4.4	6.5	8.3	11	13	17	27	3935K	500	2344
2400-6	180KC	6	2	YES	2400-6	250	1.4	1.6	1.8	2.3	2.7	4.3	5.8	7.8	9.4	12	16	23	7490K	500	2495
2400-6	180KC	8	2	YES	2400-6	250	1.6	1.7	2.0	2.4	2.7	4.2	6.0	7.5	9.1	12	15	23	10663K	306	2358
2400-6	180KC	10	2	YES	2400-6	150	1.7	1.9	2.1	2.6	2.8	4.1	5.7	7.8	9.3	11	16	22	13645K	384	2562

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	85	1.4	2.2	3.5	7.4	8.9	21	33	44	59	70	110	160	503K	125	805
2400-4	60KC	4	1	NO	2400-4	85	1.5	2.0	3.1	5.6	6.9	16	23	33	41	50	71	120	955K	125	780
2400-4	60KC	6	1	NO	2400-4	85	1.6	2.0	2.9	5.1	6.0	13	20	26	35	42	57	90	2014K	125	778
2400-4	60KC	8	1	NO	2400-4	85	1.8	2.1	2.7	4.6	6.1	12	18	26	31	38	54	82	2975K	125	798
2400-4	60KC	10	1	NO	2400-4	85	1.9	2.3	2.9	4.7	5.5	11	18	23	32	38	49	81	3875K	125	791
2400-5	120KC	3	1	NO	2400-5	85	1.3	1.8	2.6	4.9	5.9	13	20	27	35	42	60	90	503K	125	805
2400-5	120KC	4	1	NO	2400-5	85	1.4	1.8	2.5	4.0	4.8	10	15	21	26	31	44	70	955K	125	780
2400-5	120KC	6	1	NO	2400-5	85	1.5	1.8	2.4	3.8	4.4	8.3	13	17	23	27	36	57	2014K	125	778
2400-5	120KC	8	1	NO	2400-5	85	1.7	1.9	2.4	3.6	4.6	8.3	12	17	21	25	35	53	2975K	125	798
2400-5	120KC	10	1	NO	2400-5	85	1.8	2.1	2.5	3.8	4.3	7.7	12	16	21	25	33	53	3875K	125	791
2400-6	180KC	3	1	NO	2400-6	85	1.3	1.7	2.4	4.3	5.1	11	17	22	30	35	50	76	503K	125	805
2400-6	180KC	4	1	NO	2400-6	85	1.4	1.7	2.3	3.6	4.3	8.6	13	18	22	27	37	59	955K	125	780
2400-6	180KC	6	1	NO	2400-6	85	1.5	1.7	2.3	3.5	4.0	7.4	12	15	20	23	31	48	2014K	125	778
2400-6	180KC	8	1	NO	2400-6	85	1.7	1.9	2.3	3.3	4.2	7.4	11	15	18	22	30	45	2975K	125	798
2400-6	180KC	10	1	NO	2400-6	85	1.8	2.0	2.4	3.5	3.9	6.9	11	14	18	22	28	45	3875K	125	791
2400-4	60KC	3	2	NO	2400-4	85	1.3	1.9	2.9	5.6	6.8	15	24	32	42	50	72	120	503K	125	670
2400-4	60KC	4	2	NO	2400-4	85	1.4	1.8	2.6	4.4	5.7	12	17	24	30	39	51	82	996K	125	669
2400-4	60KC	6	2	NO	2400-4	50	1.5	1.8	2.6	4.2	4.9	9.5	15	20	24	32	43	63	1916K	125	778
2400-4	60KC	8	2	NO	2400-4	50	1.7	1.9	2.5	3.9	4.5	9.0	13	17	24	29	37	55	2744K	115	819
2400-4	60KC	10	2	NO	2400-4	35	1.8	2.1	2.7	4.1	4.7	9.1	14	17	21	25	32	56	3517K	96	870
2400-5	120KC	3	2	NO	2400-5	85	1.3	1.7	2.3	3.9	4.7	9.4	15	20	26	31	43	68	503K	125	670
2400-5	120KC	4	2	NO	2400-5	85	1.3	1.7	2.2	3.4	4.2	7.7	12	16	19	25	33	52	996K	125	669
2400-5	120KC	6	2	NO	2400-5	50	1.5	1.7	2.2	3.4	3.9	6.9	11	14	17	22	28	41	1916K	125	778
2400-5	120KC	8	2	NO	2400-5	50	1.6	1.8	2.2	3.2	3.7	6.7	9.2	12	17	20	26	37	2744K	115	819
2400-5	120KC	10	2	NO	2400-5	35	1.8	2.0	2.4	3.5	3.9	6.9	9.7	13	15	18	23	39	3517K	96	870
2400-6	180KC	3	2	NO	2400-6	85	1.3	1.6	2.2	3.7	4.3	8.6	14	18	23	28	39	61	503K	125	670
2400-6	180KC	4	2	NO	2400-6	85	1.3	1.6	2.1	3.2	3.9	7.1	11	15	18	23	30	47	996K	125	669
2400-6	180KC	6	2	NO	2400-6	50	1.5	1.7	2.2	3.2	3.6	6.4	9.6	13	16	20	26	40	1916K	125	778
2400-6	180KC	8	2	NO	2400-6	50	1.6	1.8	2.2	3.1	3.6	6.5	8.9	12	16	19	25	36	2744K	115	819
2400-6	180KC	10	2	NO	2400-6	35	1.8	2.0	2.4	3.4	3.8	6.5	9.4	12	15	17	22	37	3517K	96	870
2400-4	60KC	3	2	YES	2400-4	85	1.3	1.8	2.6	4.7	5.6	12	19	25	34	40	57	91	503K	125	670
2400-4	60KC	4	2	YES	2400-4	85	1.4	1.7	2.3	3.8	4.8	9.3	14	19	24	31	41	66	996K	125	669
2400-4	60KC	6	2	YES	2400-4	50	1.5	1.7	2.3	3.6	4.1	7.6	12	16	21	25	33	53	1916K	125	778
2400-4	60KC	8	2	YES	2400-4	50	1.7	1.9	2.3	3.4	4.3	7.7	11	16	19	23	33	48	2744K	115	819
2400-4	60KC	10	2	YES	2400-4	35	1.8	2.0	2.4	3.6	4.0	7.2	12	15	20	23	30	49	3517K	96	870
2400-5	120KC	3	2	YES	2400-5	85	1.3	1.6	2.1	3.4	4.0	7.8	12	16	21	25	35	55	503K	125	670
2400-5	120KC	4	2	YES	2400-5	85	1.3	1.6	2.0	3.0	3.7	6.6	9.4	13	16	21	27	42	996K	125	669
2400-5	120KC	6	2	YES	2400-5	50	1.5	1.7	2.1	3.0	3.4	5.9	8.7	12	15	18	23	36	1916K	125	778
2400-5	120KC	8	2	YES	2400-5	50	1.6	1.8	2.1	3.0	3.6	6.1	8.3	12	14	17	24	34	2744K	115	819
2400-5	120KC	10	2	YES	2400-5	35	1.8	2.0	2.3	3.2	3.5	5.9	8.7	11	15	18	23	36	3517K	96	870
2400-6	180KC	3	2	YES	2400-6	85	1.3	1.6	2.1	3.3	3.9	7.5	12	15	20	24	33	52	503K	125	670
2400-6	180KC	4	2	YES	2400-6	85	1.3	1.6	2.0	2.9	3.6	6.4	9.0	13	16	20	26	40	996K	125	669
2400-6	180KC	6	2	YES	2400-6	50	1.5	1.7	2.1	3.0	3.3	5.7	8.4	11	15	17	23	35	1916K	125	778
2400-6	180KC	8	2	YES	2400-6	50	1.6	1.8	2.1	2.9	3.5	5.9	8.1	12	14	16	23	33	2744K	115	819
2400-6	180KC	10	2	YES	2400-6	35	1.8	2.0	2.3	3.1	3.5	5.8	8.5	11	15	17	22	34	3517K	96	870

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	35	2.1	4.3	8.3	20	24	53	83	120	150	200	260	CE	201K	50	333
2400-4	60KC	4	1	NO	2400-4	35	1.9	3.4	6.3	15	18	38	62	83	120	140	180	340	402K	50	333
2400-4	60KC	6	1	NO	2400-4	35	1.9	3.1	5.5	11	16	32	48	70	87	110	160	240	805K	50	332
2400-4	60KC	8	1	NO	2400-4	35	2.1	2.9	5.6	11	14	29	47	62	78	100	140	210	1151K	50	332
2400-4	60KC	10	1	NO	2400-4	35	2.2	3.0	5.1	9.9	14	29	43	63	78	93	140	200	1553K	50	338
2400-5	120KC	3	1	NO	2400-5	35	1.7	2.9	5.1	11	14	30	46	65	82	110	140	CE	201K	50	333
2400-5	120KC	4	1	NO	2400-5	35	1.7	2.5	4.1	8.5	11	22	35	46	63	75	99	190	402K	50	333
2400-5	120KC	6	1	NO	2400-5	35	1.7	2.4	3.8	6.8	9.1	19	27	40	49	58	84	130	805K	50	332
2400-5	120KC	8	1	NO	2400-5	35	1.8	2.3	3.9	6.9	8.3	17	27	36	44	56	76	120	1151K	50	332
2400-5	120KC	10	1	NO	2400-5	35	2.0	2.5	3.7	6.4	8.5	17	25	36	44	53	76	120	1553K	50	338
2400-6	180KC	3	1	NO	2400-6	35	1.6	2.5	4.2	8.5	11	23	34	49	61	77	110	CE	201K	50	333
2400-6	180KC	4	1	NO	2400-6	35	1.6	2.2	3.4	6.7	8.1	17	27	35	47	56	74	140	402K	50	333
2400-6	180KC	6	1	NO	2400-6	35	1.6	2.2	3.2	5.6	7.3	15	21	30	37	45	64	98	805K	50	332
2400-6	180KC	8	1	NO	2400-6	35	1.8	2.2	3.4	5.7	6.7	14	21	28	34	43	58	87	1151K	50	332
2400-6	180KC	10	1	NO	2400-6	35	1.9	2.3	3.3	5.4	7.0	14	20	28	35	41	58	87	1553K	50	338
2400-4	60KC	3	2	NO	2400-4	35	1.8	3.4	6.3	14	18	40	61	84	120	140	200	CE	201K	50	286
2400-4	60KC	4	2	NO	2400-4	35	1.7	2.8	5.0	11	13	28	45	59	80	96	140	240	399K	50	285
2400-4	60KC	6	2	NO	2400-4	35	1.7	2.7	4.5	8.7	12	22	36	49	61	74	110	170	761K	50	321
2400-4	60KC	8	2	NO	2400-4	25	1.9	2.6	4.2	8.4	10	23	33	43	53	63	97	150	1096K	46	344
2400-4	60KC	10	2	NO	2400-4	25	2.0	2.7	4.4	8.2	11	19	27	43	53	64	84	130	1394K	38	354
2400-5	120KC	3	2	NO	2400-5	35	1.6	2.4	4.0	8.1	9.9	22	34	46	62	74	110	CE	201K	50	286
2400-5	120KC	4	2	NO	2400-5	35	1.5	2.2	3.4	6.4	7.7	16	25	33	45	53	76	130	399K	50	285
2400-5	120KC	6	2	NO	2400-5	35	1.6	2.1	3.2	5.6	7.2	13	21	28	34	41	61	90	761K	50	321
2400-5	120KC	8	2	NO	2400-5	25	1.7	2.2	3.1	5.5	6.4	14	19	25	30	36	54	80	1096K	46	344
2400-5	120KC	10	2	NO	2400-5	25	1.8	2.3	3.2	5.5	6.6	12	16	25	31	36	47	70	1394K	38	354
2400-6	180KC	3	2	NO	2400-6	35	1.5	2.1	3.3	6.4	7.7	17	26	35	46	55	77	CE	201K	50	286
2400-6	180KC	4	2	NO	2400-6	35	1.5	2.0	2.9	5.2	6.2	13	20	26	34	40	57	97	399K	50	285
2400-6	180KC	6	2	NO	2400-6	35	1.5	2.0	2.9	4.7	5.9	11	17	22	27	32	47	68	761K	50	321
2400-6	180KC	8	2	NO	2400-6	25	1.7	2.1	2.8	4.7	5.4	11	15	20	24	28	42	62	1096K	46	344
2400-6	180KC	10	2	NO	2400-6	25	1.8	2.2	3.0	4.8	5.6	9.4	14	20	24	29	38	55	1394K	38	354
2400-4	60KC	3	2	YES	2400-4	35	1.7	3.0	5.3	12	14	32	49	67	90	110	160	CE	201K	50	286
2400-4	60KC	4	2	YES	2400-4	35	1.6	2.5	4.2	8.6	11	22	36	47	64	77	110	190	399K	50	285
2400-4	60KC	6	2	YES	2400-4	35	1.7	2.4	3.8	7.0	9.2	19	28	40	50	61	90	140	761K	50	321
2400-4	60KC	8	2	YES	2400-4	25	1.8	2.3	3.9	7.1	8.4	18	28	37	46	60	77	120	1096K	46	344
2400-4	60KC	10	2	YES	2400-4	25	2.0	2.4	3.7	6.5	8.7	18	26	38	47	55	79	130	1394K	38	354
2400-5	120KC	3	2	YES	2400-5	35	1.5	2.2	3.4	6.7	8.1	18	27	37	49	58	83	CE	201K	50	286
2400-5	120KC	4	2	YES	2400-5	35	1.5	2.0	2.9	5.4	6.4	13	20	27	36	42	60	110	399K	50	285
2400-5	120KC	6	2	YES	2400-5	35	1.6	2.0	2.8	4.6	5.8	12	17	23	29	34	51	75	761K	50	321
2400-5	120KC	8	2	YES	2400-5	25	1.7	2.0	3.0	4.7	5.5	11	17	22	27	34	44	66	1096K	46	344
2400-5	120KC	10	2	YES	2400-5	25	1.8	2.1	2.9	4.5	5.8	11	16	22	27	32	45	68	1394K	38	354
2400-6	180KC	3	2	YES	2400-6	35	1.4	2.0	2.9	5.3	6.4	14	21	28	37	44	61	CE	201K	50	286
2400-6	180KC	4	2	YES	2400-6	35	1.5	1.8	2.6	4.4	5.2	10	16	21	27	32	46	77	399K	50	285
2400-6	180KC	6	2	YES	2400-6	35	1.5	1.9	2.6	4.0	4.9	9.1	13	19	23	27	40	59	761K	50	321
2400-6	180KC	8	2	YES	2400-6	25	1.7	2.0	2.8	4.2	4.8	8.8	14	18	22	28	36	53	1096K	46	344
2400-6	180KC	10	2	YES	2400-6	25	1.8	2.1	2.7	4.1	5.1	9.1	13	18	22	26	37	55	1394K	38	354

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-4	60KC	3	1	NO	2400-4	20	4.2	11	24	52	68	150	240	CE	CE	CE	CE	CE	80K	20	125
2400-4	60KC	4	1	NO	2400-4	20	3.3	8.3	18	37	47	110	170	260	360	440	CE	CE	161K	20	125
2400-4	60KC	6	1	NO	2400-4	20	3.0	7.2	15	31	39	84	140	190	240	310	420	730	322K	20	124
2400-4	60KC	8	1	NO	2400-4	20	2.9	6.5	13	28	35	76	130	170	210	270	370	590	456K	20	129
2400-4	60KC	10	1	NO	2400-4	20	2.9	6.0	13	28	35	75	130	170	210	250	330	510	615K	20	131
2400-5	120KC	3	1	NO	2400-5	20	2.8	6.4	13	28	36	79	130	CE	CE	CE	CE	CE	80K	20	125
2400-5	120KC	4	1	NO	2400-5	20	2.4	5.0	9.7	21	26	59	87	140	190	240	CE	CE	161K	20	125
2400-5	120KC	6	1	NO	2400-5	20	2.3	4.5	8.5	18	22	46	74	110	130	170	220	390	322K	20	124
2400-5	120KC	8	1	NO	2400-5	20	2.2	4.2	7.7	16	20	42	66	88	110	150	200	320	456K	20	129
2400-5	120KC	10	1	NO	2400-5	20	2.4	4.0	7.7	16	20	41	67	88	110	140	180	280	615K	20	131
2400-6	180KC	3	1	NO	2400-6	20	2.4	5.0	9.6	21	27	58	90	CE	CE	CE	CE	CE	80K	20	125
2400-6	180KC	4	1	NO	2400-6	20	2.1	4.0	7.4	15	20	43	64	99	140	170	CE	CE	161K	20	125
2400-6	180KC	6	1	NO	2400-6	20	2.1	3.7	6.6	13	16	34	55	74	92	120	170	290	322K	20	124
2400-6	180KC	8	1	NO	2400-6	20	2.1	3.5	6.1	12	15	31	49	66	82	110	150	230	456K	20	129
2400-6	180KC	10	1	NO	2400-6	20	2.2	3.5	6.3	13	15	31	50	66	81	97	130	210	615K	20	131
2400-4	60KC	3	2	NO	2400-4	20	3.4	8.2	18	39	49	120	180	CE	CE	CE	CE	CE	80K	20	105
2400-4	60KC	4	2	NO	2400-4	20	2.8	6.3	13	27	37	79	130	190	260	320	CE	CE	158K	20	121
2400-4	60KC	6	2	NO	2400-4	20	2.7	5.6	12	23	30	60	110	140	170	210	330	570	300K	20	114
2400-4	60KC	8	2	NO	2400-4	15	2.7	5.4	9.9	22	27	52	90	120	150	180	240	440	436K	18	132
2400-4	60KC	10	2	NO	2400-4	15	2.7	4.9	11	19	23	52	77	110	130	160	240	360	554K	15	135
2400-5	120KC	3	2	NO	2400-5	20	2.3	4.9	9.5	21	26	59	94	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	NO	2400-5	20	2.1	3.9	7.2	15	20	42	65	100	140	170	CE	CE	158K	20	121
2400-5	120KC	6	2	NO	2400-5	20	2.1	3.6	6.7	13	17	32	54	71	88	110	180	300	300K	20	114
2400-5	120KC	8	2	NO	2400-5	15	2.2	3.6	5.9	13	15	28	48	63	77	92	130	240	436K	18	132
2400-5	120KC	10	2	NO	2400-5	15	2.2	3.4	6.1	11	13	28	41	54	67	80	130	190	554K	15	135
2400-6	180KC	3	2	NO	2400-6	20	2.0	3.9	7.2	16	19	43	68	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	NO	2400-6	20	1.9	3.2	5.6	11	15	31	48	73	98	130	CE	CE	158K	20	121
2400-6	180KC	6	2	NO	2400-6	20	1.9	3.1	5.3	9.8	13	24	40	52	65	77	130	220	300K	20	114
2400-6	180KC	8	2	NO	2400-6	15	2.0	3.2	4.9	9.5	12	21	36	46	57	68	90	180	436K	18	132
2400-6	180KC	10	2	NO	2400-6	15	2.1	3.0	5.1	8.3	9.8	22	31	41	50	60	92	140	554K	15	135
2400-4	60KC	3	2	YES	2400-4	20	2.9	6.8	14	32	39	89	150	CE	CE	CE	CE	CE	80K	20	105
2400-4	60KC	4	2	YES	2400-4	20	2.5	5.3	11	22	30	63	98	160	210	260	CE	CE	158K	20	121
2400-4	60KC	6	2	YES	2400-4	20	2.4	4.8	9.1	19	23	49	81	120	150	190	260	450	300K	20	114
2400-4	60KC	8	2	YES	2400-4	15	2.4	4.5	8.3	17	21	46	73	97	130	160	220	350	436K	18	132
2400-4	60KC	10	2	YES	2400-4	15	2.4	4.7	8.6	18	22	46	75	100	130	150	200	310	554K	15	135
2400-5	120KC	3	2	YES	2400-5	20	2.1	4.1	7.7	17	21	47	74	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	YES	2400-5	20	1.9	3.3	5.9	12	16	33	51	79	110	140	CE	CE	158K	20	121
2400-5	120KC	6	2	YES	2400-5	20	1.9	3.2	5.4	11	13	26	42	59	78	95	140	240	300K	20	114
2400-5	120KC	8	2	YES	2400-5	15	2.0	3.1	5.1	9.6	12	25	39	51	69	83	120	180	436K	18	132
2400-5	120KC	10	2	YES	2400-5	15	2.1	3.3	5.3	9.8	12	25	40	53	66	79	110	170	554K	15	135
2400-6	180KC	3	2	YES	2400-6	20	1.9	3.3	6.0	13	16	34	53	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	YES	2400-6	20	1.8	2.8	4.7	9.0	12	25	38	58	77	95	CE	CE	158K	20	121
2400-6	180KC	6	2	YES	2400-6	20	1.8	2.8	4.4	8.0	9.7	20	32	45	59	71	99	170	300K	20	114
2400-6	180KC	8	2	YES	2400-6	15	1.9	2.8	4.3	7.7	9.3	19	30	39	52	63	85	140	436K	18	132
2400-6	180KC	10	2	YES	2400-6	15	2.0	3.0	4.5	7.9	9.5	19	31	41	50	60	80	130	554K	15	135

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.3	1.4	1.7	2.3	2.7	5.2	7.9	11	14	16	23	34	2014K	500	5558
2400-5	120KC	4	1	NO	2400-5	350	1.3	1.5	1.7	2.3	2.5	4.3	6.4	9.0	11	13	19	27	4029K	500	5556
2400-5	120KC	6	1	NO	2400-5	350	1.5	1.6	1.9	2.4	2.7	4.0	5.9	8.3	10	12	17	25	8058K	500	5556
2400-5	120KC	8	1	NO	2400-5	350	1.6	1.8	2.0	2.6	2.8	4.2	5.5	7.7	9.2	12	16	25	12087K	500	5547
2400-5	120KC	10	1	NO	2400-5	300	1.7	1.9	2.2	2.7	3.0	4.3	5.7	7.0	9.4	11	16	23	16116K	500	5608
2400-6	180KC	3	1	NO	2400-6	350	1.3	1.4	1.6	2.2	2.6	4.9	7.4	9.5	13	15	22	32	2014K	500	5558
2400-6	180KC	4	1	NO	2400-6	350	1.3	1.5	1.7	2.2	2.5	4.1	6.1	8.5	11	13	18	26	4029K	500	5556
2400-6	180KC	6	1	NO	2400-6	350	1.5	1.6	1.9	2.4	2.6	3.9	5.7	7.9	9.5	12	16	23	8058K	500	5556
2400-6	180KC	8	1	NO	2400-6	350	1.6	1.8	2.0	2.5	2.8	4.0	5.3	7.3	8.8	12	15	24	12087K	500	5547
2400-6	180KC	10	1	NO	2400-6	300	1.7	1.9	2.2	2.7	2.9	4.2	5.5	6.7	9.0	11	15	22	16116K	500	5608
2400-5	120KC	3	2	NO	2400-5	350	1.2	1.4	1.6	2.2	2.5	4.7	7.1	9.1	13	15	21	31	2014K	500	5515
2400-5	120KC	4	2	NO	2400-5	350	1.3	1.5	1.7	2.2	2.4	4.1	5.9	8.2	9.9	12	17	25	4029K	500	5530
2400-5	120KC	6	2	NO	2400-5	350	1.5	1.6	1.9	2.4	2.6	3.8	5.6	7.7	9.3	11	16	23	8058K	500	5556
2400-5	120KC	8	2	NO	2400-5	350	1.6	1.7	2.0	2.5	2.8	4.0	5.3	7.2	8.7	11	15	23	11944K	500	5221
2400-5	120KC	10	2	NO	2400-5	300	1.7	1.9	2.1	2.7	2.9	4.2	5.4	6.7	8.9	11	15	22	15544K	500	5301
2400-6	180KC	3	2	NO	2400-6	350	1.2	1.4	1.6	2.1	2.5	4.6	6.9	8.8	12	14	20	29	2014K	500	5515
2400-6	180KC	4	2	NO	2400-6	350	1.3	1.5	1.7	2.2	2.4	4.0	5.8	8.0	9.7	12	17	24	4029K	500	5530
2400-6	180KC	6	2	NO	2400-6	350	1.5	1.6	1.8	2.3	2.6	3.8	5.5	7.5	9.1	11	15	22	8058K	500	5556
2400-6	180KC	8	2	NO	2400-6	350	1.6	1.7	2.0	2.5	2.7	3.9	5.2	7.1	8.4	11	14	23	11944K	500	5221
2400-6	180KC	10	2	NO	2400-6	300	1.7	1.9	2.1	2.6	2.9	4.1	5.3	6.6	8.7	11	15	21	15544K	500	5301
2400-5	120KC	3	2	YES	2400-5	350	1.2	1.4	1.6	2.2	2.5	4.5	6.7	8.6	12	14	19	28	2014K	500	5515
2400-5	120KC	4	2	YES	2400-5	350	1.3	1.5	1.7	2.1	2.4	3.9	5.7	7.8	9.4	12	16	24	4029K	500	5530
2400-5	120KC	6	2	YES	2400-5	350	1.5	1.6	1.8	2.3	2.5	3.7	5.4	7.4	8.9	11	15	22	8058K	500	5556
2400-5	120KC	8	2	YES	2400-5	350	1.6	1.7	2.0	2.5	2.7	3.9	5.1	6.9	8.3	11	14	22	11944K	500	5221
2400-5	120KC	10	2	YES	2400-5	300	1.7	1.9	2.1	2.6	2.9	4.0	5.2	6.5	8.5	9.9	14	20	15544K	500	5301
2400-6	180KC	3	2	YES	2400-6	350	1.2	1.4	1.6	2.1	2.5	4.5	6.7	8.5	12	14	19	28	2014K	500	5515
2400-6	180KC	4	2	YES	2400-6	350	1.3	1.5	1.7	2.1	2.4	3.9	5.6	7.7	9.3	11	16	23	4029K	500	5530
2400-6	180KC	6	2	YES	2400-6	350	1.5	1.6	1.8	2.3	2.5	3.7	5.3	7.3	8.8	11	15	21	8058K	500	5556
2400-6	180KC	8	2	YES	2400-6	350	1.6	1.7	2.0	2.5	2.7	3.9	5.0	6.9	8.2	11	14	22	11944K	500	5221
2400-6	180KC	10	2	YES	2400-6	300	1.7	1.9	2.1	2.6	2.8	4.0	5.2	6.4	8.4	9.8	14	20	15544K	500	5301

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	90	1.3	1.6	2.4	4.1	5.4	11	17	22	30	36	52	83	503K	125	1874
2400-5	120KC	4	1	NO	2400-5	90	1.4	1.7	2.1	3.7	4.3	8.2	14	17	24	28	40	60	1007K	125	1874
2400-5	120KC	6	1	NO	2400-5	90	1.5	1.8	2.2	3.5	4.0	7.4	12	15	21	25	32	52	2014K	125	1872
2400-5	120KC	8	1	NO	2400-5	90	1.7	1.9	2.4	3.2	3.7	7.6	11	16	19	22	32	48	3021K	125	1871
2400-5	120KC	10	1	NO	2400-5	90	1.8	2.1	2.5	3.4	3.8	6.9	11	14	17	23	29	48	4029K	125	1869
2400-6	180KC	3	1	NO	2400-6	90	1.3	1.5	2.3	3.7	4.7	9.1	15	19	26	30	44	70	503K	125	1874
2400-6	180KC	4	1	NO	2400-6	90	1.4	1.6	2.0	3.4	3.9	7.2	12	15	20	24	34	51	1007K	125	1874
2400-6	180KC	6	1	NO	2400-6	90	1.5	1.7	2.1	3.2	3.6	6.6	11	14	18	21	28	45	2014K	125	1872
2400-6	180KC	8	1	NO	2400-6	90	1.7	1.9	2.3	3.0	3.4	6.8	9.3	14	17	20	28	41	3021K	125	1871
2400-6	180KC	10	1	NO	2400-6	90	1.8	2.0	2.4	3.2	3.6	6.2	9.5	13	15	20	26	41	4029K	125	1869
2400-5	120KC	3	2	NO	2400-5	90	1.3	1.5	2.1	3.4	4.3	8.0	13	17	22	26	38	60	503K	125	1764
2400-5	120KC	4	2	NO	2400-5	90	1.3	1.5	1.9	3.1	3.6	6.5	11	14	18	21	30	44	1007K	125	1764
2400-5	120KC	6	2	NO	2400-5	90	1.5	1.7	2.0	3.0	3.5	6.2	8.9	12	16	19	25	37	2014K	125	1852
2400-5	120KC	8	2	NO	2400-5	90	1.6	1.8	2.1	2.9	3.3	5.7	8.8	12	15	17	22	37	3021K	125	1761
2400-5	120KC	10	2	NO	2400-5	90	1.8	2.0	2.3	3.1	3.5	5.9	8.0	12	15	17	22	32	3942K	125	1767
2400-6	180KC	3	2	NO	2400-6	90	1.3	1.5	2.1	3.2	4.0	7.4	12	16	20	24	34	54	503K	125	1764
2400-6	180KC	4	2	NO	2400-6	90	1.3	1.5	1.9	3.0	3.4	6.0	9.3	13	16	19	28	40	1007K	125	1764
2400-6	180KC	6	2	NO	2400-6	90	1.5	1.7	2.0	2.9	3.3	5.7	8.6	12	15	18	23	36	2014K	125	1852
2400-6	180KC	8	2	NO	2400-6	90	1.6	1.8	2.1	2.8	3.2	5.6	8.2	12	14	16	21	35	3021K	125	1761
2400-6	180KC	10	2	NO	2400-6	90	1.7	1.9	2.3	3.0	3.3	5.6	7.8	11	14	17	22	31	3942K	125	1767
2400-5	120KC	3	2	YES	2400-5	90	1.3	1.4	2.0	3.0	3.7	6.8	11	14	18	22	31	48	503K	125	1764
2400-5	120KC	4	2	YES	2400-5	90	1.3	1.5	1.8	2.8	3.2	5.6	8.5	12	15	18	25	37	1007K	125	1764
2400-5	120KC	6	2	YES	2400-5	90	1.5	1.7	2.0	2.8	3.1	5.3	7.9	11	14	16	21	33	2014K	125	1852
2400-5	120KC	8	2	YES	2400-5	90	1.6	1.8	2.1	2.7	3.0	5.5	7.4	11	13	15	21	31	3021K	125	1761
2400-5	120KC	10	2	YES	2400-5	90	1.8	2.0	2.3	2.9	3.2	5.2	7.7	9.6	12	15	20	31	3942K	125	1767
2400-6	180KC	3	2	YES	2400-6	90	1.3	1.4	2.0	2.9	3.6	6.5	10	14	18	21	29	46	503K	125	1764
2400-6	180KC	4	2	YES	2400-6	90	1.3	1.5	1.8	2.8	3.1	5.5	8.3	11	15	17	24	35	1007K	125	1764
2400-6	180KC	6	2	YES	2400-6	90	1.5	1.7	1.9	2.7	3.1	5.2	7.7	9.8	13	16	20	32	2014K	125	1852
2400-6	180KC	8	2	YES	2400-6	90	1.6	1.8	2.1	2.7	3.0	5.4	7.3	10	13	15	21	30	3021K	125	1761
2400-6	180KC	10	2	YES	2400-6	90	1.7	1.9	2.2	2.8	3.1	5.1	7.5	9.4	12	15	19	30	3942K	125	1767

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.5	2.5	4.2	9.1	12	26	42	56	75	90	130	CE	201K	50	808
2400-5	120KC	4	1	NO	2400-5	35	1.5	2.2	3.7	6.9	9.3	20	29	42	52	63	91	170	402K	50	807
2400-5	120KC	6	1	NO	2400-5	35	1.7	2.2	3.4	6.1	7.3	16	25	34	45	53	77	130	805K	50	807
2400-5	120KC	8	1	NO	2400-5	35	1.8	2.3	3.1	5.5	7.4	15	22	32	40	47	69	110	1208K	50	806
2400-5	120KC	10	1	NO	2400-5	35	2.0	2.5	3.2	5.6	6.6	14	22	29	40	47	62	120	1611K	50	806
2400-6	180KC	3	1	NO	2400-6	35	1.4	2.2	3.5	7.1	8.6	20	32	42	56	67	96	CE	201K	50	808
2400-6	180KC	4	1	NO	2400-6	35	1.5	2.0	3.1	5.6	7.4	15	22	32	40	48	69	130	402K	50	807
2400-6	180KC	6	1	NO	2400-6	35	1.6	2.0	3.0	5.1	6.0	13	19	26	34	41	59	98	805K	50	807
2400-6	180KC	8	1	NO	2400-6	35	1.8	2.2	2.8	4.6	6.1	12	18	25	31	37	53	84	1208K	50	806
2400-6	180KC	10	1	NO	2400-6	35	1.9	2.3	2.9	4.8	5.6	11	18	23	31	37	48	85	1611K	50	806
2400-5	120KC	3	2	NO	2400-5	35	1.4	2.1	3.4	6.8	8.2	19	30	40	53	64	91	CE	201K	50	760
2400-5	120KC	4	2	NO	2400-5	35	1.4	2.0	3.0	5.3	7.0	15	21	30	37	49	65	120	402K	50	760
2400-5	120KC	6	2	NO	2400-5	35	1.6	2.0	2.9	4.9	5.9	13	19	24	30	40	53	79	805K	50	759
2400-5	120KC	8	2	NO	2400-5	35	1.7	2.0	2.7	4.5	5.3	11	16	21	30	35	46	68	1208K	50	759
2400-5	120KC	10	2	NO	2400-5	35	1.8	2.2	2.9	4.7	5.4	11	16	21	25	30	40	68	1585K	50	763
2400-6	180KC	3	2	NO	2400-6	35	1.3	1.9	2.9	5.5	6.5	15	23	30	40	48	68	CE	201K	50	760
2400-6	180KC	4	2	NO	2400-6	35	1.4	1.8	2.6	4.4	5.7	12	17	23	29	37	49	86	402K	50	760
2400-6	180KC	6	2	NO	2400-6	35	1.5	1.9	2.6	4.2	5.0	11	15	19	24	31	41	61	805K	50	759
2400-6	180KC	8	2	NO	2400-6	35	1.7	2.0	2.5	3.9	4.6	8.9	13	17	24	28	36	53	1208K	50	759
2400-6	180KC	10	2	NO	2400-6	35	1.8	2.1	2.7	4.1	4.7	8.8	13	17	20	24	33	54	1585K	50	763
2400-5	120KC	3	2	YES	2400-5	35	1.3	1.9	2.9	5.6	6.7	15	24	32	42	51	72	CE	201K	50	760
2400-5	120KC	4	2	YES	2400-5	35	1.4	1.8	2.6	4.4	5.8	12	17	24	30	39	51	91	402K	50	760
2400-5	120KC	6	2	YES	2400-5	35	1.6	1.8	2.5	4.1	4.8	9.8	15	21	26	30	44	73	805K	50	759
2400-5	120KC	8	2	YES	2400-5	35	1.7	2.0	2.4	3.8	4.9	9.1	14	19	23	28	40	62	1208K	50	759
2400-5	120KC	10	2	YES	2400-5	35	1.8	2.1	2.6	3.9	4.5	8.3	13	17	23	28	40	63	1585K	50	763
2400-6	180KC	3	2	YES	2400-6	35	1.3	1.8	2.6	4.6	5.4	12	19	24	32	38	54	CE	201K	50	760
2400-6	180KC	4	2	YES	2400-6	35	1.4	1.7	2.4	3.8	4.8	9.2	14	19	23	30	40	69	402K	50	760
2400-6	180KC	6	2	YES	2400-6	35	1.5	1.8	2.4	3.6	4.3	8.2	12	17	21	24	35	57	805K	50	759
2400-6	180KC	8	2	YES	2400-6	35	1.7	1.9	2.3	3.5	4.3	7.7	11	16	19	23	32	49	1208K	50	759
2400-6	180KC	10	2	YES	2400-6	35	1.8	2.1	2.5	3.6	4.1	7.2	11	15	19	23	32	50	1585K	50	763

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.3	5.2	11	25	31	71	110	CE	CE	CE	CE	CE	80K	20	326
2400-5	120KC	4	1	NO	2400-5	20	2.1	4.0	8.0	19	23	49	80	130	170	210	CE	CE	161K	20	320
2400-5	120KC	6	1	NO	2400-5	20	2.1	3.6	6.7	14	19	41	61	98	130	160	210	350	322K	20	320
2400-5	120KC	8	1	NO	2400-5	20	2.2	3.7	6.8	14	17	37	60	82	110	130	170	280	483K	20	320
2400-5	120KC	10	1	NO	2400-5	20	2.4	3.4	6.0	13	17	37	54	82	110	130	170	260	644K	20	320
2400-6	180KC	3	1	NO	2400-6	20	2.0	4.1	7.9	18	23	52	78	CE	CE	CE	CE	CE	80K	20	326
2400-6	180KC	4	1	NO	2400-6	20	1.9	3.3	6.3	14	17	36	59	88	120	160	CE	CE	161K	20	320
2400-6	180KC	6	1	NO	2400-6	20	1.9	3.0	5.4	11	15	31	45	72	93	120	150	250	322K	20	320
2400-6	180KC	8	1	NO	2400-6	20	2.0	3.2	5.5	11	13	28	45	61	78	94	130	210	483K	20	320
2400-6	180KC	10	1	NO	2400-6	20	2.2	3.0	5.0	9.5	13	28	40	61	79	94	130	190	644K	20	320
2400-5	120KC	3	2	NO	2400-5	20	2.0	4.0	7.6	18	22	50	81	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	NO	2400-5	20	1.9	3.2	6.5	13	16	35	56	85	120	150	CE	CE	161K	20	301
2400-5	120KC	6	2	NO	2400-5	20	1.9	3.0	5.4	12	15	28	46	61	76	92	150	250	322K	20	315
2400-5	120KC	8	2	NO	2400-5	20	1.9	3.2	4.9	9.9	12	27	40	52	65	77	120	210	483K	20	300
2400-5	120KC	10	2	NO	2400-5	20	2.1	2.9	4.9	9.5	13	23	33	53	65	77	110	160	630K	20	302
2400-6	180KC	3	2	NO	2400-6	20	1.8	3.3	5.9	13	16	37	59	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	NO	2400-6	20	1.7	2.8	5.1	10	13	26	42	62	82	110	CE	CE	161K	20	301
2400-6	180KC	6	2	NO	2400-6	20	1.8	2.6	4.5	9.0	11	21	35	46	56	69	110	190	322K	20	315
2400-6	180KC	8	2	NO	2400-6	20	1.8	2.8	4.1	7.9	9.4	21	30	39	48	58	89	150	483K	20	300
2400-6	180KC	10	2	NO	2400-6	20	2.0	2.7	4.2	7.7	9.6	18	25	39	49	58	76	120	630K	20	302
2400-5	120KC	3	2	YES	2400-5	20	1.8	3.4	6.3	14	18	40	64	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	YES	2400-5	20	1.7	2.8	5.3	11	13	28	45	67	89	120	CE	CE	161K	20	301
2400-5	120KC	6	2	YES	2400-5	20	1.7	2.6	4.4	9.1	11	23	35	55	70	83	120	200	322K	20	315
2400-5	120KC	8	2	YES	2400-5	20	1.9	2.7	4.4	8.2	9.9	21	34	48	59	70	93	160	483K	20	300
2400-5	120KC	10	2	YES	2400-5	20	2.0	2.6	4.1	7.4	10	21	30	46	60	71	94	140	630K	20	302
2400-6	180KC	3	2	YES	2400-6	20	1.7	2.8	4.9	11	13	29	46	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	YES	2400-6	20	1.6	2.5	4.3	8.1	9.8	21	33	49	65	84	CE	CE	161K	20	301
2400-6	180KC	6	2	YES	2400-6	20	1.7	2.3	3.8	7.2	8.6	18	27	41	52	62	84	150	322K	20	315
2400-6	180KC	8	2	YES	2400-6	20	1.8	2.5	3.8	6.6	7.9	16	26	36	44	53	70	120	483K	20	300
2400-6	180KC	10	2	YES	2400-6	20	2.0	2.4	3.6	6.1	8.0	16	23	35	45	54	71	110	630K	20	302

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	200	1.1	1.3	1.5	2.1	2.4	4.3	6.3	8.0	11	13	18	26	2000K	464	805
2400-5	120KC	4	1	NO	2400-5	200	1.2	1.3	1.5	2.0	2.2	3.7	4.9	6.7	8.1	9.6	14	21	3276K	463	772
2400-5	120KC	6	1	NO	2400-5	110	1.3	1.4	1.6	2.0	2.2	3.3	4.7	5.8	7.5	8.8	12	18	7004K	367	924
2400-5	120KC	10	1	NO	2400-5	110	1.5	1.6	1.7	2.2	2.3	3.5	4.8	5.8	6.9	8.7	12	18	12263K	258	981
2400-6	180KC	3	1	NO	2400-6	200	1.1	1.3	1.5	2.0	2.2	3.8	5.5	7.0	9.0	11	15	23	2000K	464	805
2400-6	180KC	4	1	NO	2400-6	200	1.2	1.3	1.5	1.9	2.1	3.3	4.4	5.9	7.1	8.5	12	18	3276K	463	772
2400-6	180KC	6	1	NO	2400-6	110	1.3	1.3	1.6	1.9	2.1	3.1	4.3	5.3	6.7	7.8	10	16	7004K	367	924
2400-6	180KC	10	1	NO	2400-6	110	1.5	1.6	1.7	2.1	2.3	3.2	4.4	5.3	6.3	7.8	9.9	16	12263K	258	981
2400-5	120KC	3	2	NO	2400-5	200	1.1	1.2	1.4	1.9	2.1	3.5	5.1	6.5	8.2	9.7	14	21	1913K	312	592
2400-5	120KC	4	2	NO	2400-5	200	1.1	1.3	1.5	1.8	2.0	3.1	4.2	5.5	6.6	8.2	11	17	3231K	308	680
2400-5	120KC	6	2	NO	2400-5	110	1.3	1.3	1.5	1.9	2.1	3.0	4.1	5.1	6.2	7.2	9.5	15	5908K	229	896
2400-5	120KC	10	2	NO	2400-5	110	1.5	1.5	1.7	2.1	2.2	3.0	4.2	5.0	5.8	6.6	8.3	14	9351K	151	971
2400-6	180KC	3	2	NO	2400-6	200	1.1	1.2	1.4	1.8	2.1	3.3	4.7	6.0	7.6	8.9	13	19	1913K	312	592
2400-6	180KC	4	2	NO	2400-6	200	1.1	1.3	1.4	1.8	1.9	3.0	3.9	5.1	6.1	7.6	9.8	16	3231K	308	680
2400-6	180KC	6	2	NO	2400-6	110	1.3	1.3	1.5	1.9	2.0	2.9	3.9	4.8	6.0	7.0	8.9	14	5908K	229	896
2400-6	180KC	10	2	NO	2400-6	110	1.5	1.5	1.6	2.1	2.2	2.9	4.1	4.9	5.7	6.5	8.0	13	9351K	151	971
2400-5	120KC	3	2	YES	2400-5	200	1.1	1.2	1.4	1.8	2.0	3.1	4.4	5.5	7.0	8.2	12	18	1913K	312	592
2400-5	120KC	4	2	YES	2400-5	200	1.1	1.3	1.4	1.7	1.9	2.8	3.7	4.8	5.7	7.1	9.0	14	3231K	308	680
2400-5	120KC	6	2	YES	2400-5	110	1.3	1.3	1.5	1.8	1.9	2.7	3.6	4.4	5.5	6.4	8.1	13	5908K	229	896
2400-5	120KC	10	2	YES	2400-5	110	1.5	1.5	1.7	2.0	2.1	2.9	3.8	4.5	5.3	6.5	8.1	13	9351K	151	971
2400-6	180KC	3	2	YES	2400-6	200	1.1	1.2	1.4	1.8	1.9	3.1	4.2	5.3	6.7	7.9	11	17	1913K	312	592
2400-6	180KC	4	2	YES	2400-6	200	1.1	1.3	1.4	1.7	1.9	2.8	3.6	4.7	5.5	6.8	8.7	14	3231K	308	680
2400-6	180KC	6	2	YES	2400-6	110	1.3	1.3	1.5	1.8	1.9	2.7	3.6	4.3	5.4	6.2	7.8	12	5908K	229	896
2400-6	180KC	10	2	YES	2400-6	110	1.5	1.5	1.6	2.0	2.1	2.9	3.7	4.5	5.2	6.3	7.9	12	9351K	151	971

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	45	1.3	1.8	2.7	4.9	6.1	13	20	27	35	41	58	92	500K	117	241
2400-5	120KC	4	1	NO	2400-5	45	1.3	1.7	2.4	4.0	4.7	9.1	15	20	25	30	43	64	839K	88	293
2400-5	120KC	6	1	NO	2400-5	35	1.4	1.7	2.3	3.6	4.4	8.1	12	17	21	26	35	56	1644K	91	298
2400-5	120KC	10	1	NO	2400-5	25	1.6	1.8	2.4	3.5	4.4	8.1	12	17	20	24	34	50	3183K	64	336
2400-6	180KC	3	1	NO	2400-6	45	1.2	1.6	2.3	3.9	4.8	9.3	15	20	25	30	42	67	500K	117	241
2400-6	180KC	4	1	NO	2400-6	45	1.3	1.6	2.1	3.3	3.8	7.1	11	15	19	23	32	47	839K	88	293
2400-6	180KC	6	1	NO	2400-6	35	1.3	1.6	2.0	3.1	3.6	6.4	9.4	13	16	20	27	42	1644K	91	298
2400-6	180KC	10	1	NO	2400-6	25	1.5	1.7	2.2	3.1	3.8	6.5	9.0	13	16	19	26	39	3183K	64	336
2400-5	120KC	3	2	NO	2400-5	45	1.2	1.6	2.3	3.9	4.9	9.5	15	21	26	32	43	68	478K	78	208
2400-5	120KC	4	2	NO	2400-5	45	1.3	1.6	2.1	3.2	3.8	7.3	11	16	19	23	32	49	839K	77	263
2400-5	120KC	6	2	NO	2400-5	35	1.3	1.6	2.1	3.2	3.7	6.6	9.8	13	16	20	27	39	1324K	57	290
2400-5	120KC	10	2	NO	2400-5	25	1.5	1.7	2.2	3.2	3.7	5.7	7.7	12	14	17	22	31	2453K	37	332
2400-6	180KC	3	2	NO	2400-6	45	1.2	1.5	2.0	3.2	3.9	7.3	11	16	19	24	32	50	478K	78	208
2400-6	180KC	4	2	NO	2400-6	45	1.2	1.5	1.9	2.7	3.2	5.8	8.4	12	15	17	24	37	839K	77	263
2400-6	180KC	6	2	NO	2400-6	35	1.3	1.5	1.9	2.8	3.2	5.4	7.9	9.8	12	16	21	30	1324K	57	290
2400-6	180KC	10	2	NO	2400-6	25	1.5	1.7	2.0	2.9	3.3	4.8	6.4	9.4	12	14	17	25	2453K	37	332
2400-5	120KC	3	2	YES	2400-5	45	1.2	1.5	2.1	3.3	4.1	7.8	12	17	21	25	35	54	478K	78	208
2400-5	120KC	4	2	YES	2400-5	45	1.2	1.5	1.9	2.8	3.2	6.0	8.8	13	16	18	26	39	839K	77	263
2400-5	120KC	6	2	YES	2400-5	35	1.3	1.5	1.9	2.7	3.1	5.4	8.1	11	13	17	22	34	1324K	57	290
2400-5	120KC	10	2	YES	2400-5	25	1.5	1.7	2.0	2.8	3.3	5.5	7.5	11	13	15	22	31	2453K	37	332
2400-6	180KC	3	2	YES	2400-6	45	1.2	1.4	1.8	2.8	3.3	6.0	9.0	13	16	19	26	40	478K	78	208
2400-6	180KC	4	2	YES	2400-6	45	1.2	1.4	1.7	2.4	2.8	4.9	6.9	9.5	12	14	20	30	839K	77	263
2400-6	180KC	6	2	YES	2400-6	35	1.3	1.5	1.8	2.4	2.7	4.4	6.5	8.2	10	13	17	26	1324K	57	290
2400-6	180KC	10	2	YES	2400-6	25	1.5	1.6	1.9	2.5	3.0	4.7	6.3	8.6	11	13	17	25	2453K	37	332

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	1.7	3.1	5.8	12	15	33	53	70	92	120	CE	CE	199K	46	100
2400-5	120KC	4	1	NO	2400-5	20	1.6	2.6	4.5	8.7	12	24	38	51	64	82	130	210	376K	46	107
2400-5	120KC	6	1	NO	2400-5	20	1.6	2.6	4.2	7.8	9.4	20	31	41	56	66	98	150	712K	36	117
2400-5	120KC	10	1	NO	2400-5	15	1.8	2.7	4.2	7.6	9.1	19	30	40	49	59	91	140	1261K	25	134
2400-6	180KC	3	1	NO	2400-6	20	1.5	2.5	4.4	8.8	11	24	38	50	66	78	CE	CE	199K	46	100
2400-6	180KC	4	1	NO	2400-6	20	1.5	2.2	3.6	6.5	8.5	18	27	37	46	58	88	150	376K	46	107
2400-6	180KC	6	1	NO	2400-6	20	1.5	2.2	3.4	5.9	7.1	15	23	30	40	48	72	110	712K	36	117
2400-6	180KC	10	1	NO	2400-6	15	1.7	2.4	3.5	6.0	7.1	14	23	30	36	44	67	99	1261K	25	134
2400-5	120KC	3	2	NO	2400-5	20	1.6	2.6	4.8	9.2	12	25	39	55	69	84	CE	CE	190K	30	95
2400-5	120KC	4	2	NO	2400-5	20	1.5	2.3	3.7	7.0	8.9	19	29	39	50	61	97	170	334K	30	98
2400-5	120KC	6	2	NO	2400-5	20	1.6	2.3	3.6	6.4	7.7	15	25	32	39	47	69	110	596K	22	113
2400-5	120KC	10	2	NO	2400-5	15	1.7	2.3	3.6	5.5	6.5	14	20	25	31	37	57	84	981K	15	134
2400-6	180KC	3	2	NO	2400-6	20	1.4	2.2	3.7	6.8	8.8	18	28	40	49	60	CE	CE	190K	30	95
2400-6	180KC	4	2	NO	2400-6	20	1.4	2.0	3.0	5.4	6.7	14	21	28	36	44	71	120	334K	30	98
2400-6	180KC	6	2	NO	2400-6	20	1.5	2.0	3.0	5.0	6.0	12	18	24	29	35	50	74	596K	22	113
2400-6	180KC	10	2	NO	2400-6	15	1.7	2.1	3.1	4.5	5.2	11	15	19	23	28	42	62	981K	15	134
2400-5	120KC	3	2	YES	2400-5	20	1.5	2.3	4.1	7.6	9.9	20	32	45	55	67	CE	CE	190K	30	95
2400-5	120KC	4	2	YES	2400-5	20	1.5	2.0	3.2	5.8	7.4	15	24	31	40	49	78	130	334K	30	98
2400-5	120KC	6	2	YES	2400-5	20	1.5	2.1	3.1	5.2	6.2	13	20	26	35	41	65	97	596K	22	113
2400-5	120KC	10	2	YES	2400-5	15	1.7	2.3	3.3	5.5	6.5	13	20	25	31	37	55	84	981K	15	134
2400-6	180KC	3	2	YES	2400-6	20	1.4	2.0	3.2	5.7	7.3	15	23	32	39	48	CE	CE	190K	30	95
2400-6	180KC	4	2	YES	2400-6	20	1.4	1.8	2.6	4.5	5.6	11	17	23	29	36	57	95	334K	30	98
2400-6	180KC	6	2	YES	2400-6	20	1.4	1.9	2.6	4.2	4.9	9.2	15	19	26	30	49	72	596K	22	113
2400-6	180KC	10	2	YES	2400-6	15	1.6	2.1	2.9	4.5	5.2	10	15	19	23	28	42	62	981K	15	134

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	10	3.1	7.2	16	33	42	91	150	CE	CE	CE	CE	CE	79K	18	37
2400-5	120KC	4	1	NO	2400-5	10	2.6	5.8	12	24	30	65	100	170	220	280	CE	CE	150K	18	40
2400-5	120KC	6	1	NO	2400-5	10	2.5	4.8	9.2	19	26	55	93	130	160	200	280	CE	267K	14	44
2400-5	120KC	10	1	NO	2400-5	10	2.7	4.8	8.9	19	23	48	84	120	140	170	220	370	477K	10	51
2400-6	180KC	3	1	NO	2400-6	10	2.5	5.4	12	23	30	64	110	CE	CE	CE	CE	CE	79K	18	37
2400-6	180KC	4	1	NO	2400-6	10	2.2	4.4	8.4	17	22	46	71	120	160	200	CE	CE	150K	18	40
2400-6	180KC	6	1	NO	2400-6	10	2.2	3.8	6.9	14	19	40	67	90	120	150	210	CE	267K	14	44
2400-6	180KC	10	1	NO	2400-6	10	2.4	3.9	6.9	14	17	35	61	80	99	120	160	270	477K	10	51
2400-5	120KC	3	2	NO	2400-5	10	2.6	5.8	12	25	33	69	110	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	4	2	NO	2400-5	10	2.3	4.6	8.8	18	24	51	91	140	190	CE	CE	CE	127K	12	36
2400-5	120KC	6	2	NO	2400-5	10	2.3	4.1	7.6	16	21	39	65	85	110	170	270	CE	215K	9	42
2400-5	120KC	10	2	NO	2400-5	10	2.3	4.1	6.4	14	17	31	53	70	87	110	140	350	360K	6	47
2400-6	180KC	3	2	NO	2400-6	10	2.2	4.4	8.7	18	23	49	76	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	4	2	NO	2400-6	10	2.0	3.6	6.6	14	18	37	65	100	140	CE	CE	CE	127K	12	36
2400-6	180KC	6	2	NO	2400-6	10	2.0	3.3	5.9	12	15	28	47	61	76	130	200	CE	215K	9	42
2400-6	180KC	10	2	NO	2400-6	10	2.1	3.4	5.1	11	13	23	39	51	63	75	100	270	360K	6	47
2400-5	120KC	3	2	YES	2400-5	10	2.3	4.9	9.8	21	27	55	87	CE	CE	CE	CE	CE	76K	12	33
2400-5	120KC	4	2	YES	2400-5	10	2.1	3.9	7.3	15	19	41	75	110	150	CE	CE	CE	127K	12	36
2400-5	120KC	6	2	YES	2400-5	10	2.1	3.5	6.2	13	17	35	65	85	110	140	220	CE	215K	9	42
2400-5	120KC	10	2	YES	2400-5	10	2.3	3.8	6.4	13	17	31	53	70	87	110	140	280	360K	6	47
2400-6	180KC	3	2	YES	2400-6	10	2.0	3.8	7.2	15	19	39	61	CE	CE	CE	CE	CE	76K	12	33
2400-6	180KC	4	2	YES	2400-6	10	1.8	3.1	5.5	11	15	30	55	81	110	CE	CE	CE	127K	12	36
2400-6	180KC	6	2	YES	2400-6	10	1.9	2.9	4.8	9.5	13	25	47	61	76	110	160	CE	215K	9	42
2400-6	180KC	10	2	YES	2400-6	10	2.1	3.2	5.1	11	13	23	39	51	63	75	100	220	360K	6	47

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.1	1.2	1.3	1.8	2.1	3.5	5.1	6.9	8.4	11	14	22	2014K	500	2344
2400-5	120KC	4	1	NO	2400-5	350	1.2	1.2	1.4	1.8	2.1	3.2	4.6	5.7	6.8	8.7	12	18	3749K	500	2344
2400-5	120KC	6	1	NO	2400-5	350	1.3	1.4	1.5	1.8	2.0	3.1	4.0	5.3	6.3	7.4	11	16	8041K	500	2291
2400-5	120KC	10	1	NO	2400-5	350	1.5	1.6	1.7	2.0	2.1	3.1	3.9	5.1	6.0	6.9	9.6	14	15227K	500	2329
2400-6	180KC	3	1	NO	2400-6	350	1.1	1.2	1.3	1.7	2.0	3.2	4.5	6.1	7.3	9.3	12	19	2014K	500	2344
2400-6	180KC	4	1	NO	2400-6	350	1.2	1.2	1.3	1.7	1.9	2.9	4.1	5.1	6.1	7.7	9.8	16	3749K	500	2344
2400-6	180KC	6	1	NO	2400-6	350	1.3	1.3	1.5	1.7	2.0	2.9	3.7	4.8	5.7	6.6	9.0	14	8041K	500	2291
2400-6	180KC	10	1	NO	2400-6	350	1.5	1.6	1.7	1.9	2.1	2.9	3.6	4.7	5.5	6.3	8.7	13	15227K	500	2329
2400-5	120KC	3	2	NO	2400-5	350	1.1	1.2	1.3	1.7	1.9	3.0	4.2	5.5	6.8	8.3	11	17	2014K	500	2107
2400-5	120KC	4	2	NO	2400-5	350	1.1	1.2	1.3	1.6	1.9	2.8	3.8	4.7	5.7	7.0	8.9	14	3935K	500	2344
2400-5	120KC	6	2	NO	2400-5	250	1.3	1.3	1.4	1.7	1.9	2.8	3.5	4.5	5.3	6.3	8.5	13	7490K	500	2495
2400-5	120KC	10	2	NO	2400-5	150	1.5	1.5	1.6	1.9	2.0	2.7	3.6	4.3	5.0	6.2	8.2	12	13645K	384	2562
2400-6	180KC	3	2	NO	2400-6	350	1.1	1.1	1.3	1.7	1.9	2.9	3.9	5.2	6.3	7.7	11	16	2014K	500	2107
2400-6	180KC	4	2	NO	2400-6	350	1.1	1.2	1.3	1.6	1.8	2.6	3.6	4.4	5.3	6.5	8.3	13	3935K	500	2344
2400-6	180KC	6	2	NO	2400-6	250	1.3	1.3	1.4	1.7	1.9	2.7	3.4	4.3	5.1	5.9	8.0	12	7490K	500	2495
2400-6	180KC	10	2	NO	2400-6	150	1.5	1.5	1.6	1.9	2.0	2.6	3.4	4.2	4.9	5.9	8.0	12	13645K	384	2562
2400-5	120KC	3	2	YES	2400-5	350	1.1	1.2	1.3	1.7	1.8	2.7	3.7	4.8	5.8	7.1	9.3	15	2014K	500	2107
2400-5	120KC	4	2	YES	2400-5	350	1.1	1.2	1.3	1.6	1.8	2.5	3.5	4.2	5.0	6.2	7.8	12	3935K	500	2344
2400-5	120KC	6	2	YES	2400-5	250	1.3	1.3	1.4	1.6	1.8	2.6	3.2	4.1	4.8	5.5	7.4	11	7490K	500	2495
2400-5	120KC	10	2	YES	2400-5	150	1.5	1.5	1.6	1.9	2.0	2.5	3.3	4.2	4.8	5.5	7.4	11	13645K	384	2562
2400-6	180KC	3	2	YES	2400-6	350	1.1	1.1	1.3	1.6	1.8	2.6	3.6	4.7	5.7	6.9	9.0	14	2014K	500	2107
2400-6	180KC	4	2	YES	2400-6	350	1.1	1.2	1.3	1.6	1.8	2.5	3.4	4.1	4.9	6.0	7.6	12	3935K	500	2344
2400-6	180KC	6	2	YES	2400-6	250	1.3	1.3	1.4	1.6	1.8	2.5	3.1	4.0	4.7	5.4	7.2	11	7490K	500	2495
2400-6	180KC	10	2	YES	2400-6	150	1.5	1.5	1.6	1.9	2.0	2.5	3.2	4.1	4.8	5.4	7.2	10	13645K	384	2562

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	85	1.2	1.6	2.2	4.1	4.8	11	17	22	30	35	50	76	503K	125	805
2400-5	120KC	4	1	NO	2400-5	85	1.2	1.5	2.1	3.3	3.9	8.0	12	17	21	25	35	57	955K	125	780
2400-5	120KC	6	1	NO	2400-5	85	1.3	1.5	2.0	3.0	3.5	6.5	9.9	14	18	21	29	45	2014K	125	778
2400-5	120KC	10	1	NO	2400-5	85	1.6	1.8	2.1	3.0	3.3	5.9	9.1	12	16	19	25	40	3875K	125	791
2400-6	180KC	3	1	NO	2400-6	85	1.1	1.4	1.9	3.3	3.8	7.9	13	16	22	26	37	56	503K	125	805
2400-6	180KC	4	1	NO	2400-6	85	1.2	1.4	1.8	2.7	3.2	6.2	8.8	13	16	19	26	42	955K	125	780
2400-6	180KC	6	1	NO	2400-6	85	1.3	1.5	1.8	2.6	3.0	5.2	7.7	11	14	16	22	33	2014K	125	778
2400-6	180KC	10	1	NO	2400-6	85	1.5	1.7	1.9	2.6	2.9	4.9	7.2	9.1	13	15	19	31	3875K	125	791
2400-5	120KC	3	2	NO	2400-5	85	1.1	1.4	1.9	3.2	3.8	7.7	12	16	21	25	36	57	503K	125	670
2400-5	120KC	4	2	NO	2400-5	85	1.2	1.4	1.8	2.7	3.3	6.0	8.7	12	15	20	26	41	996K	125	669
2400-5	120KC	6	2	NO	2400-5	50	1.3	1.4	1.8	2.6	3.0	5.2	7.9	11	13	16	22	32	1916K	125	778
2400-5	120KC	10	2	NO	2400-5	35	1.5	1.6	1.9	2.7	3.0	5.1	7.1	8.9	11	13	17	28	3517K	96	870
2400-6	180KC	3	2	NO	2400-6	85	1.1	1.4	1.7	2.7	3.1	5.9	9.1	12	16	19	26	42	503K	125	670
2400-6	180KC	4	2	NO	2400-6	85	1.2	1.4	1.7	2.3	2.8	4.8	6.8	9.2	12	15	19	30	996K	125	669
2400-6	180KC	6	2	NO	2400-6	50	1.3	1.4	1.7	2.3	2.6	4.3	6.3	8.0	9.7	13	17	24	1916K	125	778
2400-6	180KC	10	2	NO	2400-6	35	1.5	1.6	1.9	2.4	2.7	4.3	5.9	7.2	8.6	10	13	22	3517K	96	870
2400-5	120KC	3	2	YES	2400-5	85	1.1	1.4	1.8	2.8	3.2	6.3	9.7	13	17	20	29	45	503K	125	670
2400-5	120KC	4	2	YES	2400-5	85	1.2	1.4	1.7	2.4	2.9	5.0	7.1	9.8	12	16	21	33	996K	125	669
2400-5	120KC	6	2	YES	2400-5	50	1.3	1.4	1.7	2.3	2.6	4.3	6.3	8.1	11	13	17	26	1916K	125	778
2400-5	120KC	10	2	YES	2400-5	35	1.5	1.6	1.8	2.4	2.6	4.2	6.1	7.6	11	12	16	25	3517K	96	870
2400-6	180KC	3	2	YES	2400-6	85	1.1	1.3	1.6	2.4	2.7	5.0	7.4	9.6	13	15	21	33	503K	125	670
2400-6	180KC	4	2	YES	2400-6	85	1.2	1.3	1.6	2.1	2.5	4.1	5.7	7.6	9.2	12	16	25	996K	125	669
2400-6	180KC	6	2	YES	2400-6	50	1.3	1.4	1.6	2.1	2.3	3.6	5.1	6.5	8.3	9.7	13	20	1916K	125	778
2400-6	180KC	10	2	YES	2400-6	35	1.5	1.6	1.8	2.2	2.4	3.7	5.1	6.3	8.2	9.5	13	20	3517K	96	870

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.5	2.6	4.7	10	13	27	42	60	75	96	130	CE	201K	50	333
2400-5	120KC	4	1	NO	2400-5	35	1.5	2.2	3.6	7.7	9.3	20	32	42	57	68	90	170	402K	50	333
2400-5	120KC	6	1	NO	2400-5	35	1.5	2.1	3.3	6.0	8.1	17	25	36	44	52	76	120	805K	50	332
2400-5	120KC	10	1	NO	2400-5	35	1.7	2.1	3.2	5.6	7.5	15	22	32	40	47	67	110	1553K	50	338
2400-6	180KC	3	1	NO	2400-6	35	1.4	2.2	3.6	7.4	8.9	20	30	42	53	68	90	CE	201K	50	333
2400-6	180KC	4	1	NO	2400-6	35	1.4	1.9	2.9	5.7	6.9	14	23	30	40	48	64	120	402K	50	333
2400-6	180KC	6	1	NO	2400-6	35	1.4	1.9	2.7	4.7	6.1	12	18	26	32	37	54	83	805K	50	332
2400-6	180KC	10	1	NO	2400-6	35	1.7	1.9	2.7	4.4	5.8	12	16	23	29	34	49	72	1553K	50	338
2400-5	120KC	3	2	NO	2400-5	35	1.4	2.2	3.7	7.5	9.0	21	31	43	57	69	97	CE	201K	50	286
2400-5	120KC	4	2	NO	2400-5	35	1.4	1.9	3.0	5.8	7.0	15	23	30	41	49	70	120	399K	50	285
2400-5	120KC	6	2	NO	2400-5	35	1.4	1.9	2.8	5.0	6.4	12	19	26	32	38	57	84	761K	50	321
2400-5	120KC	10	2	NO	2400-5	25	1.6	2.0	2.9	4.8	5.9	11	15	23	28	33	43	64	1394K	38	354
2400-6	180KC	3	2	NO	2400-6	35	1.3	1.9	2.9	5.5	6.6	15	23	30	40	48	68	CE	201K	50	286
2400-6	180KC	4	2	NO	2400-6	35	1.3	1.7	2.5	4.4	5.2	11	17	22	29	34	49	84	399K	50	285
2400-6	180KC	6	2	NO	2400-6	35	1.3	1.7	2.4	3.9	4.9	8.7	14	19	23	27	40	59	761K	50	321
2400-6	180KC	10	2	NO	2400-6	25	1.6	1.9	2.5	3.9	4.7	7.6	11	17	20	24	31	45	1394K	38	354
2400-5	120KC	3	2	YES	2400-5	35	1.3	2.0	3.1	6.2	7.4	17	25	35	46	55	78	CE	201K	50	286
2400-5	120KC	4	2	YES	2400-5	35	1.3	1.8	2.7	4.9	5.8	12	19	25	33	39	56	96	399K	50	285
2400-5	120KC	6	2	YES	2400-5	35	1.4	1.8	2.5	4.1	5.2	10	15	21	26	31	46	69	761K	50	321
2400-5	120KC	10	2	YES	2400-5	25	1.6	1.9	2.5	4.0	5.1	9.6	14	20	24	29	41	62	1394K	38	354
2400-6	180KC	3	2	YES	2400-6	35	1.3	1.7	2.5	4.6	5.5	12	18	24	32	39	54	CE	201K	50	286
2400-6	180KC	4	2	YES	2400-6	35	1.3	1.6	2.2	3.7	4.4	8.3	13	18	23	28	39	67	399K	50	285
2400-6	180KC	6	2	YES	2400-6	35	1.3	1.6	2.1	3.3	4.0	7.4	11	15	19	23	33	49	761K	50	321
2400-6	180KC	10	2	YES	2400-6	25	1.6	1.7	2.2	3.3	4.1	7.3	11	15	18	21	30	45	1394K	38	354

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.6	6.0	12	27	34	75	120	CE	CE	CE	CE	CE	80K	20	125
2400-5	120KC	4	1	NO	2400-5	20	2.2	4.7	9.1	19	25	56	83	130	180	230	CE	CE	161K	20	125
2400-5	120KC	6	1	NO	2400-5	20	2.1	4.2	7.9	17	20	43	70	95	120	160	210	370	322K	20	124
2400-5	120KC	10	1	NO	2400-5	20	2.1	3.7	7.1	15	18	39	63	83	110	130	170	260	615K	20	131
2400-6	180KC	3	1	NO	2400-6	20	2.2	4.5	8.7	19	25	53	83	CE	CE	CE	CE	CE	80K	20	125
2400-6	180KC	4	1	NO	2400-6	20	1.9	3.6	6.7	14	18	39	58	91	130	160	CE	CE	161K	20	125
2400-6	180KC	6	1	NO	2400-6	20	1.8	3.3	5.9	12	15	31	49	67	84	110	150	260	322K	20	124
2400-6	180KC	10	1	NO	2400-6	20	1.9	3.1	5.6	11	13	28	45	59	73	87	120	190	615K	20	131
2400-5	120KC	3	2	NO	2400-5	20	2.2	4.6	9.1	20	25	57	90	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	NO	2400-5	20	1.9	3.7	6.8	14	19	40	62	96	130	160	CE	CE	158K	20	121
2400-5	120KC	6	2	NO	2400-5	20	1.9	3.5	6.3	13	16	31	53	69	86	110	170	290	300K	20	114
2400-5	120KC	10	2	NO	2400-5	15	2.0	3.1	5.8	10	12	28	40	53	65	78	130	180	554K	15	135
2400-6	180KC	3	2	NO	2400-6	20	1.9	3.5	6.7	15	18	40	63	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	NO	2400-6	20	1.7	2.9	5.1	11	14	28	44	67	91	120	CE	CE	158K	20	121
2400-6	180KC	6	2	NO	2400-6	20	1.7	2.8	4.8	9.0	12	22	37	49	60	72	120	210	300K	20	114
2400-6	180KC	10	2	NO	2400-6	15	1.8	2.7	4.6	7.5	8.9	20	29	37	46	55	85	130	554K	15	135
2400-5	120KC	3	2	YES	2400-5	20	2.0	3.9	7.5	17	21	46	72	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	YES	2400-5	20	1.8	3.2	5.7	12	16	33	50	77	110	130	CE	CE	158K	20	121
2400-5	120KC	6	2	YES	2400-5	20	1.8	3.0	5.1	9.9	13	26	41	58	77	93	130	230	300K	20	114
2400-5	120KC	10	2	YES	2400-5	15	1.9	3.1	5.0	9.5	12	24	39	52	64	77	110	160	554K	15	135
2400-6	180KC	3	2	YES	2400-6	20	1.7	3.0	5.5	12	15	32	50	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	YES	2400-6	20	1.6	2.6	4.3	8.2	11	23	36	54	72	90	CE	CE	158K	20	121
2400-6	180KC	6	2	YES	2400-6	20	1.6	2.5	4.0	7.3	8.8	18	29	41	54	66	92	160	300K	20	114
2400-6	180KC	10	2	YES	2400-6	15	1.7	2.6	4.0	7.2	8.5	18	28	37	46	55	73	120	554K	15	135

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.1	1.2	1.3	1.6	1.9	3.2	4.7	5.9	7.8	9.1	13	19	2014K	500	5558
2400-5	120KC	4	1	NO	2400-5	350	1.2	1.2	1.4	1.6	1.8	2.7	3.9	5.2	6.3	7.3	11	15	4029K	500	5556
2400-5	120KC	6	1	NO	2400-5	350	1.3	1.4	1.5	1.8	1.9	2.6	3.6	4.9	5.8	6.7	9.4	14	8058K	500	5556
2400-5	120KC	10	1	NO	2400-5	350	1.5	1.6	1.7	2.0	2.1	2.8	3.5	4.2	5.5	6.2	8.8	13	16116K	500	5543
2400-6	180KC	3	1	NO	2400-6	350	1.1	1.2	1.3	1.6	1.8	2.9	4.2	5.2	6.8	8.0	12	17	2014K	500	5558
2400-6	180KC	4	1	NO	2400-6	350	1.2	1.2	1.3	1.6	1.7	2.5	3.5	4.7	5.6	6.5	9.1	14	4029K	500	5556
2400-6	180KC	6	1	NO	2400-6	350	1.3	1.3	1.5	1.7	1.8	2.4	3.3	4.5	5.3	6.0	8.4	12	8058K	500	5556
2400-6	180KC	10	1	NO	2400-6	350	1.5	1.6	1.7	2.0	2.1	2.7	3.3	3.9	5.0	5.7	8.0	12	16116K	500	5543
2400-5	120KC	3	2	NO	2400-5	350	1.1	1.2	1.3	1.5	1.7	2.7	3.9	4.8	6.2	7.2	10	15	2014K	500	5515
2400-5	120KC	4	2	NO	2400-5	350	1.1	1.2	1.3	1.5	1.7	2.5	3.3	4.4	5.2	6.0	8.3	13	4029K	500	5530
2400-5	120KC	6	2	NO	2400-5	350	1.3	1.3	1.4	1.6	1.8	2.4	3.2	4.0	5.0	5.7	7.6	11	8058K	500	5556
2400-5	120KC	10	2	NO	2400-5	300	1.5	1.5	1.6	1.9	2.0	2.5	3.2	3.8	4.9	5.6	7.0	11	15544K	500	5301
2400-6	180KC	3	2	NO	2400-6	350	1.1	1.2	1.3	1.5	1.7	2.6	3.7	4.5	5.8	6.7	9.3	14	2014K	500	5515
2400-6	180KC	4	2	NO	2400-6	350	1.1	1.2	1.3	1.5	1.6	2.4	3.2	4.2	4.9	5.7	7.8	12	4029K	500	5530
2400-6	180KC	6	2	NO	2400-6	350	1.3	1.3	1.4	1.6	1.7	2.3	3.1	3.9	4.7	5.4	7.4	11	8058K	500	5556
2400-6	180KC	10	2	NO	2400-6	300	1.5	1.5	1.6	1.9	2.0	2.5	3.1	3.7	4.7	5.3	6.8	11	15544K	500	5301
2400-5	120KC	3	2	YES	2400-5	350	1.1	1.2	1.2	1.5	1.6	2.5	3.5	4.2	5.4	6.3	8.6	13	2014K	500	5515
2400-5	120KC	4	2	YES	2400-5	350	1.1	1.2	1.3	1.5	1.6	2.3	3.1	4.0	4.7	5.4	7.3	11	4029K	500	5530
2400-5	120KC	6	2	YES	2400-5	350	1.3	1.3	1.4	1.6	1.7	2.2	3.0	3.8	4.5	5.1	6.9	9.7	8058K	500	5556
2400-5	120KC	10	2	YES	2400-5	300	1.5	1.5	1.6	1.9	2.0	2.5	3.0	3.5	4.4	5.0	6.8	9.4	15544K	500	5301
2400-6	180KC	3	2	YES	2400-6	350	1.1	1.2	1.2	1.5	1.6	2.5	3.4	4.1	5.3	6.1	8.3	13	2014K	500	5515
2400-6	180KC	4	2	YES	2400-6	350	1.1	1.2	1.3	1.5	1.6	2.3	3.0	3.9	4.6	5.2	7.1	11	4029K	500	5530
2400-6	180KC	6	2	YES	2400-6	350	1.3	1.3	1.4	1.6	1.7	2.2	2.9	3.8	4.4	5.0	6.8	9.5	8058K	500	5556
2400-6	180KC	10	2	YES	2400-6	300	1.5	1.5	1.6	1.9	2.0	2.5	3.0	3.5	4.4	4.9	6.6	9.2	15544K	500	5301

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	90	1.2	1.3	2.0	3.4	4.4	8.6	14	18	25	30	43	69	503K	125	1874
2400-5	120KC	4	1	NO	2400-5	90	1.2	1.4	1.7	3.0	3.4	6.4	11	14	19	22	32	48	1007K	125	1874
2400-5	120KC	6	1	NO	2400-5	90	1.3	1.5	1.8	2.7	3.1	5.7	8.9	12	16	19	25	40	2014K	125	1872
2400-5	120KC	10	1	NO	2400-5	90	1.6	1.8	2.1	2.6	2.9	5.1	8.0	11	13	17	22	36	4029K	125	1869
2400-6	180KC	3	1	NO	2400-6	90	1.1	1.3	1.8	2.8	3.5	6.6	11	14	19	22	32	50	503K	125	1874
2400-6	180KC	4	1	NO	2400-6	90	1.2	1.3	1.6	2.5	2.9	5.1	7.9	11	14	17	24	36	1007K	125	1874
2400-6	180KC	6	1	NO	2400-6	90	1.3	1.5	1.7	2.4	2.7	4.6	7.0	8.9	13	15	19	30	2014K	125	1872
2400-6	180KC	10	1	NO	2400-6	90	1.5	1.7	1.9	2.4	2.6	4.3	6.5	8.1	9.9	13	17	27	4029K	125	1869
2400-5	120KC	3	2	NO	2400-5	90	1.1	1.2	1.8	2.7	3.4	6.4	10	14	18	21	31	49	503K	125	1764
2400-5	120KC	4	2	NO	2400-5	90	1.2	1.3	1.5	2.4	2.8	4.9	7.6	10	14	16	23	34	1007K	125	1764
2400-5	120KC	6	2	NO	2400-5	90	1.3	1.4	1.6	2.3	2.6	4.5	6.6	8.5	12	14	19	28	2014K	125	1852
2400-5	120KC	10	2	NO	2400-5	90	1.5	1.6	1.8	2.4	2.6	4.2	5.6	8.1	11	12	16	23	3942K	125	1767
2400-6	180KC	3	2	NO	2400-6	90	1.1	1.2	1.6	2.3	2.8	5.0	7.7	11	14	16	23	36	503K	125	1764
2400-6	180KC	4	2	NO	2400-6	90	1.2	1.3	1.5	2.1	2.4	4.0	6.0	7.9	11	12	18	26	1007K	125	1764
2400-6	180KC	6	2	NO	2400-6	90	1.3	1.4	1.5	2.1	2.3	3.8	5.3	6.9	9.3	11	15	22	2014K	125	1852
2400-6	180KC	10	2	NO	2400-6	90	1.5	1.6	1.7	2.2	2.4	3.7	4.7	6.6	8.3	9.6	13	18	3942K	125	1767
2400-5	120KC	3	2	YES	2400-5	90	1.1	1.2	1.6	2.4	2.9	5.3	8.2	11	15	17	24	39	503K	125	1764
2400-5	120KC	4	2	YES	2400-5	90	1.2	1.3	1.5	2.2	2.4	4.1	6.3	8.1	11	13	19	27	1007K	125	1764
2400-5	120KC	6	2	YES	2400-5	90	1.3	1.4	1.6	2.1	2.3	3.7	5.6	7.0	9.3	11	15	23	2014K	125	1852
2400-5	120KC	10	2	YES	2400-5	90	1.5	1.6	1.8	2.1	2.3	3.5	5.2	6.4	8.0	9.9	13	21	3942K	125	1767
2400-6	180KC	3	2	YES	2400-6	90	1.1	1.2	1.5	2.1	2.5	4.2	6.3	8.3	11	13	18	29	503K	125	1764
2400-6	180KC	4	2	YES	2400-6	90	1.2	1.3	1.4	2.0	2.2	3.4	5.0	6.5	8.4	9.8	14	21	1007K	125	1764
2400-6	180KC	6	2	YES	2400-6	90	1.3	1.4	1.5	1.9	2.1	3.2	4.6	5.7	7.5	8.7	12	18	2014K	125	1852
2400-6	180KC	10	2	YES	2400-6	90	1.5	1.6	1.7	2.0	2.2	3.2	4.4	5.4	6.7	8.1	11	17	3942K	125	1767

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.3	2.2	3.8	8.2	10	24	38	51	69	82	120	CE	201K	50	808
2400-5	120KC	4	1	NO	2400-5	35	1.4	2.0	3.3	6.1	8.3	18	26	38	47	57	82	150	402K	50	807
2400-5	120KC	6	1	NO	2400-5	35	1.5	1.9	2.9	5.4	6.4	14	22	30	40	47	69	120	805K	50	807
2400-5	120KC	10	1	NO	2400-5	35	1.7	2.1	2.8	4.8	5.7	12	19	25	35	42	55	99	1611K	50	806
2400-6	180KC	3	1	NO	2400-6	35	1.2	1.9	3.0	6.1	7.4	17	27	36	49	58	83	CE	201K	50	808
2400-6	180KC	4	1	NO	2400-6	35	1.3	1.8	2.6	4.7	6.2	13	19	27	34	41	58	110	402K	50	807
2400-6	180KC	6	1	NO	2400-6	35	1.4	1.7	2.5	4.2	4.9	9.9	16	22	29	34	49	83	805K	50	807
2400-6	180KC	10	1	NO	2400-6	35	1.7	1.9	2.4	3.9	4.5	8.7	14	19	25	30	40	70	1611K	50	806
2400-5	120KC	3	2	NO	2400-5	35	1.2	1.9	3.0	6.1	7.4	17	28	36	49	59	84	CE	201K	50	760
2400-5	120KC	4	2	NO	2400-5	35	1.3	1.7	2.6	4.7	6.2	13	19	27	34	44	59	110	402K	50	760
2400-5	120KC	6	2	NO	2400-5	35	1.4	1.7	2.5	4.3	5.1	11	17	22	27	35	49	72	805K	50	759
2400-5	120KC	10	2	NO	2400-5	35	1.6	1.9	2.5	4.0	4.7	9.1	14	18	23	27	36	62	1585K	50	763
2400-6	180KC	3	2	NO	2400-6	35	1.2	1.6	2.4	4.6	5.5	13	20	26	35	41	59	CE	201K	50	760
2400-6	180KC	4	2	NO	2400-6	35	1.2	1.6	2.2	3.6	4.7	9.2	14	20	24	31	41	74	402K	50	760
2400-6	180KC	6	2	NO	2400-6	35	1.3	1.6	2.1	3.4	4.0	8.3	12	16	19	25	35	51	805K	50	759
2400-6	180KC	10	2	NO	2400-6	35	1.6	1.7	2.2	3.3	3.7	6.9	11	13	16	19	26	44	1585K	50	763
2400-5	120KC	3	2	YES	2400-5	35	1.2	1.7	2.6	5.1	6.1	14	22	29	39	47	67	CE	201K	50	760
2400-5	120KC	4	2	YES	2400-5	35	1.3	1.6	2.3	3.9	5.2	11	15	22	27	36	47	84	402K	50	760
2400-5	120KC	6	2	YES	2400-5	35	1.4	1.6	2.2	3.6	4.2	8.7	13	19	23	27	40	66	805K	50	759
2400-5	120KC	10	2	YES	2400-5	35	1.6	1.8	2.2	3.4	3.9	7.2	12	15	21	24	35	57	1585K	50	763
2400-6	180KC	3	2	YES	2400-6	35	1.2	1.5	2.2	3.9	4.6	9.8	16	21	28	33	47	CE	201K	50	760
2400-6	180KC	4	2	YES	2400-6	35	1.2	1.5	2.0	3.1	4.0	7.5	11	16	19	25	33	59	402K	50	760
2400-6	180KC	6	2	YES	2400-6	35	1.3	1.5	1.9	2.9	3.4	6.6	9.2	14	17	20	28	47	805K	50	759
2400-6	180KC	10	2	YES	2400-6	35	1.6	1.7	2.0	2.8	3.2	5.5	8.4	11	15	18	25	40	1585K	50	763

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.2	4.9	9.8	23	29	67	110	CE	CE	CE	CE	CE	80K	20	326
2400-5	120KC	4	1	NO	2400-5	20	2.0	3.7	7.4	17	21	46	75	120	160	200	CE	CE	161K	20	320
2400-5	120KC	6	1	NO	2400-5	20	1.9	3.3	6.2	13	18	39	57	92	120	150	190	330	322K	20	320
2400-5	120KC	10	1	NO	2400-5	20	2.1	3.1	5.5	12	16	34	50	77	100	120	160	240	644K	20	320
2400-6	180KC	3	1	NO	2400-6	20	1.8	3.7	7.2	17	21	48	71	CE	CE	CE	CE	CE	80K	20	326
2400-6	180KC	4	1	NO	2400-6	20	1.7	2.9	5.6	13	15	33	53	80	110	140	CE	CE	161K	20	320
2400-6	180KC	6	1	NO	2400-6	20	1.7	2.7	4.7	9.5	13	28	41	65	84	100	140	230	322K	20	320
2400-6	180KC	10	1	NO	2400-6	20	1.9	2.6	4.3	8.3	12	25	36	55	70	84	120	170	644K	20	320
2400-5	120KC	3	2	NO	2400-5	20	1.9	3.8	7.3	17	21	48	78	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	NO	2400-5	20	1.7	3.0	6.1	13	16	33	54	81	110	150	CE	CE	161K	20	301
2400-5	120KC	6	2	NO	2400-5	20	1.7	2.8	5.1	12	14	27	44	60	74	90	150	240	322K	20	315
2400-5	120KC	10	2	NO	2400-5	20	1.9	2.7	4.6	8.9	12	22	32	51	63	76	100	150	630K	20	302
2400-6	180KC	3	2	NO	2400-6	20	1.6	3.0	5.4	12	15	34	54	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	NO	2400-6	20	1.6	2.5	4.6	9.0	11	24	38	57	76	98	CE	CE	161K	20	301
2400-6	180KC	6	2	NO	2400-6	20	1.6	2.3	4.0	8.1	9.8	19	32	42	52	64	99	170	322K	20	315
2400-6	180KC	10	2	NO	2400-6	20	1.7	2.3	3.6	6.7	8.6	16	23	36	45	53	70	110	630K	20	302
2400-5	120KC	3	2	YES	2400-5	20	1.7	3.3	6.0	14	17	39	62	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	YES	2400-5	20	1.6	2.7	5.1	11	13	27	44	65	87	120	CE	CE	161K	20	301
2400-5	120KC	6	2	YES	2400-5	20	1.6	2.4	4.2	8.8	11	23	34	53	68	82	120	190	322K	20	315
2400-5	120KC	10	2	YES	2400-5	20	1.8	2.4	3.8	7.1	9.6	20	29	45	58	70	92	140	630K	20	302
2400-6	180KC	3	2	YES	2400-6	20	1.5	2.6	4.5	9.7	12	27	44	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	YES	2400-6	20	1.5	2.2	3.9	7.4	8.9	19	31	46	60	78	CE	CE	161K	20	301
2400-6	180KC	6	2	YES	2400-6	20	1.5	2.1	3.3	6.5	7.8	16	25	37	48	57	78	140	322K	20	315
2400-6	180KC	10	2	YES	2400-6	20	1.7	2.1	3.1	5.4	7.1	15	21	32	41	49	65	96	630K	20	302

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.0	1.1	1.2	1.5	1.8	2.7	3.9	5.3	6.3	8.1	11	17	2014K	500	2344
2400-5	120KC	4	1	NO	2400-5	350	1.1	1.1	1.2	1.5	1.7	2.4	3.4	4.1	4.9	6.3	8.0	13	3749K	500	2344
2400-5	120KC	6	1	NO	2400-5	250	1.2	1.2	1.3	1.5	1.7	2.3	2.9	3.8	4.4	5.1	7.0	10	8056K	500	2495
2400-5	120KC	10	1	NO	2400-5	150	1.4	1.4	1.5	1.7	1.8	2.2	2.8	3.7	4.3	4.8	6.6	9.2	15328K	500	2590
2400-6	180KC	3	1	NO	2400-6	350	1.0	1.1	1.1	1.4	1.6	2.3	3.1	4.1	4.9	6.2	7.9	13	2014K	500	2344
2400-6	180KC	4	1	NO	2400-6	350	1.1	1.1	1.2	1.4	1.5	2.1	2.8	3.4	3.9	4.9	6.2	9.5	3749K	500	2344
2400-6	180KC	6	1	NO	2400-6	250	1.2	1.2	1.3	1.4	1.6	2.1	2.5	3.1	3.6	4.1	5.5	7.8	8056K	500	2495
2400-6	180KC	10	1	NO	2400-6	150	1.4	1.4	1.5	1.6	1.7	2.0	2.5	3.2	3.6	4.0	5.4	7.3	15328K	500	2590
2400-5	120KC	3	2	NO	2400-5	350	1.0	1.1	1.1	1.5	1.6	2.3	3.1	4.0	5.0	6.0	7.9	13	2014K	500	2107
2400-5	120KC	4	2	NO	2400-5	350	1.1	1.1	1.2	1.4	1.5	2.1	2.7	3.3	3.9	4.8	6.0	9.2	3935K	500	2344
2400-5	120KC	6	2	NO	2400-5	250	1.2	1.2	1.3	1.4	1.6	2.1	2.5	3.1	3.6	4.2	5.5	7.9	7490K	500	2495
2400-5	120KC	10	2	NO	2400-5	150	1.4	1.4	1.5	1.6	1.6	2.1	2.5	2.9	3.2	4.1	5.2	7.0	13645K	384	2562
2400-6	180KC	3	2	NO	2400-6	350	1.0	1.0	1.1	1.4	1.4	2.0	2.6	3.2	4.0	4.7	6.2	9.1	2014K	500	2107
2400-6	180KC	4	2	NO	2400-6	350	1.1	1.1	1.2	1.3	1.4	1.8	2.3	2.7	3.2	3.8	4.7	7.1	3935K	500	2344
2400-6	180KC	6	2	NO	2400-6	250	1.2	1.2	1.2	1.4	1.5	1.9	2.2	2.7	3.0	3.5	4.5	6.3	7490K	500	2495
2400-6	180KC	10	2	NO	2400-6	150	1.4	1.4	1.4	1.5	1.6	1.9	2.3	2.6	2.8	3.5	4.4	5.7	13645K	384	2562
2400-5	120KC	3	2	YES	2400-5	350	1.0	1.1	1.1	1.4	1.5	2.1	2.7	3.4	4.1	5.0	6.5	9.8	2014K	500	2107
2400-5	120KC	4	2	YES	2400-5	350	1.1	1.1	1.2	1.3	1.4	1.9	2.4	2.8	3.3	4.0	5.0	7.5	3935K	500	2344
2400-5	120KC	6	2	YES	2400-5	250	1.2	1.2	1.3	1.3	1.5	1.9	2.2	2.7	3.0	3.5	4.5	6.4	7490K	500	2495
2400-5	120KC	10	2	YES	2400-5	150	1.4	1.4	1.5	1.6	1.6	1.9	2.3	2.8	3.1	3.4	4.5	5.9	13645K	384	2562
2400-6	180KC	3	2	YES	2400-6	350	1.0	1.0	1.1	1.3	1.4	1.8	2.3	2.8	3.4	3.9	5.1	7.5	2014K	500	2107
2400-6	180KC	4	2	YES	2400-6	350	1.1	1.1	1.1	1.3	1.4	1.7	2.1	2.4	2.8	3.3	4.0	5.9	3935K	500	2344
2400-6	180KC	6	2	YES	2400-6	250	1.2	1.2	1.2	1.3	1.4	1.7	2.0	2.4	2.6	3.0	3.7	5.2	7490K	500	2495
2400-6	180KC	10	2	YES	2400-6	150	1.4	1.4	1.4	1.5	1.6	1.8	2.1	2.5	2.8	3.0	3.8	4.9	13645K	384	2562

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	95	1.1	1.5	2.1	3.8	4.5	9.7	16	21	28	33	47	71	503K	125	805
2400-5	120KC	4	1	NO	2400-5	95	1.2	1.4	1.9	3.0	3.9	7.4	11	16	19	23	33	53	944K	125	773
2400-5	120KC	6	1	NO	2400-5	90	1.3	1.4	1.9	2.8	3.2	6.0	9.1	13	16	19	28	41	2014K	125	769
2400-5	120KC	10	1	NO	2400-5	50	1.5	1.7	1.9	2.8	3.1	5.5	8.5	11	15	18	23	37	3891K	125	853
2400-6	180KC	3	1	NO	2400-6	95	1.1	1.4	1.8	3.0	3.5	7.1	11	15	20	23	33	51	503K	125	805
2400-6	180KC	4	1	NO	2400-6	95	1.1	1.3	1.7	2.5	3.1	5.5	7.7	11	14	17	23	37	944K	125	773
2400-6	180KC	6	1	NO	2400-6	90	1.2	1.4	1.7	2.3	2.6	4.6	6.7	8.9	12	14	20	29	2014K	125	769
2400-6	180KC	10	1	NO	2400-6	50	1.4	1.6	1.8	2.4	2.6	4.3	6.4	8.0	11	13	17	27	3891K	125	853
2400-5	120KC	3	2	NO	2400-5	95	1.1	1.4	1.9	3.0	3.6	7.3	12	15	20	24	34	54	503K	125	652
2400-5	120KC	4	2	NO	2400-5	95	1.1	1.3	1.7	2.5	3.1	5.7	8.2	12	14	18	24	39	994K	125	652
2400-5	120KC	6	2	NO	2400-5	90	1.2	1.4	1.7	2.4	2.8	5.2	7.2	9.5	12	15	21	30	1892K	125	708
2400-5	120KC	10	2	NO	2400-5	50	1.4	1.5	1.8	2.5	2.8	4.7	6.7	8.4	11	12	16	27	3502K	96	844
2400-6	180KC	3	2	NO	2400-6	95	1.1	1.3	1.6	2.4	2.9	5.4	8.2	11	14	17	24	38	503K	125	652
2400-6	180KC	4	2	NO	2400-6	95	1.1	1.3	1.5	2.1	2.5	4.3	6.1	8.2	10	13	17	27	994K	125	652
2400-6	180KC	6	2	NO	2400-6	90	1.2	1.3	1.6	2.1	2.4	4.0	5.4	7.1	8.9	11	15	22	1892K	125	708
2400-6	180KC	10	2	NO	2400-6	50	1.4	1.5	1.7	2.2	2.4	3.8	5.2	6.4	7.5	8.7	12	19	3502K	96	844
2400-5	120KC	3	2	YES	2400-5	95	1.1	1.3	1.7	2.7	3.1	6.1	9.3	13	17	20	28	44	503K	125	652
2400-5	120KC	4	2	YES	2400-5	95	1.1	1.3	1.6	2.2	2.7	4.8	6.8	9.3	12	15	20	31	994K	125	652
2400-5	120KC	6	2	YES	2400-5	90	1.2	1.3	1.6	2.2	2.5	4.3	5.9	8.1	9.9	12	17	25	1892K	125	708
2400-5	120KC	10	2	YES	2400-5	50	1.4	1.5	1.7	2.2	2.4	3.9	5.7	7.1	9.4	11	15	23	3502K	96	844
2400-6	180KC	3	2	YES	2400-6	95	1.1	1.2	1.5	2.2	2.5	4.5	6.8	8.8	12	14	20	31	503K	125	652
2400-6	180KC	4	2	YES	2400-6	95	1.1	1.2	1.5	1.9	2.2	3.6	5.1	6.8	8.2	11	14	22	994K	125	652
2400-6	180KC	6	2	YES	2400-6	90	1.2	1.3	1.5	1.9	2.1	3.4	4.4	6.0	7.2	8.4	12	18	1892K	125	708
2400-6	180KC	10	2	YES	2400-6	50	1.4	1.5	1.6	2.0	2.2	3.2	4.5	5.4	7.1	8.2	11	17	3502K	96	844

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.5	2.5	4.5	9.6	12	26	40	58	72	92	130	CE	201K	50	333
2400-5	120KC	4	1	NO	2400-5	35	1.4	2.1	3.5	7.3	8.9	19	30	40	54	65	86	160	402K	50	333
2400-5	120KC	6	1	NO	2400-5	35	1.4	2.0	3.2	5.8	7.7	16	23	34	42	50	73	120	805K	50	332
2400-5	120KC	10	1	NO	2400-5	25	1.7	2.0	3.1	5.4	6.6	15	21	31	38	45	65	97	1558K	50	357
2400-6	180KC	3	1	NO	2400-6	35	1.4	2.1	3.4	7.0	8.5	19	28	40	50	64	85	CE	201K	50	333
2400-6	180KC	4	1	NO	2400-6	35	1.3	1.8	2.8	5.4	6.5	14	22	28	38	45	60	120	402K	50	333
2400-6	180KC	6	1	NO	2400-6	35	1.4	1.8	2.6	4.4	5.7	12	17	24	30	35	51	78	805K	50	332
2400-6	180KC	10	1	NO	2400-6	25	1.6	1.8	2.6	4.2	5.1	11	15	22	27	32	46	68	1558K	50	357
2400-5	120KC	3	2	NO	2400-5	35	1.4	2.1	3.5	7.2	8.8	20	31	42	56	67	95	CE	201K	50	286
2400-5	120KC	4	2	NO	2400-5	35	1.3	1.9	2.9	5.6	6.7	14	22	30	40	47	68	120	399K	50	285
2400-5	120KC	6	2	NO	2400-5	35	1.3	1.8	2.7	4.8	6.2	12	18	25	31	38	56	82	761K	50	321
2400-5	120KC	10	2	NO	2400-5	25	1.5	1.9	2.7	4.6	5.8	9.9	14	22	27	32	43	63	1394K	38	354
2400-6	180KC	3	2	NO	2400-6	35	1.3	1.8	2.8	5.3	6.4	14	22	29	39	46	66	CE	201K	50	286
2400-6	180KC	4	2	NO	2400-6	35	1.3	1.6	2.4	4.2	5.0	9.8	16	21	28	33	47	81	399K	50	285
2400-6	180KC	6	2	NO	2400-6	35	1.3	1.6	2.3	3.7	4.7	8.5	13	18	22	27	39	57	761K	50	321
2400-6	180KC	10	2	NO	2400-6	25	1.5	1.8	2.4	3.7	4.5	7.4	11	16	20	23	30	44	1394K	38	354
2400-5	120KC	3	2	YES	2400-5	35	1.3	1.9	3.1	6.1	7.3	17	25	34	45	54	77	CE	201K	50	286
2400-5	120KC	4	2	YES	2400-5	35	1.3	1.7	2.6	4.8	5.7	12	18	24	32	38	55	94	399K	50	285
2400-5	120KC	6	2	YES	2400-5	35	1.3	1.7	2.4	4.0	5.1	9.8	15	21	25	31	45	68	761K	50	321
2400-5	120KC	10	2	YES	2400-5	25	1.5	1.8	2.4	3.9	4.9	9.3	14	20	24	28	40	61	1394K	38	354
2400-6	180KC	3	2	YES	2400-6	35	1.2	1.7	2.4	4.5	5.4	12	18	24	32	38	53	CE	201K	50	286
2400-6	180KC	4	2	YES	2400-6	35	1.2	1.5	2.2	3.6	4.3	8.1	13	17	23	27	38	66	399K	50	285
2400-6	180KC	6	2	YES	2400-6	35	1.3	1.5	2.1	3.2	3.9	7.2	11	15	18	22	32	48	761K	50	321
2400-6	180KC	10	2	YES	2400-6	25	1.5	1.7	2.1	3.2	3.9	7.0	9.8	14	18	21	29	44	1394K	38	354

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.5	5.8	12	26	33	73	120	CE	CE	CE	CE	CE	80K	20	125
2400-5	120KC	4	1	NO	2400-5	20	2.1	4.5	8.8	19	24	54	80	130	180	220	CE	CE	161K	20	125
2400-5	120KC	6	1	NO	2400-5	20	2.0	4.0	7.6	16	20	42	68	92	120	150	210	360	322K	20	124
2400-5	120KC	10	1	NO	2400-5	15	2.0	3.5	7.0	15	18	38	60	80	99	120	160	250	621K	20	137
2400-6	180KC	3	1	NO	2400-6	20	2.1	4.3	8.4	19	24	51	79	CE	CE	CE	CE	CE	80K	20	125
2400-6	180KC	4	1	NO	2400-6	20	1.8	3.4	6.4	13	17	38	56	87	120	150	CE	CE	161K	20	125
2400-6	180KC	6	1	NO	2400-6	20	1.8	3.2	5.6	12	14	29	47	64	80	110	140	250	322K	20	124
2400-6	180KC	10	1	NO	2400-6	15	1.8	2.9	5.3	11	13	27	43	56	70	83	110	180	621K	20	137
2400-5	120KC	3	2	NO	2400-5	20	2.1	4.5	8.9	20	25	56	88	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	NO	2400-5	20	1.9	3.6	6.7	14	19	39	61	94	130	160	CE	CE	158K	20	121
2400-5	120KC	6	2	NO	2400-5	20	1.8	3.4	6.1	12	15	31	52	69	85	110	170	280	300K	20	114
2400-5	120KC	10	2	NO	2400-5	15	1.9	3.1	5.7	9.8	12	27	40	52	64	77	120	180	554K	15	135
2400-6	180KC	3	2	NO	2400-6	20	1.8	3.4	6.5	14	18	39	61	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	NO	2400-6	20	1.7	2.8	4.9	9.7	13	28	43	66	88	110	CE	CE	158K	20	121
2400-6	180KC	6	2	NO	2400-6	20	1.6	2.7	4.6	8.8	11	22	37	48	59	71	120	200	300K	20	114
2400-6	180KC	10	2	NO	2400-6	15	1.7	2.6	4.5	7.3	8.7	20	28	37	45	54	84	130	554K	15	135
2400-5	120KC	3	2	YES	2400-5	20	1.9	3.8	7.4	16	20	45	72	CE	CE	CE	CE	CE	80K	20	105
2400-5	120KC	4	2	YES	2400-5	20	1.7	3.1	5.6	12	15	32	50	76	110	130	CE	CE	158K	20	121
2400-5	120KC	6	2	YES	2400-5	20	1.7	2.9	5.0	9.8	12	25	41	57	76	92	130	230	300K	20	114
2400-5	120KC	10	2	YES	2400-5	15	1.8	3.0	4.9	9.3	12	24	38	51	63	76	100	160	554K	15	135
2400-6	180KC	3	2	YES	2400-6	20	1.7	3.0	5.4	12	14	31	50	CE	CE	CE	CE	CE	80K	20	105
2400-6	180KC	4	2	YES	2400-6	20	1.6	2.5	4.2	8.1	11	23	35	53	71	88	CE	CE	158K	20	121
2400-6	180KC	6	2	YES	2400-6	20	1.6	2.4	3.9	7.1	8.6	18	29	40	53	65	90	160	300K	20	114
2400-6	180KC	10	2	YES	2400-6	15	1.7	2.5	3.9	7.0	8.3	17	28	37	45	54	72	120	554K	15	135

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.0	1.1	1.2	1.4	1.5	2.5	3.5	4.3	5.7	6.7	9.5	14	2014K	500	5558
2400-5	120KC	4	1	NO	2400-5	350	1.1	1.1	1.2	1.4	1.4	2.0	2.8	3.7	4.4	5.1	7.2	11	4029K	500	5556
2400-5	120KC	6	1	NO	2400-5	350	1.2	1.2	1.3	1.5	1.5	1.9	2.6	3.4	4.0	4.5	6.3	8.8	8058K	500	5556
2400-5	120KC	10	1	NO	2400-5	300	1.4	1.4	1.5	1.7	1.8	2.1	2.5	2.8	3.7	4.2	5.8	8.0	16116K	500	5608
2400-6	180KC	3	1	NO	2400-6	350	1.0	1.1	1.1	1.3	1.4	2.1	2.9	3.5	4.5	5.2	7.2	11	2014K	500	5558
2400-6	180KC	4	1	NO	2400-6	350	1.1	1.1	1.2	1.3	1.4	1.8	2.4	3.1	3.6	4.1	5.6	7.9	4029K	500	5556
2400-6	180KC	6	1	NO	2400-6	350	1.2	1.2	1.3	1.4	1.5	1.7	2.3	2.9	3.3	3.7	5.0	6.9	8058K	500	5556
2400-6	180KC	10	1	NO	2400-6	300	1.4	1.4	1.5	1.6	1.7	2.0	2.2	2.5	3.2	3.5	4.8	6.4	16116K	500	5608
2400-5	120KC	3	2	NO	2400-5	350	1.0	1.1	1.1	1.2	1.4	2.1	2.8	3.4	4.4	5.0	7.0	11	2014K	500	5515
2400-5	120KC	4	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.8	2.3	3.0	3.4	3.9	5.4	7.8	4029K	500	5530
2400-5	120KC	6	2	NO	2400-5	350	1.2	1.2	1.3	1.4	1.4	1.7	2.2	2.6	3.2	3.6	4.8	6.7	8058K	500	5556
2400-5	120KC	10	2	NO	2400-5	300	1.4	1.4	1.5	1.6	1.6	1.8	2.2	2.5	3.1	3.5	4.2	6.4	15544K	500	5301
2400-6	180KC	3	2	NO	2400-6	350	1.0	1.0	1.1	1.2	1.3	1.8	2.4	2.8	3.5	4.0	5.4	7.9	2014K	500	5515
2400-6	180KC	4	2	NO	2400-6	350	1.1	1.1	1.1	1.2	1.3	1.7	2.0	2.5	2.9	3.2	4.3	6.2	4029K	500	5530
2400-6	180KC	6	2	NO	2400-6	350	1.2	1.2	1.2	1.3	1.4	1.6	2.0	2.3	2.8	3.1	4.0	5.5	8058K	500	5556
2400-6	180KC	10	2	NO	2400-6	300	1.4	1.4	1.4	1.5	1.6	1.8	2.1	2.3	2.8	3.0	3.6	5.3	15544K	500	5301
2400-5	120KC	3	2	YES	2400-5	350	1.0	1.1	1.1	1.2	1.3	1.8	2.4	2.9	3.7	4.2	5.7	8.4	2014K	500	5515
2400-5	120KC	4	2	YES	2400-5	350	1.1	1.1	1.2	1.2	1.3	1.7	2.1	2.6	2.9	3.3	4.5	6.4	4029K	500	5530
2400-5	120KC	6	2	YES	2400-5	350	1.2	1.2	1.3	1.3	1.4	1.6	2.0	2.5	2.8	3.1	4.1	5.5	8058K	500	5556
2400-5	120KC	10	2	YES	2400-5	300	1.4	1.4	1.5	1.6	1.6	1.8	2.0	2.2	2.7	3.0	3.9	5.1	15544K	500	5301
2400-6	180KC	3	2	YES	2400-6	350	1.0	1.0	1.1	1.2	1.3	1.7	2.1	2.4	3.0	3.4	4.5	6.5	2014K	500	5515
2400-6	180KC	4	2	YES	2400-6	350	1.1	1.1	1.1	1.2	1.2	1.6	1.9	2.2	2.5	2.8	3.7	5.1	4029K	500	5530
2400-6	180KC	6	2	YES	2400-6	350	1.2	1.2	1.2	1.3	1.3	1.5	1.8	2.2	2.4	2.7	3.4	4.5	8058K	500	5556
2400-6	180KC	10	2	YES	2400-6	300	1.4	1.4	1.4	1.5	1.6	1.7	1.9	2.1	2.5	2.7	3.4	4.3	15544K	500	5301

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	90	1.1	1.3	1.9	3.1	4.1	8.0	13	17	23	28	40	64	503K	125	1874
2400-5	120KC	4	1	NO	2400-5	90	1.2	1.3	1.6	2.7	3.1	5.9	9.5	13	17	21	30	44	1007K	125	1874
2400-5	120KC	6	1	NO	2400-5	90	1.3	1.4	1.7	2.5	2.8	5.2	8.1	11	15	17	23	37	2014K	125	1872
2400-5	120KC	10	1	NO	2400-5	90	1.5	1.7	1.9	2.4	2.7	4.7	7.3	9.2	12	15	20	33	4029K	125	1869
2400-6	180KC	3	1	NO	2400-6	90	1.1	1.2	1.7	2.5	3.2	5.9	9.2	12	17	20	28	45	503K	125	1874
2400-6	180KC	4	1	NO	2400-6	90	1.1	1.3	1.4	2.3	2.5	4.5	6.9	8.9	13	15	21	31	1007K	125	1874
2400-6	180KC	6	1	NO	2400-6	90	1.2	1.4	1.5	2.1	2.4	4.0	6.1	7.7	11	13	16	26	2014K	125	1872
2400-6	180KC	10	1	NO	2400-6	90	1.4	1.6	1.8	2.1	2.3	3.7	5.6	6.9	8.4	11	15	23	4029K	125	1869
2400-5	120KC	3	2	NO	2400-5	90	1.1	1.2	1.7	2.5	3.2	6.0	9.4	13	17	20	29	46	503K	125	1764
2400-5	120KC	4	2	NO	2400-5	90	1.1	1.2	1.5	2.3	2.6	4.5	7.1	9.3	13	15	22	32	1007K	125	1764
2400-5	120KC	6	2	NO	2400-5	90	1.2	1.3	1.5	2.2	2.4	4.2	6.2	8.0	11	13	17	26	2014K	125	1852
2400-5	120KC	10	2	NO	2400-5	90	1.4	1.5	1.7	2.2	2.4	3.9	5.2	7.4	9.4	12	15	21	3942K	125	1767
2400-6	180KC	3	2	NO	2400-6	90	1.1	1.1	1.5	2.1	2.6	4.5	6.9	9.1	12	14	20	33	503K	125	1764
2400-6	180KC	4	2	NO	2400-6	90	1.1	1.2	1.4	1.9	2.1	3.5	5.3	6.9	8.9	11	16	23	1007K	125	1764
2400-6	180KC	6	2	NO	2400-6	90	1.2	1.3	1.4	1.9	2.1	3.3	4.7	6.0	8.0	9.4	13	19	2014K	125	1852
2400-6	180KC	10	2	NO	2400-6	90	1.4	1.5	1.6	1.9	2.1	3.2	4.1	5.6	7.1	8.3	11	15	3942K	125	1767
2400-5	120KC	3	2	YES	2400-5	90	1.1	1.2	1.5	2.2	2.8	5.0	7.8	11	14	16	23	37	503K	125	1764
2400-5	120KC	4	2	YES	2400-5	90	1.1	1.2	1.4	2.1	2.3	3.9	5.9	7.7	11	12	18	26	1007K	125	1764
2400-5	120KC	6	2	YES	2400-5	90	1.2	1.3	1.5	2.0	2.1	3.5	5.2	6.5	8.8	11	14	22	2014K	125	1852
2400-5	120KC	10	2	YES	2400-5	90	1.4	1.5	1.7	2.0	2.1	3.3	4.8	5.9	7.5	9.2	12	20	3942K	125	1767
2400-6	180KC	3	2	YES	2400-6	90	1.1	1.1	1.4	1.9	2.3	3.8	5.7	7.5	9.7	12	17	26	503K	125	1764
2400-6	180KC	4	2	YES	2400-6	90	1.1	1.2	1.3	1.8	1.9	3.0	4.4	5.7	7.4	8.6	13	18	1007K	125	1764
2400-6	180KC	6	2	YES	2400-6	90	1.2	1.3	1.4	1.7	1.9	2.8	4.0	4.9	6.4	7.5	9.6	16	2014K	125	1852
2400-6	180KC	10	2	YES	2400-6	90	1.4	1.5	1.6	1.8	1.9	2.7	3.8	4.6	5.8	6.9	8.6	14	3942K	125	1767

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.3	2.1	3.6	7.9	9.6	23	37	49	66	79	120	CE	201K	50	808
2400-5	120KC	4	1	NO	2400-5	35	1.3	1.9	3.1	5.8	8.0	17	25	36	45	55	79	150	402K	50	807
2400-5	120KC	6	1	NO	2400-5	35	1.4	1.8	2.8	5.1	6.1	13	21	29	38	45	66	120	805K	50	807
2400-5	120KC	10	1	NO	2400-5	35	1.6	2.0	2.6	4.6	5.4	11	19	24	33	40	52	94	1611K	50	806
2400-6	180KC	3	1	NO	2400-6	35	1.2	1.8	2.8	5.8	7.0	16	26	34	46	55	79	CE	201K	50	808
2400-6	180KC	4	1	NO	2400-6	35	1.2	1.7	2.5	4.4	5.9	12	18	26	32	38	55	98	402K	50	807
2400-6	180KC	6	1	NO	2400-6	35	1.4	1.6	2.3	3.9	4.6	9.3	15	21	27	32	46	78	805K	50	807
2400-6	180KC	10	1	NO	2400-6	35	1.6	1.8	2.3	3.6	4.2	8.1	13	17	24	28	37	66	1611K	50	806
2400-5	120KC	3	2	NO	2400-5	35	1.2	1.8	2.9	6.0	7.2	17	27	35	48	57	82	CE	201K	50	760
2400-5	120KC	4	2	NO	2400-5	35	1.2	1.7	2.6	4.5	6.0	13	18	27	33	43	57	110	402K	50	760
2400-5	120KC	6	2	NO	2400-5	35	1.3	1.6	2.4	4.1	4.9	11	16	22	27	34	48	71	805K	50	759
2400-5	120KC	10	2	NO	2400-5	35	1.5	1.8	2.4	3.9	4.5	8.8	14	18	22	26	35	61	1585K	50	763
2400-6	180KC	3	2	NO	2400-6	35	1.1	1.6	2.3	4.4	5.3	12	19	25	33	40	57	CE	201K	50	760
2400-6	180KC	4	2	NO	2400-6	35	1.2	1.5	2.1	3.5	4.5	8.8	13	19	23	30	40	71	402K	50	760
2400-6	180KC	6	2	NO	2400-6	35	1.3	1.5	2.0	3.2	3.8	7.9	12	15	19	24	34	50	805K	50	759
2400-6	180KC	10	2	NO	2400-6	35	1.5	1.7	2.1	3.1	3.5	6.5	9.9	13	16	19	25	43	1585K	50	763
2400-5	120KC	3	2	YES	2400-5	35	1.2	1.7	2.5	5.0	6.0	14	22	29	39	46	66	CE	201K	50	760
2400-5	120KC	4	2	YES	2400-5	35	1.2	1.6	2.3	3.8	5.1	11	15	22	27	35	46	83	402K	50	760
2400-5	120KC	6	2	YES	2400-5	35	1.3	1.5	2.1	3.5	4.1	8.5	13	18	23	27	39	65	805K	50	759
2400-5	120KC	10	2	YES	2400-5	35	1.5	1.8	2.1	3.3	3.7	7.0	12	15	20	24	35	56	1585K	50	763
2400-6	180KC	3	2	YES	2400-6	35	1.1	1.5	2.1	3.8	4.5	9.6	16	20	27	32	46	CE	201K	50	760
2400-6	180KC	4	2	YES	2400-6	35	1.2	1.4	1.9	3.0	3.9	7.3	11	15	19	25	32	57	402K	50	760
2400-6	180KC	6	2	YES	2400-6	35	1.3	1.4	1.9	2.8	3.2	6.4	9.0	13	16	19	27	46	805K	50	759
2400-6	180KC	10	2	YES	2400-6	35	1.5	1.7	1.9	2.7	3.0	5.3	8.1	11	15	17	25	39	1585K	50	763

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	/CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.1	4.7	9.5	23	28	65	98	CE	CE	CE	CE	CE	80K	20	326
2400-5	120KC	4	1	NO	2400-5	20	1.9	3.6	7.2	17	21	45	73	110	150	200	CE	CE	161K	20	320
2400-5	120KC	6	1	NO	2400-5	20	1.8	3.2	6.0	13	18	37	55	90	120	140	190	320	322K	20	320
2400-5	120KC	10	1	NO	2400-5	20	2.0	2.9	5.3	11	16	33	49	75	97	120	160	230	644K	20	320
2400-6	180KC	3	1	NO	2400-6	20	1.8	3.6	6.9	16	20	46	68	CE	CE	CE	CE	CE	80K	20	326
2400-6	180KC	4	1	NO	2400-6	20	1.6	2.8	5.3	12	15	31	51	76	110	140	CE	CE	161K	20	320
2400-6	180KC	6	1	NO	2400-6	20	1.6	2.6	4.5	9.0	13	26	39	62	80	95	130	220	322K	20	320
2400-6	180KC	10	1	NO	2400-6	20	1.8	2.4	4.1	7.9	11	23	34	52	67	80	110	160	644K	20	320
2400-5	120KC	3	2	NO	2400-5	20	1.8	3.7	7.1	17	21	48	76	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	NO	2400-5	20	1.7	3.0	6.0	13	15	33	53	80	110	140	CE	CE	161K	20	301
2400-5	120KC	6	2	NO	2400-5	20	1.6	2.7	4.9	11	14	27	43	59	73	89	140	240	322K	20	315
2400-5	120KC	10	2	NO	2400-5	20	1.8	2.6	4.4	8.7	12	22	32	51	63	75	99	150	630K	20	302
2400-6	180KC	3	2	NO	2400-6	20	1.6	2.9	5.2	12	15	33	53	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	NO	2400-6	20	1.5	2.4	4.5	8.7	11	23	37	55	74	96	CE	CE	161K	20	301
2400-6	180KC	6	2	NO	2400-6	20	1.5	2.2	3.8	7.8	9.4	19	31	41	51	63	96	170	322K	20	315
2400-6	180KC	10	2	NO	2400-6	20	1.7	2.2	3.5	6.4	8.4	16	22	35	44	52	69	110	630K	20	302
2400-5	120KC	3	2	YES	2400-5	20	1.7	3.2	5.9	14	17	39	62	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	YES	2400-5	20	1.6	2.6	5.0	10	13	26	43	65	86	120	CE	CE	161K	20	301
2400-5	120KC	6	2	YES	2400-5	20	1.5	2.4	4.1	8.6	11	22	34	53	67	81	110	190	322K	20	315
2400-5	120KC	10	2	YES	2400-5	20	1.8	2.3	3.7	6.9	9.4	20	29	45	58	69	91	140	630K	20	302
2400-6	180KC	3	2	YES	2400-6	20	1.5	2.5	4.4	9.5	12	27	43	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	YES	2400-6	20	1.4	2.2	3.8	7.2	8.8	19	30	45	60	77	CE	CE	161K	20	301
2400-6	180KC	6	2	YES	2400-6	20	1.4	2.0	3.3	6.3	7.6	16	24	37	47	56	76	130	322K	20	315
2400-6	180KC	10	2	YES	2400-6	20	1.6	2.0	3.0	5.2	6.9	14	21	31	40	48	63	94	630K	20	302

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.0	1.0	1.1	1.3	1.4	2.4	3.4	4.2	5.5	6.4	9.2	14	2014K	500	5558
2400-5	120KC	4	1	NO	2400-5	350	1.0	1.1	1.2	1.3	1.4	2.0	2.7	3.6	4.2	4.9	6.9	9.8	4029K	500	5556
2400-5	120KC	6	1	NO	2400-5	350	1.1	1.2	1.3	1.4	1.5	1.8	2.5	3.3	3.8	4.3	6.1	8.5	8058K	500	5556
2400-5	120KC	10	1	NO	2400-5	350	1.3	1.4	1.4	1.6	1.7	2.0	2.3	2.7	3.5	3.9	5.5	7.6	16116K	500	5543
2400-6	180KC	3	1	NO	2400-6	350	1.0	1.0	1.1	1.2	1.3	2.0	2.7	3.3	4.3	4.9	6.9	9.8	2014K	500	5558
2400-6	180KC	4	1	NO	2400-6	350	1.0	1.1	1.1	1.2	1.3	1.7	2.3	2.9	3.4	3.8	5.3	7.5	4029K	500	5556
2400-6	180KC	6	1	NO	2400-6	350	1.1	1.2	1.2	1.3	1.4	1.6	2.1	2.7	3.1	3.5	4.8	6.5	8058K	500	5556
2400-6	180KC	10	1	NO	2400-6	350	1.3	1.3	1.4	1.5	1.6	1.8	2.1	2.4	3.0	3.3	4.5	6.0	16116K	500	5543
2400-5	120KC	3	2	NO	2400-5	350	1.0	1.0	1.1	1.2	1.3	2.0	2.7	3.2	4.2	4.9	6.8	10	2014K	500	5515
2400-5	120KC	4	2	NO	2400-5	350	1.0	1.1	1.1	1.2	1.3	1.8	2.2	2.9	3.3	3.7	5.2	7.5	4029K	500	5530
2400-5	120KC	6	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.6	2.1	2.5	3.1	3.5	4.6	6.5	8058K	500	5556
2400-5	120KC	10	2	NO	2400-5	350	1.3	1.3	1.4	1.5	1.5	1.7	2.1	2.4	3.0	3.3	4.0	6.1	15522K	500	5236
2400-6	180KC	3	2	NO	2400-6	350	1.0	1.0	1.0	1.1	1.2	1.7	2.2	2.6	3.3	3.8	5.2	7.6	2014K	500	5515
2400-6	180KC	4	2	NO	2400-6	350	1.0	1.0	1.1	1.2	1.2	1.6	1.9	2.4	2.7	3.1	4.1	5.8	4029K	500	5530
2400-6	180KC	6	2	NO	2400-6	350	1.1	1.1	1.2	1.2	1.3	1.5	1.9	2.2	2.6	2.9	3.8	5.2	8058K	500	5556
2400-6	180KC	10	2	NO	2400-6	350	1.3	1.3	1.3	1.4	1.5	1.6	1.9	2.1	2.6	2.8	3.3	4.9	15522K	500	5236
2400-5	120KC	3	2	YES	2400-5	350	1.0	1.0	1.1	1.2	1.3	1.8	2.3	2.8	3.5	4.1	5.6	8.1	2014K	500	5515
2400-5	120KC	4	2	YES	2400-5	350	1.0	1.1	1.1	1.2	1.2	1.6	2.0	2.5	2.8	3.2	4.3	6.2	4029K	500	5530
2400-5	120KC	6	2	YES	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.5	1.9	2.3	2.6	2.9	3.9	5.2	8058K	500	5556
2400-5	120KC	10	2	YES	2400-5	350	1.3	1.3	1.4	1.5	1.5	1.7	1.9	2.1	2.6	2.8	3.7	4.8	15522K	500	5236
2400-6	180KC	3	2	YES	2400-6	350	1.0	1.0	1.0	1.1	1.2	1.6	2.0	2.3	2.9	3.2	4.3	6.2	2014K	500	5515
2400-6	180KC	4	2	YES	2400-6	350	1.0	1.0	1.1	1.1	1.2	1.5	1.8	2.1	2.4	2.7	3.5	4.9	4029K	500	5530
2400-6	180KC	6	2	YES	2400-6	350	1.1	1.1	1.2	1.2	1.3	1.4	1.7	2.1	2.3	2.5	3.2	4.2	8058K	500	5556
2400-6	180KC	10	2	YES	2400-6	350	1.3	1.3	1.3	1.4	1.5	1.6	1.8	1.9	2.3	2.5	3.2	4.0	15522K	500	5236

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	90	1.1	1.2	1.9	3.0	4.0	7.9	13	17	23	27	39	64	503K	125	1874
2400-5	120KC	4	1	NO	2400-5	90	1.1	1.3	1.5	2.7	3.1	5.8	9.3	12	17	20	29	43	1007K	125	1874
2400-5	120KC	6	1	NO	2400-5	90	1.2	1.4	1.6	2.4	2.7	5.1	8.0	11	15	17	22	37	2014K	125	1872
2400-5	120KC	10	1	NO	2400-5	90	1.4	1.6	1.8	2.3	2.6	4.5	7.1	9.0	12	15	20	32	4029K	125	1869
2400-6	180KC	3	1	NO	2400-6	90	1.0	1.1	1.6	2.4	3.1	5.7	9.0	12	16	19	28	44	503K	125	1874
2400-6	180KC	4	1	NO	2400-6	90	1.1	1.2	1.4	2.2	2.5	4.3	6.8	8.7	12	14	21	31	1007K	125	1874
2400-6	180KC	6	1	NO	2400-6	90	1.2	1.3	1.5	2.0	2.3	3.9	5.9	7.5	11	12	16	26	2014K	125	1872
2400-6	180KC	10	1	NO	2400-6	90	1.4	1.5	1.7	2.0	2.2	3.6	5.4	6.7	8.2	11	14	23	4029K	125	1869
2400-5	120KC	3	2	NO	2400-5	90	1.0	1.1	1.6	2.5	3.2	5.9	9.3	13	17	20	29	46	503K	125	1764
2400-5	120KC	4	2	NO	2400-5	90	1.1	1.2	1.4	2.2	2.5	4.5	7.0	9.2	13	15	22	32	1007K	125	1764
2400-5	120KC	6	2	NO	2400-5	90	1.2	1.3	1.5	2.1	2.3	4.1	6.1	7.9	11	13	17	26	2014K	125	1852
2400-5	120KC	10	2	NO	2400-5	90	1.3	1.4	1.6	2.1	2.3	3.8	5.1	7.2	9.3	12	15	21	3942K	125	1767
2400-6	180KC	3	2	NO	2400-6	90	1.0	1.1	1.4	2.0	2.5	4.4	6.8	9.0	12	14	20	32	503K	125	1764
2400-6	180KC	4	2	NO	2400-6	90	1.1	1.1	1.3	1.9	2.1	3.4	5.2	6.7	8.8	11	15	22	1007K	125	1764
2400-6	180KC	6	2	NO	2400-6	90	1.1	1.2	1.3	1.8	2.0	3.2	4.6	5.9	7.9	9.2	12	19	2014K	125	1852
2400-6	180KC	10	2	NO	2400-6	90	1.3	1.4	1.5	1.8	2.0	3.1	4.0	5.5	7.0	8.2	11	15	3942K	125	1767
2400-5	120KC	3	2	YES	2400-5	90	1.0	1.1	1.5	2.2	2.7	5.0	7.7	11	14	16	23	37	503K	125	1764
2400-5	120KC	4	2	YES	2400-5	90	1.1	1.2	1.3	2.0	2.2	3.8	5.8	7.6	11	12	18	26	1007K	125	1764
2400-5	120KC	6	2	YES	2400-5	90	1.2	1.3	1.4	1.9	2.1	3.4	5.1	6.4	8.7	11	14	22	2014K	125	1852
2400-5	120KC	10	2	YES	2400-5	90	1.3	1.4	1.6	1.9	2.0	3.2	4.7	5.8	7.4	9.1	12	19	3942K	125	1767
2400-6	180KC	3	2	YES	2400-6	90	1.0	1.1	1.4	1.8	2.2	3.7	5.6	7.4	9.6	12	17	26	503K	125	1764
2400-6	180KC	4	2	YES	2400-6	90	1.1	1.1	1.2	1.7	1.9	3.0	4.4	5.6	7.3	8.5	13	18	1007K	125	1764
2400-6	180KC	6	2	YES	2400-6	90	1.1	1.2	1.3	1.7	1.8	2.7	3.9	4.8	6.3	7.4	9.4	16	2014K	125	1852
2400-6	180KC	10	2	YES	2400-6	90	1.3	1.4	1.5	1.7	1.8	2.6	3.7	4.5	5.6	6.7	8.5	14	3942K	125	1767

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.2	2.1	3.5	7.8	9.5	23	37	48	65	78	120	CE	201K	50	808
2400-5	120KC	4	1	NO	2400-5	35	1.3	1.8	3.0	5.7	7.8	17	25	36	45	54	78	150	402K	50	807
2400-5	120KC	6	1	NO	2400-5	35	1.4	1.7	2.7	5.0	6.0	13	21	28	38	45	66	120	805K	50	807
2400-5	120KC	10	1	NO	2400-5	35	1.6	1.9	2.5	4.5	5.2	11	18	24	33	39	52	93	1611K	50	806
2400-6	180KC	3	1	NO	2400-6	35	1.1	1.7	2.7	5.7	6.8	16	26	34	46	54	78	CE	201K	50	808
2400-6	180KC	4	1	NO	2400-6	35	1.2	1.6	2.4	4.3	5.7	12	17	25	31	38	54	97	402K	50	807
2400-6	180KC	6	1	NO	2400-6	35	1.3	1.5	2.2	3.8	4.5	9.1	15	20	26	31	46	77	805K	50	807
2400-6	180KC	10	1	NO	2400-6	35	1.5	1.7	2.2	3.5	4.1	7.9	13	17	23	28	36	65	1611K	50	806
2400-5	120KC	3	2	NO	2400-5	35	1.1	1.8	2.9	5.9	7.1	17	27	35	48	57	82	CE	201K	50	760
2400-5	120KC	4	2	NO	2400-5	35	1.2	1.6	2.5	4.4	6.0	13	18	26	33	43	57	110	402K	50	760
2400-5	120KC	6	2	NO	2400-5	35	1.3	1.6	2.3	4.0	4.9	11	16	21	26	34	48	71	805K	50	759
2400-5	120KC	10	2	NO	2400-5	35	1.4	1.7	2.3	3.8	4.4	8.6	14	18	22	26	35	61	1585K	50	763
2400-6	180KC	3	2	NO	2400-6	35	1.1	1.5	2.3	4.4	5.2	12	19	25	33	40	57	CE	201K	50	760
2400-6	180KC	4	2	NO	2400-6	35	1.1	1.5	2.1	3.4	4.4	8.7	13	19	23	30	39	70	402K	50	760
2400-6	180KC	6	2	NO	2400-6	35	1.2	1.4	2.0	3.2	3.7	7.7	12	15	19	24	34	49	805K	50	759
2400-6	180KC	10	2	NO	2400-6	35	1.4	1.6	2.0	3.0	3.4	6.4	9.8	13	16	18	25	42	1585K	50	763
2400-5	120KC	3	2	YES	2400-5	35	1.1	1.6	2.5	5.0	5.9	14	22	29	39	46	66	CE	201K	50	760
2400-5	120KC	4	2	YES	2400-5	35	1.2	1.5	2.2	3.8	5.0	10	15	22	27	35	46	82	402K	50	760
2400-5	120KC	6	2	YES	2400-5	35	1.3	1.5	2.1	3.4	4.0	8.4	13	18	23	27	39	65	805K	50	759
2400-5	120KC	10	2	YES	2400-5	35	1.4	1.7	2.0	3.2	3.6	6.9	11	15	20	24	35	55	1585K	50	763
2400-6	180KC	3	2	YES	2400-6	35	1.1	1.4	2.0	3.7	4.4	9.5	16	20	27	32	46	CE	201K	50	760
2400-6	180KC	4	2	YES	2400-6	35	1.1	1.4	1.9	2.9	3.8	7.2	11	15	19	24	32	57	402K	50	760
2400-6	180KC	6	2	YES	2400-6	35	1.2	1.4	1.8	2.7	3.2	6.3	8.9	13	16	19	27	45	805K	50	759
2400-6	180KC	10	2	YES	2400-6	35	1.4	1.6	1.8	2.6	2.9	5.2	8.0	11	14	17	24	39	1585K	50	763

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT	NUMBER CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	2.0	4.7	9.4	23	28	65	98	CE	CE	CE	CE	CE	80K	20	326
2400-5	120KC	4	1	NO	2400-5	20	1.8	3.5	7.1	17	21	44	73	110	150	190	CE	CE	161K	20	320
2400-5	120KC	6	1	NO	2400-5	20	1.7	3.1	5.9	13	17	37	55	89	120	140	190	310	322K	20	320
2400-5	120KC	10	1	NO	2400-5	20	1.9	2.8	5.2	11	15	33	48	74	96	120	160	230	644K	20	320
2400-6	180KC	3	1	NO	2400-6	20	1.7	3.5	6.8	16	20	45	68	CE	CE	CE	CE	CE	80K	20	326
2400-6	180KC	4	1	NO	2400-6	20	1.6	2.7	5.2	12	15	31	50	76	110	140	CE	CE	161K	20	320
2400-6	180KC	6	1	NO	2400-6	20	1.5	2.5	4.4	8.9	12	26	38	62	79	94	130	220	322K	20	320
2400-6	180KC	10	1	NO	2400-6	20	1.7	2.3	4.0	7.7	11	23	34	51	66	79	110	160	644K	20	320
2400-5	120KC	3	2	NO	2400-5	20	1.8	3.6	7.1	17	20	47	76	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	NO	2400-5	20	1.6	2.9	5.9	13	15	32	53	79	110	140	CE	CE	161K	20	301
2400-5	120KC	6	2	NO	2400-5	20	1.6	2.6	4.9	11	13	27	43	59	73	89	140	240	322K	20	315
2400-5	120KC	10	2	NO	2400-5	20	1.7	2.5	4.3	8.5	12	22	32	50	62	74	98	150	630K	20	302
2400-6	180KC	3	2	NO	2400-6	20	1.5	2.8	5.2	12	14	33	53	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	NO	2400-6	20	1.4	2.3	4.4	8.6	11	23	37	55	73	95	CE	CE	161K	20	301
2400-6	180KC	6	2	NO	2400-6	20	1.4	2.2	3.7	7.7	9.3	19	30	41	51	62	95	160	322K	20	315
2400-6	180KC	10	2	NO	2400-6	20	1.6	2.1	3.4	6.3	8.3	16	22	35	44	52	68	110	630K	20	302
2400-5	120KC	3	2	YES	2400-5	20	1.6	3.1	5.9	14	17	38	62	CE	CE	CE	CE	CE	80K	20	301
2400-5	120KC	4	2	YES	2400-5	20	1.5	2.6	5.0	9.9	13	26	43	64	86	120	CE	CE	161K	20	301
2400-5	120KC	6	2	YES	2400-5	20	1.5	2.3	4.1	8.5	11	22	34	52	67	80	110	190	322K	20	315
2400-5	120KC	10	2	YES	2400-5	20	1.7	2.2	3.6	6.8	9.3	20	29	44	57	68	91	140	630K	20	302
2400-6	180KC	3	2	YES	2400-6	20	1.4	2.5	4.4	9.4	12	27	43	CE	CE	CE	CE	CE	80K	20	301
2400-6	180KC	4	2	YES	2400-6	20	1.4	2.1	3.7	7.2	8.7	19	30	45	59	77	CE	CE	161K	20	301
2400-6	180KC	6	2	YES	2400-6	20	1.4	1.9	3.2	6.2	7.5	16	24	36	47	56	76	130	322K	20	315
2400-6	180KC	10	2	YES	2400-6	20	1.6	1.9	2.9	5.1	6.8	14	20	31	40	48	63	94	630K	20	302

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	350	1.0	1.0	1.1	1.2	1.3	1.9	2.7	3.7	4.4	5.1	7.4	12	2014K	500	12060
2400-5	120KC	4	1	NO	2400-5	350	1.0	1.1	1.2	1.3	1.4	1.7	2.4	2.8	3.8	4.3	6.1	8.7	4029K	500	12078
2400-5	120KC	6	1	NO	2400-5	350	1.1	1.2	1.3	1.4	1.5	1.8	2.2	2.5	3.3	3.8	4.6	7.5	8058K	500	12073
2400-5	120KC	10	1	NO	2400-5	350	1.3	1.4	1.4	1.6	1.7	2.0	2.3	2.7	3.0	3.4	4.1	6.5	16116K	500	12064
2400-6	180KC	3	1	NO	2400-6	350	1.0	1.0	1.1	1.2	1.2	1.7	2.3	3.0	3.5	4.0	5.6	8.9	2014K	500	12080
2400-6	180KC	4	1	NO	2400-6	350	1.0	1.1	1.1	1.2	1.3	1.5	2.0	2.4	3.1	3.5	4.8	6.7	4029K	500	12078
2400-6	180KC	6	1	NO	2400-6	350	1.1	1.2	1.2	1.3	1.4	1.6	1.9	2.2	2.8	3.1	3.8	5.8	8058K	500	12073
2400-6	180KC	10	1	NO	2400-6	350	1.3	1.3	1.4	1.5	1.6	1.8	2.1	2.4	2.6	2.9	3.4	5.3	16116K	500	12064
2400-5	120KC	3	2	NO	2400-5	350	1.0	1.0	1.1	1.2	1.2	1.6	2.2	2.9	3.4	3.9	5.5	8.7	2014K	500	11754
2400-5	120KC	4	2	NO	2400-5	350	1.0	1.1	1.1	1.2	1.2	1.5	2.0	2.3	3.0	3.3	4.6	6.4	4029K	500	11752
2400-5	120KC	6	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.6	1.9	2.1	2.7	3.1	3.7	5.8	8058K	500	11747
2400-5	120KC	10	2	NO	2400-5	350	1.3	1.3	1.4	1.5	1.5	1.7	2.0	2.2	2.6	2.9	3.4	5.2	16116K	500	11738
2400-6	180KC	3	2	NO	2400-6	350	1.0	1.0	1.0	1.1	1.1	1.5	1.9	2.4	2.8	3.1	4.3	6.6	2014K	500	11754
2400-6	180KC	4	2	NO	2400-6	350	1.0	1.0	1.1	1.2	1.2	1.4	1.8	2.0	2.5	2.8	3.7	5.1	4029K	500	11752
2400-6	180KC	6	2	NO	2400-6	350	1.1	1.1	1.2	1.2	1.3	1.5	1.7	1.9	2.4	2.6	3.1	4.7	8058K	500	11747
2400-6	180KC	10	2	NO	2400-6	350	1.3	1.3	1.3	1.4	1.5	1.6	1.8	2.0	2.3	2.5	2.9	4.3	16116K	500	11738
2400-5	120KC	3	2	YES	2400-5	350	1.0	1.0	1.0	1.1	1.2	1.5	2.0	2.5	2.9	3.3	4.5	7.1	2014K	500	11754
2400-5	120KC	4	2	YES	2400-5	350	1.0	1.1	1.1	1.2	1.2	1.4	1.8	2.0	2.6	2.8	3.9	5.3	4029K	500	11752
2400-5	120KC	6	2	YES	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.5	1.7	1.9	2.3	2.6	3.1	4.6	8058K	500	11747
2400-5	120KC	10	2	YES	2400-5	350	1.3	1.3	1.4	1.5	1.5	1.7	1.9	2.1	2.3	2.4	2.8	4.2	16116K	500	11738
2400-6	180KC	3	2	YES	2400-6	350	1.0	1.0	1.0	1.1	1.1	1.4	1.7	2.1	2.4	2.7	3.6	5.5	2014K	500	11754
2400-6	180KC	4	2	YES	2400-6	350	1.0	1.0	1.1	1.1	1.2	1.3	1.6	1.8	2.2	2.4	3.2	4.2	4029K	500	11752
2400-6	180KC	6	2	YES	2400-6	350	1.1	1.1	1.2	1.2	1.3	1.4	1.6	1.7	2.1	2.3	2.7	3.8	8058K	500	11747
2400-6	180KC	10	2	YES	2400-6	350	1.3	1.3	1.3	1.4	1.5	1.6	1.8	1.9	2.1	2.2	2.5	3.6	16116K	500	11738

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	90	1.1	1.2	1.5	2.4	3.1	6.1	10	15	19	25	32	53	503K	125	4080
2400-5	120KC	4	1	NO	2400-5	90	1.1	1.3	1.5	2.0	2.7	5.1	8.2	11	15	18	23	39	1007K	125	4080
2400-5	120KC	6	1	NO	2400-5	90	1.2	1.4	1.6	2.1	2.4	4.3	7.0	8.9	11	15	20	33	2014K	125	4078
2400-5	120KC	10	1	NO	2400-5	90	1.4	1.6	1.8	2.3	2.6	3.8	6.1	7.7	9.3	13	17	29	4029K	125	4075
2400-6	180KC	3	1	NO	2400-6	90	1.0	1.1	1.3	2.0	2.5	4.5	7.2	11	13	17	23	37	503K	125	4080
2400-6	180KC	4	1	NO	2400-6	90	1.1	1.2	1.4	1.7	2.2	3.8	6.0	7.6	11	13	17	27	1007K	125	4080
2400-6	180KC	6	1	NO	2400-6	90	1.2	1.3	1.5	1.8	2.0	3.4	5.2	6.6	7.9	11	14	23	2014K	125	4078
2400-6	180KC	10	1	NO	2400-6	90	1.4	1.5	1.7	2.0	2.2	3.1	4.7	5.8	6.9	9.4	12	20	4029K	125	4075
2400-5	120KC	3	2	NO	2400-5	90	1.0	1.1	1.3	2.2	2.5	4.7	7.4	11	14	18	24	38	503K	125	3970
2400-5	120KC	4	2	NO	2400-5	90	1.1	1.2	1.4	1.7	2.2	3.9	6.2	7.8	11	13	17	28	1007K	125	3969
2400-5	120KC	6	2	NO	2400-5	90	1.2	1.3	1.5	1.8	2.1	3.5	5.5	7.0	8.4	11	15	25	2014K	125	3968
2400-5	120KC	10	2	NO	2400-5	90	1.3	1.4	1.6	2.0	2.2	3.2	5.0	6.2	7.4	8.8	12	21	4029K	125	3965
2400-6	180KC	3	2	NO	2400-6	90	1.0	1.1	1.2	1.9	2.1	3.5	5.4	7.8	9.5	13	17	27	503K	125	3970
2400-6	180KC	4	2	NO	2400-6	90	1.1	1.1	1.3	1.5	1.9	3.1	4.6	5.8	7.9	9.2	12	20	1007K	125	3969
2400-6	180KC	6	2	NO	2400-6	90	1.1	1.2	1.3	1.6	1.8	2.8	4.2	5.2	6.2	7.9	11	18	2014K	125	3968
2400-6	180KC	10	2	NO	2400-6	90	1.3	1.4	1.5	1.8	1.9	2.6	3.9	4.7	5.6	6.5	8.3	15	4029K	125	3965
2400-5	120KC	3	2	YES	2400-5	90	1.0	1.1	1.3	2.0	2.2	3.9	6.2	8.9	11	15	19	31	503K	125	3970
2400-5	120KC	4	2	YES	2400-5	90	1.1	1.2	1.3	1.6	2.0	3.4	5.1	6.5	9.0	11	14	23	1007K	125	3969
2400-5	120KC	6	2	YES	2400-5	90	1.2	1.3	1.4	1.7	1.8	3.0	4.5	5.6	6.8	9.0	12	20	2014K	125	3968
2400-5	120KC	10	2	YES	2400-5	90	1.3	1.4	1.6	1.9	2.0	2.8	4.1	5.0	5.9	8.0	11	17	4029K	125	3965
2400-6	180KC	3	2	YES	2400-6	90	1.0	1.1	1.2	1.7	1.9	3.0	4.6	6.4	7.8	11	14	22	503K	125	3970
2400-6	180KC	4	2	YES	2400-6	90	1.1	1.1	1.2	1.4	1.7	2.7	3.9	4.8	6.5	7.6	9.8	16	1007K	125	3969
2400-6	180KC	6	2	YES	2400-6	90	1.1	1.2	1.3	1.5	1.6	2.4	3.5	4.3	5.0	6.6	8.4	14	2014K	125	3968
2400-6	180KC	10	2	YES	2400-6	90	1.3	1.4	1.5	1.7	1.8	2.3	3.3	3.9	4.5	6.0	7.5	12	4029K	125	3965

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	35	1.2	1.6	3.1	6.0	8.4	18	30	44	55	65	95	CE	201K	50	1757
2400-5	120KC	4	1	NO	2400-5	35	1.3	1.6	2.6	5.0	6.0	13	22	32	40	48	71	130	402K	50	1757
2400-5	120KC	6	1	NO	2400-5	35	1.4	1.7	2.4	4.3	5.1	11	18	24	34	40	53	93	805K	50	1756
2400-5	120KC	10	1	NO	2400-5	35	1.6	1.9	2.5	3.8	4.4	9.1	16	21	29	35	46	75	1611K	50	1755
2400-6	180KC	3	1	NO	2400-6	35	1.1	1.4	2.4	4.5	6.1	13	21	31	38	45	66	CE	201K	50	1757
2400-6	180KC	4	1	NO	2400-6	35	1.2	1.4	2.2	3.8	4.5	9.1	16	23	28	33	49	85	402K	50	1757
2400-6	180KC	6	1	NO	2400-6	35	1.3	1.5	2.0	3.3	3.9	7.8	13	17	24	28	37	64	805K	50	1756
2400-6	180KC	10	1	NO	2400-6	35	1.5	1.7	2.2	3.0	3.4	6.7	12	15	21	25	32	52	1611K	50	1755
2400-5	120KC	3	2	NO	2400-5	35	1.1	1.4	2.5	4.6	6.3	14	22	32	40	47	69	CE	201K	50	1710
2400-5	120KC	4	2	NO	2400-5	35	1.2	1.5	2.2	3.9	4.6	9.5	16	24	29	35	51	89	402K	50	1709
2400-5	120KC	6	2	NO	2400-5	35	1.3	1.5	2.0	3.5	4.1	8.3	14	18	26	30	40	70	805K	50	1709
2400-5	120KC	10	2	NO	2400-5	35	1.4	1.7	2.2	3.2	3.7	7.3	11	16	22	26	34	50	1611K	50	1707
2400-6	180KC	3	2	NO	2400-6	35	1.1	1.3	2.0	3.5	4.7	9.4	16	23	28	33	48	CE	201K	50	1710
2400-6	180KC	4	2	NO	2400-6	35	1.1	1.3	1.8	3.0	3.5	6.9	12	17	21	24	36	61	402K	50	1709
2400-6	180KC	6	2	NO	2400-6	35	1.2	1.4	1.7	2.8	3.2	6.1	9.5	13	18	21	28	49	805K	50	1709
2400-6	180KC	10	2	NO	2400-6	35	1.4	1.6	1.9	2.6	2.9	5.5	7.8	12	16	18	24	35	1611K	50	1707
2400-5	120KC	3	2	YES	2400-5	35	1.1	1.3	2.2	3.9	5.3	11	18	26	32	38	56	CE	201K	50	1710
2400-5	120KC	4	2	YES	2400-5	35	1.2	1.4	2.0	3.4	3.9	7.8	13	19	24	28	42	72	402K	50	1709
2400-5	120KC	6	2	YES	2400-5	35	1.3	1.5	1.8	3.0	3.4	6.7	11	15	20	24	31	55	805K	50	1709
2400-5	120KC	10	2	YES	2400-5	35	1.4	1.7	2.0	2.7	3.1	5.9	9.6	13	18	21	27	44	1611K	50	1707
2400-6	180KC	3	2	YES	2400-6	35	1.1	1.2	1.8	3.0	4.0	7.8	13	18	23	27	39	CE	201K	50	1710
2400-6	180KC	4	2	YES	2400-6	35	1.1	1.3	1.7	2.7	3.0	5.7	9.2	14	17	20	29	50	402K	50	1709
2400-6	180KC	6	2	YES	2400-6	35	1.2	1.4	1.6	2.4	2.7	5.0	7.9	11	14	17	22	38	805K	50	1709
2400-6	180KC	10	2	YES	2400-6	35	1.4	1.6	1.8	2.3	2.6	4.5	7.0	8.9	13	15	19	31	1611K	50	1707

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2400-5	120KC	3	1	NO	2400-5	20	1.6	3.6	8.3	18	25	54	89	CE	CE	CE	CE	CE	80K	20	712
2400-5	120KC	4	1	NO	2400-5	20	1.6	3.0	5.9	13	18	40	66	95	130	170	CE	CE	161K	20	712
2400-5	120KC	6	1	NO	2400-5	20	1.7	2.6	5.0	11	15	33	49	77	96	120	170	280	322K	20	712
2400-5	120KC	10	1	NO	2400-5	20	1.9	2.8	4.3	9.0	12	29	42	62	77	92	130	210	621K	20	711
2400-6	180KC	3	1	NO	2400-6	20	1.4	2.8	6.0	13	18	38	61	CE	CE	CE	CE	CE	80K	20	712
2400-6	180KC	4	1	NO	2400-6	20	1.4	2.4	4.4	9.0	13	28	45	65	88	120	CE	CE	161K	20	712
2400-6	180KC	6	1	NO	2400-6	20	1.5	2.2	3.8	7.6	11	23	34	53	66	79	120	200	322K	20	712
2400-6	180KC	10	1	NO	2400-6	20	1.7	2.3	3.4	6.6	8.6	20	30	43	53	64	87	150	621K	20	711
2400-5	120KC	3	2	NO	2400-5	20	1.4	2.9	6.3	14	18	39	64	CE	CE	CE	CE	CE	80K	20	693
2400-5	120KC	4	2	NO	2400-5	20	1.4	2.5	4.6	9.4	14	29	48	69	92	130	CE	CE	161K	20	693
2400-5	120KC	6	2	NO	2400-5	20	1.5	2.2	4.0	8.2	12	25	37	50	72	86	130	210	322K	20	692
2400-5	120KC	10	2	NO	2400-5	20	1.7	2.4	3.6	7.2	9.0	22	31	41	51	61	98	150	644K	20	692
2400-6	180KC	3	2	NO	2400-6	20	1.3	2.3	4.6	9.3	13	27	45	CE	CE	CE	CE	CE	80K	20	693
2400-6	180KC	4	2	NO	2400-6	20	1.3	2.0	3.5	6.8	9.3	20	33	47	64	84	CE	CE	161K	20	693
2400-6	180KC	6	2	NO	2400-6	20	1.4	1.9	3.1	6.0	8.1	18	26	35	50	60	86	140	322K	20	692
2400-6	180KC	10	2	NO	2400-6	20	1.6	2.0	2.9	5.4	6.6	15	22	29	36	42	68	110	644K	20	692
2400-5	120KC	3	2	YES	2400-5	20	1.3	2.5	5.2	11	15	32	52	CE	CE	CE	CE	CE	80K	20	693
2400-5	120KC	4	2	YES	2400-5	20	1.4	2.2	3.9	7.8	11	24	39	56	75	98	CE	CE	161K	20	693
2400-5	120KC	6	2	YES	2400-5	20	1.5	2.0	3.4	6.6	9.2	20	29	45	56	67	99	170	322K	20	692
2400-5	120KC	10	2	YES	2400-5	20	1.7	2.2	3.1	5.8	8.1	18	25	37	46	54	78	130	644K	20	692
2400-6	180KC	3	2	YES	2400-6	20	1.2	2.0	3.9	7.7	11	22	36	CE	CE	CE	CE	CE	80K	20	693
2400-6	180KC	4	2	YES	2400-6	20	1.3	1.8	3.0	5.7	7.7	17	27	39	52	68	CE	CE	161K	20	693
2400-6	180KC	6	2	YES	2400-6	20	1.4	1.7	2.7	4.9	6.7	14	20	32	39	47	69	120	322K	20	692
2400-6	180KC	10	2	YES	2400-6	20	1.6	1.9	2.5	4.4	6.0	13	18	26	32	38	56	87	644K	20	692

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	350	1.6	2.1	3.1	5.4	6.6	13	20	27	35	41	56	88	2912K	364	622
2314	312KC	4	1	NO	2314	350	1.6	2.0	2.8	4.2	5.0	9.6	14	20	24	30	40	62	4224K	176	624
2314	312KC	6	1	NO	2314	350	1.8	2.1	2.9	4.1	4.8	8.7	13	17	21	25	36	55	7040K	176	726
2314	312KC	8	1	NO	2314	350	2.0	2.3	3.1	4.3	4.9	8.0	13	16	20	24	32	47	9576K	114	679
2314	312KC	3	1	NO	2400-3	350	1.6	2.1	3.2	5.5	6.7	14	20	27	35	42	57	89	2912K	364	622
2314	312KC	4	1	NO	2400-3	350	1.6	2.1	2.8	4.3	5.0	9.7	15	20	25	30	40	63	4224K	176	624
2314	312KC	6	1	NO	2400-3	350	1.8	2.1	2.9	4.2	4.9	9.0	14	18	22	26	36	56	7040K	176	726
2314	312KC	8	1	NO	2400-3	350	2.0	2.3	3.1	4.3	5.0	8.0	13	16	21	24	32	48	9576K	114	679

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	85	1.8	2.9	4.7	8.7	12	23	34	47	60	72	100	160	728K	91	212
2314	312KC	4	1	NO	2314	85	1.8	2.4	3.8	6.4	7.8	16	24	33	41	50	67	110	1056K	44	212
2314	312KC	6	1	NO	2314	85	2.0	2.5	3.6	5.6	6.7	13	19	26	33	39	52	82	1760K	44	208
2314	312KC	8	1	NO	2314	85	2.1	2.8	3.7	5.5	7.1	13	19	25	31	39	53	82	2352K	28	232
2314	312KC	3	1	NO	2400-3	85	1.9	3.0	4.9	9.1	12	24	35	49	62	74	110	160	728K	91	212
2314	312KC	4	1	NO	2400-3	85	1.8	2.5	3.9	6.6	8.0	17	24	33	42	51	69	110	1056K	44	212
2314	312KC	6	1	NO	2400-3	85	2.0	2.5	3.6	5.8	6.9	14	20	27	34	40	54	84	1760K	44	208
2314	312KC	8	1	NO	2400-3	85	2.1	2.8	3.7	5.6	7.3	14	20	26	32	40	54	84	2352K	28	232

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	35	2.5	4.7	8.3	17	20	41	66	87	120	140	190	CE	288K	36	90
2314	312KC	4	1	NO	2314	35	2.1	3.5	5.9	12	14	29	44	59	77	92	130	200	408K	17	91
2314	312KC	6	1	NO	2314	35	2.2	3.2	4.9	8.5	12	22	33	44	58	70	96	150	680K	17	89
2314	312KC	8	1	NO	2314	35	2.5	3.4	5.5	9.4	12	22	35	47	60	73	98	150	924K	11	98
2314	312KC	3	1	NO	2400-3	35	2.6	4.9	8.8	17	21	44	69	92	120	150	200	CE	288K	36	90
2314	312KC	4	1	NO	2400-3	35	2.2	3.6	6.0	12	15	30	45	60	79	95	140	200	408K	17	91
2314	312KC	6	1	NO	2400-3	35	2.2	3.3	5.1	8.9	12	23	35	46	60	73	100	160	680K	17	89
2314	312KC	8	1	NO	2400-3	35	2.5	3.5	5.6	9.7	12	23	36	49	62	75	110	160	924K	11	98

SYSTEM/360 MODEL 30

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	14	4.2	8.6	17	35	44	94	150	200	CE	CE	CE	CE	112K	14	37
2314	312KC	4	1	NO	2314	14	3.1	6.2	12	24	30	63	97	140	170	210	CE	CE	168K	7	36
2314	312KC	6	1	NO	2314	14	2.9	5.0	9.2	18	23	47	73	97	130	150	210	CE	280K	7	35
2314	312KC	8	1	NO	2314	14	3.2	5.7	11	20	25	53	81	110	140	170	230	360	336K	4	40
2314	312KC	3	1	NO	2400-3	14	4.4	9.2	18	37	47	100	160	220	CE	CE	CE	CE	112K	14	37
2314	312KC	4	1	NO	2400-3	14	3.3	6.5	13	25	32	66	110	140	180	220	CE	CE	168K	7	36
2314	312KC	6	1	NO	2400-3	14	3.0	5.3	9.8	19	24	50	77	110	140	160	220	CE	280K	7	35
2314	312KC	8	1	NO	2400-3	14	3.2	5.9	11	20	26	54	83	120	140	170	240	370	336K	4	40

SYSTEM/360 MODEL 40

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	350	1.3	1.5	2.2	3.5	4.2	7.6	12	15	20	23	31	48	2912K	364	622
2314	312KC	4	1	NO	2314	350	1.3	1.5	1.9	2.7	3.1	5.6	7.9	11	14	17	22	34	4224K	176	624
2314	312KC	6	1	NO	2314	350	1.4	1.6	2.1	2.7	3.1	5.2	7.4	9.6	12	14	20	31	7040K	176	726
2314	312KC	8	1	NO	2314	350	1.6	1.7	2.2	2.8	3.2	4.8	7.1	8.9	12	13	18	26	9576K	114	679
2314	312KC	3	1	NO	2400-3	350	1.3	1.6	2.2	3.6	4.3	7.9	12	16	20	24	32	50	2912K	364	622
2314	312KC	4	1	NO	2400-3	350	1.3	1.5	2.0	2.7	3.2	5.7	8.1	11	14	17	22	34	4224K	176	624
2314	312KC	6	1	NO	2400-3	350	1.5	1.6	2.1	2.8	3.2	5.5	7.8	11	13	15	21	32	7040K	176	726
2314	312KC	8	1	NO	2400-3	350	1.6	1.7	2.2	2.9	3.2	4.8	7.2	9.0	12	14	18	26	9576K	114	679

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MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	85	1.5	2.2	3.5	6.2	7.9	16	23	32	41	48	67	110	728K	91	212
2314	312KC	4	1	NO	2314	85	1.4	1.8	2.8	4.4	5.3	11	15	21	26	32	43	67	1056K	44	212
2314	312KC	6	1	NO	2314	85	1.6	1.9	2.6	3.9	4.5	8.3	13	17	21	25	33	51	1760K	44	208
2314	312KC	8	1	NO	2314	85	1.6	2.1	2.7	3.8	4.8	8.4	13	16	20	25	34	52	2352K	28	232
2314	312KC	3	1	NO	2400-3	85	1.5	2.3	3.7	6.6	8.3	17	25	34	43	51	71	110	728K	91	212
2314	312KC	4	1	NO	2400-3	85	1.5	1.9	2.8	4.6	5.5	11	16	22	27	33	44	69	1056K	44	212
2314	312KC	6	1	NO	2400-3	85	1.6	1.9	2.7	4.0	4.7	8.7	13	18	22	26	34	54	1760K	44	208
2314	312KC	8	1	NO	2400-3	85	1.7	2.1	2.7	3.9	5.0	8.7	13	17	21	26	35	54	2352K	28	232

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MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	35	2.1	3.8	6.6	13	16	32	50	67	85	110	150	CE	288K	36	90
2314	312KC	4	1	NO	2314	35	1.7	2.7	4.4	8.3	10	21	31	41	54	65	89	140	408K	17	91
2314	312KC	6	1	NO	2314	35	1.8	2.5	3.7	6.2	8.0	16	24	31	41	49	67	110	680K	17	89
2314	312KC	8	1	NO	2314	35	2.0	2.6	4.1	6.8	8.3	16	25	33	43	51	69	110	924K	11	98
2314	312KC	3	1	NO	2400-3	35	2.1	4.0	7.0	14	17	34	54	71	91	120	160	CE	288K	36	90
2314	312KC	4	1	NO	2400-3	35	1.8	2.9	4.7	8.9	11	22	33	45	58	70	96	150	408K	17	91
2314	312KC	6	1	NO	2400-3	35	1.8	2.6	4.0	6.8	8.7	17	26	34	45	54	74	120	680K	17	89
2314	312KC	8	1	NO	2400-3	35	2.0	2.7	4.3	7.3	8.9	17	26	36	45	55	73	120	924K	11	98

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MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	14	3.6	7.2	14	29	37	77	120	170	CE	CE	CE	CE	112K	14	37
2314	312KC	4	1	NO	2314	14	2.6	5.0	9.1	19	24	49	76	110	130	160	CE	CE	168K	7	36
2314	312KC	6	1	NO	2314	14	2.3	4.0	7.2	14	18	36	56	75	95	120	160	CE	280K	7	35
2314	312KC	8	1	NO	2314	14	2.5	4.5	8.0	15	20	41	62	84	110	130	180	280	336K	4	40
2314	312KC	3	1	NO	2400-3	14	3.8	7.8	15	31	39	83	130	180	CE	CE	CE	CE	112K	14	37
2314	312KC	4	1	NO	2400-3	14	2.8	5.5	10	21	26	54	83	120	140	180	CE	CE	168K	7	36
2314	312KC	6	1	NO	2400-3	14	2.5	4.4	8.1	16	20	41	63	85	110	130	180	CE	280K	7	35
2314	312KC	8	1	NO	2400-3	14	2.7	4.8	8.7	17	21	44	67	90	120	140	200	300	336K	4	40

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MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	350	1.2	1.4	1.7	2.6	2.9	5.4	8.1	11	14	17	23	35	2912K	364	2211
2314	312KC	4	1	NO	2314	350	1.3	1.4	1.7	2.4	2.7	4.5	6.5	8.9	11	13	18	28	4368K	364	2205
2314	312KC	6	1	NO	2314	350	1.4	1.6	1.8	2.6	2.9	4.3	5.8	8.0	9.7	12	16	23	7280K	364	2192
2314	312KC	8	1	NO	2314	350	1.6	1.7	2.0	2.4	2.7	4.5	6.0	7.6	9.1	11	15	22	10192K	364	2179
2314	312KC	3	1	NO	2400-3	350	1.2	1.4	1.8	2.6	3.0	5.5	8.2	11	15	17	23	36	2912K	364	2211
2314	312KC	4	1	NO	2400-3	350	1.3	1.5	1.7	2.4	2.7	4.6	6.7	9.1	12	14	18	29	4368K	364	2205
2314	312KC	6	1	NO	2400-3	350	1.4	1.6	1.8	2.6	2.9	4.5	6.0	8.3	10	12	16	24	7280K	364	2192
2314	312KC	8	1	NO	2400-3	350	1.6	1.7	2.0	2.5	2.7	4.7	6.2	7.8	9.4	11	16	23	10192K	364	2179

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MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	85	1.3	1.7	2.5	4.3	5.1	9.8	16	21	26	33	43	69	728K	91	749
2314	312KC	4	1	NO	2314	85	1.3	1.7	2.1	3.4	3.9	7.5	11	16	20	23	32	50	1092K	91	747
2314	312KC	6	1	NO	2314	85	1.5	1.7	2.3	3.2	3.6	6.5	9.3	13	16	18	26	39	1820K	91	743
2314	312KC	8	1	NO	2314	85	1.6	1.8	2.4	3.3	3.8	6.0	9.2	12	15	18	24	35	2548K	91	738
2314	312KC	3	1	NO	2400-3	85	1.3	1.7	2.6	4.5	5.3	11	17	22	27	34	45	72	728K	91	749
2314	312KC	4	1	NO	2400-3	85	1.4	1.7	2.2	3.6	4.2	8.0	12	17	21	25	34	53	1092K	91	747
2314	312KC	6	1	NO	2400-3	85	1.5	1.7	2.4	3.4	3.8	7.0	11	14	17	20	28	42	1820K	91	743
2314	312KC	8	1	NO	2400-3	85	1.6	1.9	2.5	3.5	4.0	6.5	10	13	17	19	26	38	2548K	91	738

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	35	1.5	2.4	4.1	7.6	9.5	20	30	41	53	64	88	CE	288K	36	321
2314	312KC	4	1	NO	2314	35	1.5	2.1	3.1	5.7	7.0	14	22	29	38	45	61	95	432K	36	320
2314	312KC	6	1	NO	2314	35	1.6	2.1	2.9	4.9	5.7	11	17	23	29	35	47	71	720K	36	319
2314	312KC	8	1	NO	2314	35	1.7	2.3	3.0	4.5	5.3	11	16	21	26	31	42	66	1008K	36	317
2314	312KC	3	1	NO	2400-3	35	1.6	2.6	4.5	8.4	11	22	33	45	58	70	96	CE	288K	36	321
2314	312KC	4	1	NO	2400-3	35	1.6	2.3	3.5	6.5	8.0	16	25	33	42	51	68	110	432K	36	320
2314	312KC	6	1	NO	2400-3	35	1.6	2.3	3.3	5.6	6.7	13	20	27	33	41	55	82	720K	36	319
2314	312KC	8	1	NO	2400-3	35	1.8	2.5	3.4	5.3	6.2	13	18	25	30	36	50	77	1008K	36	317

SYSTEM/360 MODEL 40

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	14	2.3	4.5	8.5	18	21	45	70	96	CE	CE	CE	CE	112K	14	132
2314	312KC	4	1	NO	2314	14	2.0	3.3	6.2	13	15	31	49	67	85	110	CE	CE	168K	14	132
2314	312KC	6	1	NO	2314	14	2.0	2.9	5.0	9.2	12	24	37	50	63	78	110	CE	280K	14	131
2314	312KC	8	1	NO	2314	14	2.1	3.1	4.6	8.7	11	21	32	45	57	69	94	150	392K	14	131
2314	312KC	3	1	NO	2400-3	14	2.5	5.1	9.6	20	24	50	79	110	CE	CE	CE	CE	112K	14	132
2314	312KC	4	1	NO	2400-3	14	2.2	3.8	7.3	15	18	36	57	78	99	120	CE	CE	168K	14	132
2314	312KC	6	1	NO	2400-3	14	2.2	3.5	6.1	12	15	30	45	61	77	95	130	CE	280K	14	131
2314	312KC	8	1	NO	2400-3	14	2.4	3.6	5.7	11	14	27	40	56	71	86	120	180	392K	14	131

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MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	350	1.2	1.4	1.6	2.3	2.6	4.7	7.0	9.4	12	15	20	32	2912K	364	5472
2314	312KC	4	1	NO	2314	350	1.3	1.4	1.7	2.2	2.4	4.2	5.7	7.9	9.5	12	16	25	4368K	364	5466
2314	312KC	6	1	NO	2314	350	1.4	1.6	1.8	2.3	2.5	4.4	5.9	7.4	8.9	11	14	22	7280K	364	5453
2314	312KC	8	1	NO	2314	350	1.6	1.7	2.0	2.4	2.7	3.9	6.1	7.7	9.2	11	14	20	10192K	364	5440
2314	312KC	3	1	NO	2400-3	350	1.2	1.4	1.6	2.4	2.7	4.8	7.2	9.7	12	15	21	32	2912K	364	5472
2314	312KC	4	1	NO	2400-3	350	1.3	1.5	1.7	2.2	2.4	4.3	5.8	8.1	9.8	12	16	26	4368K	364	5466
2314	312KC	6	1	NO	2400-3	350	1.4	1.6	1.9	2.4	2.6	4.5	6.1	7.7	9.2	11	14	23	7280K	364	5453
2314	312KC	8	1	NO	2400-3	350	1.6	1.7	2.0	2.5	2.8	4.0	6.3	7.9	9.5	12	15	21	10192K	364	5440

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MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	85	1.3	1.5	2.0	3.4	4.3	8.5	13	18	22	28	39	59	728K	91	1852
2314	312KC	4	1	NO	2314	85	1.3	1.5	2.1	3.0	3.4	6.6	9.5	14	17	21	28	44	1092K	91	1850
2314	312KC	6	1	NO	2314	85	1.5	1.7	2.0	3.2	3.6	5.9	8.1	12	15	18	23	35	1820K	91	1846
2314	312KC	8	1	NO	2314	85	1.6	1.8	2.2	2.8	3.8	6.1	8.3	11	13	16	23	33	2548K	91	1841
2314	312KC	3	1	NO	2400-3	85	1.3	1.5	2.1	3.6	4.6	9.0	14	19	24	29	41	63	728K	91	1852
2314	312KC	4	1	NO	2400-3	85	1.4	1.6	2.2	3.2	3.7	7.1	11	15	18	22	30	47	1092K	91	1850
2314	312KC	6	1	NO	2400-3	85	1.5	1.7	2.1	3.4	3.9	6.4	8.8	13	16	19	25	38	1820K	91	1846
2314	312KC	8	1	NO	2400-3	85	1.6	1.9	2.3	3.0	4.0	6.6	9.1	12	15	17	25	36	2548K	91	1841

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	35	1.4	2.1	3.4	6.5	7.8	17	25	35	46	54	76	CE	288K	36	796
2314	312KC	4	1	NO	2314	35	1.4	2.0	2.7	4.9	5.8	12	19	25	33	40	54	83	432K	36	795
2314	312KC	6	1	NO	2314	35	1.6	1.9	2.9	4.4	5.1	10	15	20	25	30	43	66	720K	36	793
2314	312KC	8	1	NO	2314	35	1.7	2.0	3.0	4.5	5.3	9.1	15	19	24	29	39	58	1008K	36	791
2314	312KC	3	1	NO	2400-3	35	1.4	2.3	3.8	7.3	8.8	19	28	39	50	60	84	CE	288K	36	796
2314	312KC	4	1	NO	2400-3	35	1.5	2.2	3.1	5.7	6.8	14	22	29	38	46	62	94	432K	36	795
2314	312KC	6	1	NO	2400-3	35	1.6	2.1	3.3	5.1	6.1	12	18	24	30	36	50	77	720K	36	793
2314	312KC	8	1	NO	2400-3	35	1.8	2.2	3.4	5.3	6.2	11	18	23	28	35	47	70	1008K	36	791

SYSTEM/360 MODEL 40

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	3	1	NO	2314	14	1.9	3.6	6.9	15	19	40	63	86	CE	CE	CE	CE	112K	14	328
2314	312KC	4	1	NO	2314	14	1.8	3.1	5.1	11	14	28	44	59	74	94	CE	CE	168K	14	328
2314	312KC	6	1	NO	2314	14	1.8	2.9	4.4	8.5	11	21	34	46	57	71	96	CE	280K	14	327
2314	312KC	8	1	NO	2314	14	1.9	3.1	4.6	7.6	9.2	20	30	40	50	61	81	140	392K	14	326
2314	312KC	3	1	NO	2400-3	14	2.1	4.2	8.1	17	22	46	71	98	CE	CE	CE	CE	112K	14	328
2314	312KC	4	1	NO	2400-3	14	2.1	3.6	6.2	13	16	34	52	71	88	120	CE	CE	168K	14	328
2314	312KC	6	1	NO	2400-3	14	2.0	3.5	5.6	11	14	27	42	57	71	88	120	CE	280K	14	327
2314	312KC	8	1	NO	2400-3	14	2.1	3.6	5.7	9.9	12	25	38	51	64	77	110	170	392K	14	326

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.3	1.5	1.9	2.1	3.4	4.6	6.1	7.4	8.8	12	18	4224K	176	624
2314	312KC	6	1	NO	2314	350	1.3	1.3	1.6	1.9	2.1	3.3	4.5	5.7	6.9	8.0	12	17	7040K	176	726
2314	312KC	8	1	NO	2314	350	1.4	1.4	1.7	2.0	2.2	3.0	4.2	5.1	6.3	7.3	9.4	14	9576K	114	679
2314	312KC	16	1	NO	2314	350	1.8	1.9	2.0	2.7	2.9	3.9	5.0	6.0	7.0	8.1	11	17	19440K	54	684
2314	312KC	4	1	NO	2400-3	350	1.1	1.3	1.5	1.9	2.1	3.5	4.8	6.3	7.6	9.1	12	19	4224K	176	624
2314	312KC	6	1	NO	2400-3	350	1.3	1.4	1.6	2.0	2.2	3.5	4.8	6.1	7.4	8.7	12	19	7040K	176	726
2314	312KC	8	1	NO	2400-3	350	1.4	1.4	1.7	2.0	2.2	3.1	4.3	5.3	6.5	7.5	9.7	15	9576K	114	679
2314	312KC	16	1	NO	2400-3	350	1.8	1.9	2.0	2.7	2.9	3.9	5.0	6.1	7.1	8.2	11	17	19440K	54	684
2314	312KC	4	2	NO	2314	350	1.1	1.3	1.5	1.9	2.1	3.4	4.6	6.1	7.4	8.8	12	18	4224K	176	624
2314	312KC	6	2	NO	2314	350	1.3	1.3	1.6	1.9	2.1	3.3	4.5	5.7	6.9	8.0	12	17	7040K	176	726
2314	312KC	8	2	NO	2314	350	1.4	1.4	1.7	2.0	2.2	3.0	4.2	5.1	6.3	7.3	9.4	14	9576K	114	679
2314	312KC	16	2	NO	2314	350	1.8	1.9	2.0	2.7	2.9	3.9	5.0	6.0	7.0	8.1	11	17	19440K	54	684
2314	312KC	4	2	NO	2400-5	350	1.1	1.3	1.5	1.9	2.1	3.5	4.7	6.2	7.5	9.0	12	18	4224K	176	624
2314	312KC	6	2	NO	2400-5	350	1.3	1.3	1.6	2.0	2.2	3.5	4.7	6.0	7.2	8.5	12	18	7040K	176	726
2314	312KC	8	2	NO	2400-5	350	1.4	1.4	1.7	2.0	2.2	3.0	4.2	5.2	6.4	7.3	9.5	14	9576K	114	679
2314	312KC	16	2	NO	2400-5	350	1.8	1.9	2.0	2.7	2.9	3.9	5.0	6.0	7.1	8.1	11	17	19440K	54	684

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.3	1.5	2.2	3.4	3.9	7.5	11	15	19	23	30	47	1056K	44	212
2314	312KC	6	1	NO	2314	85	1.4	1.6	2.0	2.9	3.3	5.8	8.4	12	14	17	22	35	1760K	44	208
2314	312KC	8	1	NO	2314	85	1.4	1.7	2.1	2.9	3.6	6.1	8.8	12	14	18	24	37	2352K	28	232
2314	312KC	16	1	NO	2314	85	1.9	2.1	2.8	3.8	4.3	6.8	9.3	14	17	20	27	41	4800K	16	228
2314	312KC	4	1	NO	2400-3	85	1.3	1.6	2.3	3.7	4.3	8.2	12	17	21	25	33	52	1056K	44	212
2314	312KC	6	1	NO	2400-3	85	1.4	1.6	2.2	3.2	3.7	6.6	9.5	13	16	19	25	39	1760K	44	208
2314	312KC	8	1	NO	2400-3	85	1.4	1.8	2.2	3.1	3.9	6.7	9.7	13	16	20	27	41	2352K	28	232
2314	312KC	16	1	NO	2400-3	85	1.9	2.1	2.9	4.0	4.5	7.2	9.9	15	18	21	29	43	4800K	16	228
2314	312KC	4	2	NO	2314	85	1.3	1.5	2.2	3.4	3.9	7.5	11	15	19	23	30	47	1056K	44	212
2314	312KC	6	2	NO	2314	85	1.4	1.6	2.0	2.9	3.3	5.8	8.4	12	14	17	22	35	1760K	44	208
2314	312KC	8	2	NO	2314	85	1.4	1.7	2.1	2.9	3.6	6.1	8.8	12	14	18	24	37	2352K	28	232
2314	312KC	16	2	NO	2314	85	1.9	2.1	2.8	3.8	4.3	6.8	9.3	14	17	20	27	41	4800K	16	228
2314	312KC	4	2	NO	2400-5	85	1.3	1.6	2.3	3.5	4.2	7.9	12	16	20	24	32	49	1056K	44	212
2314	312KC	6	2	NO	2400-5	85	1.4	1.6	2.1	3.0	3.5	6.2	9.0	12	15	18	24	37	1760K	44	208
2314	312KC	8	2	NO	2400-5	85	1.4	1.8	2.2	3.0	3.8	6.4	9.2	12	15	19	25	38	2352K	28	232
2314	312KC	16	2	NO	2400-5	85	1.9	2.1	2.9	3.9	4.4	7.0	9.6	15	18	21	28	42	4800K	16	228

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.5	2.4	3.8	7.1	8.6	18	27	36	47	56	77	120	408K	17	91
2314	312KC	6	1	NO	2314	35	1.5	2.1	3.1	5.1	6.6	13	20	26	34	41	57	86	680K	17	89
2314	312KC	8	1	NO	2314	35	1.7	2.2	3.4	5.7	7.0	13	21	28	36	43	59	89	924K	11	98
2314	312KC	16	1	NO	2314	35	2.0	3.0	4.2	6.5	7.7	17	24	33	41	49	66	99	1800K	6	97
2314	312KC	4	1	NO	2400-3	35	1.6	2.6	4.2	8.0	9.6	20	30	40	52	63	86	130	408K	17	91
2314	312KC	6	1	NO	2400-3	35	1.6	2.3	3.5	6.0	7.7	15	23	30	39	47	65	99	680K	17	89
2314	312KC	8	1	NO	2400-3	35	1.8	2.4	3.8	6.5	8.0	15	24	32	41	50	67	110	924K	11	98
2314	312KC	16	1	NO	2400-3	35	2.1	3.2	4.6	7.3	8.7	19	27	36	46	55	74	120	1800K	6	97
2314	312KC	4	2	NO	2314	35	1.5	2.4	3.8	7.1	8.6	18	27	36	47	56	77	120	408K	17	91
2314	312KC	6	2	NO	2314	35	1.5	2.1	3.1	5.1	6.6	13	20	26	34	41	57	86	680K	17	89
2314	312KC	8	2	NO	2314	35	1.7	2.2	3.4	5.7	7.0	13	21	28	36	43	59	89	924K	11	98
2314	312KC	16	2	NO	2314	35	2.0	3.0	4.2	6.5	7.7	17	24	33	41	49	66	99	1800K	6	97
2314	312KC	4	2	NO	2400-5	35	1.5	2.5	4.0	7.6	9.2	19	29	38	50	60	82	130	408K	17	91
2314	312KC	6	2	NO	2400-5	35	1.6	2.2	3.3	5.6	7.2	15	21	28	37	45	61	93	680K	17	89
2314	312KC	8	2	NO	2400-5	35	1.7	2.3	3.7	6.2	7.5	15	22	31	39	47	63	96	924K	11	98
2314	312KC	16	2	NO	2400-5	35	2.1	3.1	4.4	7.0	8.2	18	25	35	44	52	70	110	1800K	6	97

SYSTEM/360 MODEL 50

MAIN STORAGE USED 44,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	2.3	4.6	8.3	17	22	46	70	95	120	150	CE	CE	168K	7	36
2314	312KC	6	1	NO	2314	14	2.1	3.5	6.5	13	16	33	51	69	87	110	150	CE	280K	7	35
2314	312KC	8	1	NO	2314	14	2.2	4.0	7.1	14	18	37	56	76	95	120	170	260	336K	4	40
2314	312KC	16	1	NO	2314	14	3.1	5.1	8.3	18	22	45	68	92	120	140	190	300	600K	2	40
2314	312KC	4	1	NO	2400-3	14	2.6	5.2	9.5	20	25	51	79	110	140	170	CE	CE	168K	7	36
2314	312KC	6	1	NO	2400-3	14	2.3	4.1	7.6	15	19	39	60	80	110	130	170	CE	280K	7	35
2314	312KC	8	1	NO	2400-3	14	2.4	4.6	8.2	16	21	43	65	87	110	140	190	290	336K	4	40
2314	312KC	16	1	NO	2400-3	14	3.3	5.6	9.4	20	25	51	76	110	130	160	210	330	600K	2	40
2314	312KC	4	2	NO	2314	14	2.3	4.6	8.3	17	22	46	70	95	120	150	CE	CE	168K	7	36
2314	312KC	6	2	NO	2314	14	2.1	3.5	6.5	13	16	33	51	69	87	110	150	CE	280K	7	35
2314	312KC	8	2	NO	2314	14	2.2	4.0	7.1	14	18	37	56	76	95	120	170	260	336K	4	40
2314	312KC	16	2	NO	2314	14	3.1	5.1	8.3	18	22	45	68	92	120	140	190	300	600K	2	40
2314	312KC	4	2	NO	2400-5	14	2.5	4.9	9.0	19	24	49	76	110	130	160	CE	CE	168K	7	36
2314	312KC	6	2	NO	2400-5	14	2.2	3.9	7.2	14	18	37	57	76	96	120	160	CE	280K	7	35
2314	312KC	8	2	NO	2400-5	14	2.4	4.3	7.8	15	19	41	62	83	110	130	180	280	336K	4	40
2314	312KC	16	2	NO	2400-5	14	3.3	5.4	8.9	19	24	48	73	98	130	150	200	320	600K	2	40

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.2	1.3	1.7	1.8	2.7	3.6	4.8	5.8	6.7	8.9	14	4368K	364	2205
2314	312KC	6	1	NO	2314	350	1.3	1.3	1.4	1.8	1.9	2.6	3.3	4.4	5.2	5.9	7.8	12	7280K	364	2192
2314	312KC	8	1	NO	2314	350	1.4	1.4	1.5	1.7	1.9	2.8	3.5	4.2	4.9	5.6	7.7	11	10192K	364	2179
2314	312KC	16	1	NO	2314	350	1.8	1.9	2.0	2.2	2.3	2.9	4.2	5.0	5.8	6.6	8.2	12	21120K	176	2351
2314	312KC	4	1	NO	2400-3	350	1.1	1.2	1.3	1.7	1.9	2.8	3.8	5.1	6.1	7.1	9.4	15	4368K	364	2205
2314	312KC	6	1	NO	2400-3	350	1.3	1.3	1.4	1.8	2.0	2.7	3.5	4.6	5.5	6.3	8.3	12	7280K	364	2192
2314	312KC	8	1	NO	2400-3	350	1.4	1.4	1.6	1.8	1.9	2.9	3.7	4.4	5.2	6.0	8.2	12	10192K	364	2179
2314	312KC	16	1	NO	2400-3	350	1.8	1.9	2.0	2.3	2.4	3.0	4.4	5.2	6.0	6.9	8.6	12	21120K	176	2351
2314	312KC	4	2	NO	2314	350	1.1	1.2	1.4	1.6	1.8	2.7	3.5	4.6	5.6	6.7	8.8	14	4368K	364	1976
2314	312KC	6	2	NO	2314	350	1.2	1.3	1.4	1.8	1.9	2.5	3.2	4.2	5.0	5.7	7.4	11	7280K	364	1964
2314	312KC	8	2	NO	2314	350	1.4	1.4	1.5	1.7	1.9	2.8	3.5	4.2	4.9	5.6	7.7	11	10192K	364	2179
2314	312KC	16	2	NO	2314	350	1.8	1.9	2.0	2.2	2.3	2.9	4.2	5.0	5.8	6.6	8.2	12	21120K	176	2351
2314	312KC	4	2	NO	2400-5	350	1.1	1.2	1.4	1.6	1.8	2.7	3.6	4.7	5.7	6.8	8.9	14	4368K	364	1976
2314	312KC	6	2	NO	2400-5	350	1.2	1.3	1.4	1.8	1.9	2.6	3.3	4.3	5.1	5.8	7.6	11	7280K	364	1964
2314	312KC	8	2	NO	2400-5	350	1.4	1.4	1.5	1.8	1.9	2.8	3.6	4.3	5.1	5.8	8.0	12	10192K	364	2179
2314	312KC	16	2	NO	2400-5	350	1.8	1.9	2.0	2.2	2.4	3.0	4.3	5.1	5.9	6.7	8.4	12	21120K	176	2351

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.2	1.4	1.6	2.4	2.7	5.0	7.1	9.9	13	15	20	31	1092K	91	747
2314	312KC	6	1	NO	2314	85	1.3	1.4	1.8	2.3	2.5	4.2	5.9	7.7	9.4	12	16	24	1820K	91	743
2314	312KC	8	1	NO	2314	85	1.4	1.5	1.9	2.4	2.6	3.9	5.8	7.3	9.1	11	15	21	2548K	91	738
2314	312KC	16	1	NO	2314	85	1.8	2.0	2.2	2.6	3.4	5.0	6.5	8.1	9.6	12	15	21	5280K	44	796
2314	312KC	4	1	NO	2400-3	85	1.2	1.5	1.8	2.8	3.2	5.9	8.5	12	15	18	24	37	1092K	91	747
2314	312KC	6	1	NO	2400-3	85	1.3	1.5	1.9	2.6	3.0	5.1	7.3	9.4	12	14	20	29	1820K	91	743
2314	312KC	8	1	NO	2400-3	85	1.4	1.6	2.1	2.7	3.1	4.8	7.1	9.1	12	14	18	27	2548K	91	738
2314	312KC	16	1	NO	2400-3	85	1.9	2.0	2.3	2.9	3.8	5.7	7.6	9.5	12	14	18	25	5280K	44	796
2314	312KC	4	2	NO	2314	85	1.2	1.3	1.7	2.3	2.6	4.8	6.8	9.3	12	14	19	30	1092K	91	672
2314	312KC	6	2	NO	2314	85	1.3	1.4	1.7	2.1	2.4	3.9	5.5	7.0	8.6	11	15	23	1820K	91	668
2314	312KC	8	2	NO	2314	85	1.4	1.5	1.9	2.4	2.6	3.9	5.8	7.3	9.1	11	15	21	2548K	91	738
2314	312KC	16	2	NO	2314	85	1.8	1.9	2.1	2.4	3.2	4.5	5.9	7.3	8.6	10	13	19	5280K	44	721
2314	312KC	4	2	NO	2400-5	85	1.2	1.4	1.8	2.4	2.8	5.2	7.4	11	13	16	20	32	1092K	91	672
2314	312KC	6	2	NO	2400-5	85	1.3	1.4	1.8	2.3	2.6	4.3	6.1	7.8	9.6	12	16	25	1820K	91	668
2314	312KC	8	2	NO	2400-5	85	1.4	1.6	2.0	2.6	2.9	4.5	6.6	8.3	11	13	17	24	2548K	91	738
2314	312KC	16	2	NO	2400-5	85	1.8	2.0	2.2	2.6	3.4	4.9	6.4	7.9	9.4	11	14	21	5280K	44	721

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.3	1.8	2.6	4.6	5.7	12	18	23	30	36	49	76	432K	36	320
2314	312KC	6	1	NO	2314	35	1.4	1.8	2.3	3.8	4.5	8.4	13	18	22	27	37	55	720K	36	319
2314	312KC	8	1	NO	2314	35	1.5	1.9	2.4	3.5	4.1	7.8	12	16	20	23	32	50	1008K	36	317
2314	312KC	16	1	NO	2314	35	1.9	2.2	3.2	4.6	5.2	8.6	13	16	19	27	35	53	2040K	17	342
2314	312KC	4	1	NO	2400-3	35	1.4	2.0	3.0	5.5	6.8	14	21	28	36	43	58	90	432K	36	320
2314	312KC	6	1	NO	2400-3	35	1.4	2.0	2.8	4.8	5.6	11	17	22	28	34	46	69	720K	36	319
2314	312KC	8	1	NO	2400-3	35	1.6	2.1	2.9	4.5	5.2	11	15	20	25	30	41	64	1006K	36	317
2314	312KC	16	1	NO	2400-3	35	2.0	2.4	3.6	5.4	6.3	11	16	20	25	33	43	66	2040K	17	342
2314	312KC	4	2	NO	2314	35	1.3	1.7	2.4	4.2	5.2	11	16	22	28	34	47	71	432K	36	287
2314	312KC	6	2	NO	2314	35	1.3	1.7	2.2	3.5	4.3	7.6	12	16	21	25	34	51	720K	36	285
2314	312KC	8	2	NO	2314	35	1.4	1.8	2.3	3.2	4.2	7.4	11	14	18	21	30	46	1008K	36	283
2314	312KC	16	2	NO	2314	35	1.9	2.1	3.0	4.2	4.8	7.8	11	14	17	24	31	48	2040K	17	309
2314	312KC	4	2	NO	2400-5	35	1.4	1.8	2.7	4.8	5.9	12	18	24	32	38	52	79	432K	36	287
2314	312KC	6	2	NO	2400-5	35	1.4	1.8	2.4	4.1	5.0	8.9	14	19	24	29	39	59	720K	36	285
2314	312KC	8	2	NO	2400-5	35	1.5	2.0	2.6	3.8	4.9	8.7	13	17	21	25	35	54	1008K	36	283
2314	312KC	16	2	NO	2400-5	35	1.9	2.2	3.2	4.6	5.3	8.9	13	16	20	27	35	55	2040K	17	309

SYSTEM/360 MODEL 50

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) 2	5	10	20	FOR DATA SET SIZES (IN THOUSANDS) 25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.8	2.9	5.6	11	14	28	45	62	79	94	CE	CE	168K	14	132
2314	312KC	6	1	NO	2314	14	1.8	2.6	4.4	8.1	11	22	33	45	57	70	97	CE	280K	14	131
2314	312KC	8	1	NO	2314	14	1.9	2.7	4.0	7.6	9.6	19	28	40	51	61	85	130	392K	14	131
2314	312KC	16	1	NO	2314	14	2.2	3.5	5.1	8.3	9.9	18	31	41	53	63	86	140	840K	7	140
2314	312KC	4	1	NO	2400-3	14	2.0	3.5	6.7	14	17	34	54	73	93	120	CE	CE	168K	14	132
2314	312KC	6	1	NO	2400-3	14	2.0	3.1	5.5	11	13	28	42	56	71	88	120	CE	280K	14	131
2314	312KC	8	1	NO	2400-3	14	2.1	3.2	5.1	9.9	13	25	37	51	65	79	110	170	392K	14	131
2314	312KC	16	1	NO	2400-3	14	2.4	4.0	6.2	11	13	24	40	52	67	80	110	170	840K	7	140
2314	312KC	4	2	NO	2314	14	1.7	2.7	5.1	11	13	28	42	57	73	92	CE	CE	168K	14	118
2314	312KC	6	2	NO	2314	14	1.7	2.4	4.2	7.4	9.1	20	31	41	52	66	90	CE	280K	14	118
2314	312KC	8	2	NO	2314	14	1.8	2.5	3.6	7.2	8.7	17	27	37	47	57	78	120	392K	14	117
2314	312KC	16	2	NO	2314	14	2.1	3.3	4.7	7.6	9.0	17	28	37	49	58	78	120	840K	7	126
2314	312KC	4	2	NO	2400-5	14	1.8	3.1	5.8	12	15	31	47	64	82	110	CE	CE	168K	14	118
2314	312KC	6	2	NO	2400-5	14	1.8	2.7	4.9	8.8	11	24	36	48	60	76	110	CE	280K	14	118
2314	312KC	8	2	NO	2400-5	14	2.0	2.8	4.3	8.6	11	21	32	44	55	68	92	140	392K	14	117
2314	312KC	16	2	NO	2400-5	14	2.2	3.6	5.3	8.7	11	19	33	43	56	66	90	140	840K	7	126

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) 2	5	10	20	FOR DATA SET SIZES (IN THOUSANDS) 25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.2	1.3	1.5	1.6	2.5	3.2	4.2	5.0	6.0	7.8	13	4368K	364	5466
2314	312KC	6	1	NO	2314	350	1.3	1.3	1.4	1.6	1.8	2.6	3.3	4.0	4.7	5.4	6.8	11	7280K	364	5453
2314	312KC	8	1	NO	2314	350	1.4	1.4	1.5	1.8	1.9	2.4	3.5	4.2	4.9	5.6	7.1	9.9	10192K	364	5440
2314	312KC	16	1	NO	2314	350	1.8	1.9	2.0	2.2	2.3	2.9	3.5	4.0	4.6	5.2	7.8	11	21840K	364	5367
2314	312KC	4	1	NO	2400-3	350	1.1	1.2	1.3	1.6	1.7	2.6	3.4	4.5	5.3	6.4	8.3	13	4368K	364	5466
2314	312KC	6	1	NO	2400-3	350	1.3	1.3	1.5	1.7	1.8	2.8	3.5	4.3	5.1	5.8	7.3	12	7280K	364	5453
2314	312KC	8	1	NO	2400-3	350	1.4	1.4	1.6	1.8	1.9	2.5	3.7	4.5	5.2	6.0	7.6	11	10192K	364	5440
2314	312KC	16	1	NO	2400-3	350	1.8	1.9	2.0	2.3	2.4	3.0	3.6	4.3	4.9	5.5	8.3	12	21840K	364	5367
2314	312KC	4	2	NO	2314	350	1.1	1.2	1.3	1.5	1.6	2.4	3.0	4.0	4.8	5.7	7.4	12	4368K	364	5237
2314	312KC	6	2	NO	2314	350	1.2	1.3	1.4	1.6	1.7	2.6	3.2	3.9	4.5	5.2	6.5	11	7280K	364	5225
2314	312KC	8	2	NO	2314	350	1.4	1.4	1.5	1.7	1.8	2.3	3.4	4.1	4.7	5.4	6.7	9.4	10192K	364	5212
2314	312KC	16	2	NO	2314	350	1.8	1.9	2.0	2.2	2.3	2.8	3.3	3.9	4.4	6.1	7.5	11	21840K	364	5139
2314	312KC	4	2	NO	2400-5	350	1.1	1.2	1.3	1.5	1.6	2.4	3.1	4.1	4.9	5.8	7.6	12	4368K	364	5237
2314	312KC	6	2	NO	2400-5	350	1.3	1.3	1.4	1.6	1.7	2.6	3.3	4.0	4.6	5.3	6.7	11	7280K	364	5225
2314	312KC	8	2	NO	2400-5	350	1.4	1.4	1.5	1.7	1.9	2.4	3.4	4.1	4.8	5.5	6.9	9.7	10192K	364	5212
2314	312KC	16	2	NO	2400-5	350	1.8	1.9	2.0	2.2	2.3	2.9	3.4	4.0	4.5	6.2	7.7	11	21840K	364	5139

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) 2	5	10	20	FOR DATA SET SIZES (IN THOUSANDS) 25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.2	1.3	1.6	2.1	2.4	4.3	6.0	8.5	11	13	18	28	1092K	91	1850
2314	312KC	6	1	NO	2314	85	1.3	1.4	1.6	2.3	2.5	3.8	5.1	7.2	8.7	11	14	21	1820K	91	1846
2314	312KC	8	1	NO	2314	85	1.4	1.5	1.7	2.1	2.6	3.9	5.2	6.5	7.8	9.1	14	20	2548K	91	1841
2314	312KC	16	1	NO	2314	85	1.8	1.9	2.1	2.5	2.7	3.6	5.8	7.1	8.4	9.7	13	18	5460K	91	1816
2314	312KC	4	1	NO	2400-3	85	1.2	1.4	1.8	2.5	2.9	5.2	7.4	11	13	16	21	33	1092K	91	1850
2314	312KC	6	1	NO	2400-3	85	1.3	1.5	1.8	2.6	3.0	4.7	6.4	9.0	11	14	18	26	1820K	91	1846
2314	312KC	8	1	NO	2400-3	85	1.4	1.6	1.9	2.4	3.1	4.8	6.5	8.3	10	12	17	25	2548K	91	1841
2314	312KC	16	1	NO	2400-3	85	1.9	2.0	2.3	2.8	3.1	4.5	7.0	8.8	11	13	16	23	5460K	91	1816
2314	312KC	4	2	NO	2314	85	1.2	1.2	1.6	2.0	2.2	3.9	5.5	7.8	9.5	12	16	25	1092K	91	1775
2314	312KC	6	2	NO	2314	85	1.3	1.4	1.5	2.1	2.4	3.5	4.6	6.5	7.8	9.6	13	19	1820K	91	1771
2314	312KC	8	2	NO	2314	85	1.4	1.5	1.6	1.9	2.5	3.6	4.7	5.9	7.0	8.1	12	19	2548K	91	1766
2314	312KC	16	2	NO	2314	85	1.8	1.9	2.1	2.4	2.5	4.2	5.3	6.5	7.7	8.8	12	16	5460K	91	1741
2314	312KC	4	2	NO	2400-5	85	1.2	1.3	1.6	2.1	2.4	4.3	6.1	8.5	11	13	18	28	1092K	91	1775
2314	312KC	6	2	NO	2400-5	85	1.3	1.4	1.6	2.3	2.5	3.9	5.2	7.3	8.8	11	14	21	1820K	91	1771
2314	312KC	8	2	NO	2400-5	85	1.4	1.5	1.7	2.1	2.7	4.0	5.3	6.6	8.0	9.3	14	21	2548K	91	1766
2314	312KC	16	2	NO	2400-5	85	1.8	1.9	2.1	2.5	2.7	4.5	5.9	7.2	8.6	9.9	13	18	5460K	91	1741

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.2	1.7	2.2	3.9	4.6	9.5	15	20	26	31	43	66	432K	36	795
2314	312KC	6	1	NO	2314	35	1.4	1.6	2.3	3.4	3.9	7.7	12	16	19	23	33	50	720K	36	793
2314	312KC	8	1	NO	2314	35	1.5	1.7	2.4	3.5	4.1	6.8	11	15	18	22	29	44	1008K	36	791
2314	312KC	16	1	NO	2314	35	1.9	2.1	2.5	3.2	4.5	7.2	10	13	16	19	24	35	2160K	36	781
2314	312KC	4	1	NO	2400-3	35	1.3	1.9	2.7	4.8	5.8	12	18	24	32	38	52	79	432K	36	795
2314	312KC	6	1	NO	2400-3	35	1.4	1.8	2.8	4.3	5.1	9.9	15	20	25	30	42	64	720K	36	793
2314	312KC	8	1	NO	2400-3	35	1.6	1.9	2.9	4.4	5.2	9.1	15	19	23	29	39	57	1008K	36	791
2314	312KC	16	1	NO	2400-3	35	2.0	2.3	2.9	4.1	5.7	9.5	14	18	22	25	33	49	2160K	36	781
2314	312KC	4	2	NO	2314	35	1.2	1.6	2.0	3.6	4.1	8.5	13	19	24	29	39	64	432K	36	762
2314	312KC	6	2	NO	2314	35	1.3	1.5	2.2	3.1	3.5	6.8	11	14	17	21	30	46	720K	36	760
2314	312KC	8	2	NO	2314	35	1.4	1.6	2.3	3.2	3.7	6.0	9.8	13	17	20	26	40	1008K	36	758
2314	312KC	16	2	NO	2314	35	1.9	2.0	2.3	2.9	4.2	6.5	8.9	12	14	16	21	31	2160K	36	747
2314	312KC	4	2	NO	2400-5	35	1.3	1.7	2.3	4.1	4.8	9.8	15	22	27	33	45	71	432K	36	762
2314	312KC	6	2	NO	2400-5	35	1.4	1.6	2.4	3.6	4.2	8.1	13	17	21	25	35	53	720K	36	760
2314	312KC	8	2	NO	2400-5	35	1.5	1.7	2.6	3.7	4.3	7.3	12	16	20	24	31	47	1008K	36	758
2314	312KC	16	2	NO	2400-5	35	1.9	2.2	2.6	3.5	4.8	7.9	11	14	17	20	26	38	2160K	36	747

SYSTEM/360 MODEL 50

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.6	2.7	4.5	9.2	12	26	40	54	67	86	CE	CE	168K	14	328
2314	312KC	6	1	NO	2314	14	1.6	2.5	3.8	7.5	9.0	19	30	41	51	63	86	CE	280K	14	327
2314	312KC	8	1	NO	2314	14	1.7	2.7	4.0	6.6	7.9	17	26	35	44	53	71	120	392K	14	326
2314	312KC	16	1	NO	2314	14	2.1	2.6	4.4	7.0	8.3	15	22	28	35	48	63	99	840K	14	322
2314	312KC	4	1	NO	2400-3	14	1.9	3.3	5.7	12	15	31	48	66	81	110	CE	CE	168K	14	328
2314	312KC	6	1	NO	2400-3	14	1.8	3.1	5.0	9.7	12	24	38	52	66	81	110	CE	280K	14	327
2314	312KC	8	1	NO	2400-3	14	1.9	3.2	5.1	8.9	11	23	35	47	59	70	94	160	392K	14	326
2314	312KC	16	1	NO	2400-3	14	2.3	3.2	5.6	9.3	12	21	30	40	49	65	86	140	840K	14	322
2314	312KC	4	2	NO	2314	14	1.6	2.5	4.0	8.3	11	23	36	49	65	79	CE	CE	168K	14	314
2314	312KC	6	2	NO	2314	14	1.5	2.3	3.4	6.6	8.0	17	27	36	46	57	78	CE	280K	14	313
2314	312KC	8	2	NO	2314	14	1.6	2.5	3.6	5.8	6.9	15	24	32	40	48	68	110	392K	14	313
2314	312KC	16	2	NO	2314	14	2.0	2.4	4.1	6.3	7.5	14	19	25	30	43	56	88	840K	14	308
2314	312KC	4	2	NO	2400-5	14	1.7	2.8	4.7	9.7	13	27	42	56	74	90	CE	CE	168K	14	314
2314	312KC	6	2	NO	2400-5	14	1.6	2.7	4.1	8.0	9.7	20	32	43	55	68	92	CE	280K	14	313
2314	312KC	8	2	NO	2400-5	14	1.7	2.8	4.3	7.2	8.6	19	29	39	49	58	82	130	392K	14	313
2314	312KC	16	2	NO	2400-5	14	2.2	2.8	4.8	7.7	9.2	17	24	32	39	53	70	110	840K	14	308

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.1	1.1	1.3	1.4	1.8	2.3	3.0	3.5	4.0	5.1	7.7	4368K	364	2205
2314	312KC	6	1	NO	2314	350	1.2	1.2	1.2	1.4	1.5	1.8	2.1	2.7	3.1	3.4	4.3	6.0	7280K	364	2192
2314	312KC	8	1	NO	2314	350	1.3	1.3	1.3	1.4	1.5	1.9	2.3	2.6	2.9	3.2	4.3	5.7	10192K	364	2179
2314	312KC	16	1	NO	2314	350	1.7	1.7	1.8	1.9	1.9	2.2	2.9	3.3	3.7	4.0	4.8	6.3	21120K	176	2351
2314	312KC	4	1	NO	2400-3	350	1.1	1.1	1.2	1.4	1.5	2.1	2.7	3.5	4.1	4.7	6.0	9.1	4368K	364	2205
2314	312KC	6	1	NO	2400-3	350	1.2	1.2	1.3	1.5	1.6	2.0	2.5	3.1	3.6	4.1	5.2	7.3	7280K	364	2192
2314	312KC	8	1	NO	2400-3	350	1.3	1.3	1.4	1.5	1.6	2.2	2.6	3.0	3.4	3.9	5.1	7.0	10192K	364	2179
2314	312KC	16	1	NO	2400-3	350	1.7	1.7	1.8	1.9	2.0	2.4	3.2	3.6	4.1	4.6	5.5	7.4	21120K	176	2351
2314	312KC	4	2	NO	2314	350	1.1	1.1	1.2	1.3	1.4	1.8	2.2	2.8	3.3	3.9	4.9	7.3	4368K	364	1976
2314	312KC	6	2	NO	2314	350	1.2	1.2	1.2	1.4	1.5	1.7	2.0	2.5	2.9	3.2	4.0	5.5	7280K	364	1964
2314	312KC	8	2	NO	2314	350	1.3	1.3	1.3	1.4	1.5	1.9	2.3	2.6	2.9	3.2	4.3	5.7	10192K	364	2179
2314	312KC	16	2	NO	2314	350	1.7	1.7	1.8	1.9	1.9	2.2	2.9	3.3	3.7	4.0	4.8	6.3	21120K	176	2351
2314	312KC	4	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.4	1.9	2.4	3.0	3.6	4.2	5.3	7.9	4368K	364	1976
2314	312KC	6	2	NO	2400-5	350	1.2	1.2	1.3	1.5	1.5	1.8	2.2	2.7	3.1	3.5	4.4	6.1	7280K	364	1964
2314	312KC	8	2	NO	2400-5	350	1.3	1.3	1.4	1.5	1.5	2.1	2.5	2.8	3.2	3.6	4.8	6.5	10192K	364	2179
2314	312KC	16	2	NO	2400-5	350	1.7	1.7	1.8	1.9	2.0	2.3	3.0	3.5	3.9	4.3	5.2	6.9	21120K	176	2351

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.3	1.5	2.2	2.5	4.4	6.3	8.8	11	13	18	28	1092K	91	747
2314	312KC	6	1	NO	2314	85	1.2	1.3	1.6	2.0	2.2	3.7	5.2	6.6	8.1	9.6	14	21	1820K	91	743
2314	312KC	8	1	NO	2314	85	1.3	1.4	1.7	2.1	2.3	3.4	5.0	6.2	7.8	9.1	12	18	2548K	91	738
2314	312KC	16	1	NO	2314	85	1.7	1.8	2.0	2.3	3.0	4.3	5.6	6.9	8.2	9.4	12	18	5280K	44	796
2314	312KC	4	1	NO	2400-3	85	1.2	1.4	1.7	2.6	2.9	5.4	7.7	11	14	16	22	34	1092K	91	747
2314	312KC	6	1	NO	2400-3	85	1.2	1.4	1.8	2.4	2.7	4.6	6.5	8.4	11	13	18	26	1820K	91	743
2314	312KC	8	1	NO	2400-3	85	1.3	1.5	1.9	2.5	2.8	4.3	6.4	8.1	11	12	16	24	2548K	91	738
2314	312KC	16	1	NO	2400-3	85	1.8	1.9	2.2	2.7	3.5	5.2	7.0	8.7	11	13	16	23	5280K	44	796
2314	312KC	4	2	NO	2314	85	1.1	1.3	1.5	2.1	2.3	4.3	6.0	8.3	11	13	17	26	1092K	91	672
2314	312KC	6	2	NO	2314	85	1.2	1.3	1.5	1.9	2.1	3.4	4.7	6.0	7.3	8.6	13	19	1820K	91	668
2314	312KC	8	2	NO	2314	85	1.3	1.4	1.7	2.1	2.3	3.4	5.0	6.2	7.8	9.1	12	18	2548K	91	738
2314	312KC	16	2	NO	2314	85	1.7	1.8	1.9	2.2	2.9	4.0	5.2	6.3	7.4	8.6	11	16	5280K	44	721
2314	312KC	4	2	NO	2400-5	85	1.1	1.3	1.7	2.3	2.6	4.8	6.8	9.4	12	15	19	30	1092K	91	672
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.7	2.1	2.4	3.9	5.5	7.1	8.7	11	15	23	1820K	91	668
2314	312KC	8	2	NO	2400-5	85	1.3	1.4	1.8	2.4	2.6	3.9	5.9	7.4	9.2	11	15	22	2548K	91	738
2314	312KC	16	2	NO	2400-5	85	1.7	1.8	2.0	2.4	3.1	4.5	5.8	7.2	8.6	9.9	13	19	5280K	44	721

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.3	1.7	2.5	4.4	5.4	11	17	23	29	35	47	74	432K	36	320
2314	312KC	6	1	NO	2314	35	1.3	1.7	2.2	3.7	4.3	8.0	13	17	21	26	35	53	720K	36	319
2314	312KC	8	1	NO	2314	35	1.4	1.8	2.3	3.4	3.9	7.4	11	15	19	22	31	48	1008K	36	317
2314	312KC	16	1	NO	2314	35	1.8	2.1	3.0	4.3	5.0	8.2	12	15	18	25	33	51	2040K	17	342
2314	312KC	4	1	NO	2400-3	35	1.4	2.0	2.9	5.3	6.6	14	20	27	35	42	56	88	432K	36	320
2314	312KC	6	1	NO	2400-3	35	1.4	1.9	2.7	4.6	5.4	11	16	22	27	33	44	66	720K	36	319
2314	312KC	8	1	NO	2400-3	35	1.5	2.0	2.8	4.3	5.0	9.7	15	20	24	29	40	62	1008K	36	317
2314	312KC	16	1	NO	2400-3	35	1.9	2.3	3.5	5.2	6.1	11	15	20	24	32	42	65	2040K	17	342
2314	312KC	4	2	NO	2314	35	1.3	1.6	2.3	4.1	5.0	10	16	21	27	33	45	68	432K	36	287
2314	312KC	6	2	NO	2314	35	1.3	1.6	2.1	3.3	4.1	7.2	12	16	20	24	32	48	720K	36	285
2314	312KC	8	2	NO	2314	35	1.4	1.7	2.2	3.0	4.0	7.0	11	14	17	20	28	44	1008K	36	283
2314	312KC	16	2	NO	2314	35	1.8	2.0	2.9	4.0	4.6	7.4	11	14	16	23	30	46	2040K	17	309
2314	312KC	4	2	NO	2400-5	35	1.3	1.8	2.6	4.6	5.7	12	18	24	31	37	51	77	432K	36	287
2314	312KC	6	2	NO	2400-5	35	1.3	1.8	2.3	3.9	4.8	8.6	14	18	23	28	38	57	720K	36	285
2314	312KC	8	2	NO	2400-5	35	1.4	1.9	2.5	3.6	4.7	8.4	13	16	20	24	34	52	1008K	36	283
2314	312KC	16	2	NO	2400-5	35	1.8	2.1	3.1	4.5	5.1	8.5	12	16	19	26	34	53	2040K	17	309

SYSTEM/360 MODEL 65

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.7	2.9	5.5	11	14	28	44	61	77	92	CE	CE	168K	14	132
2314	312KC	6	1	NO	2314	14	1.7	2.5	4.3	7.9	9.9	21	33	44	56	69	95	CE	280K	14	131
2314	312KC	8	1	NO	2314	14	1.8	2.6	3.9	7.4	9.4	19	28	39	50	60	83	130	392K	14	131
2314	312KC	16	1	NO	2314	14	2.0	3.3	4.9	8.1	9.7	18	31	40	52	62	84	130	840K	7	140
2314	312KC	4	1	NO	2400-3	14	2.0	3.4	6.6	14	17	34	53	72	92	110	CE	CE	168K	14	132
2314	312KC	6	1	NO	2400-3	14	1.9	3.1	5.4	11	13	27	41	55	70	86	120	CE	280K	14	131
2314	312KC	8	1	NO	2400-3	14	2.0	3.2	5.0	9.7	13	24	36	50	64	78	110	170	392K	14	131
2314	312KC	16	1	NO	2400-3	14	2.3	3.9	6.1	11	13	24	39	52	67	79	110	170	840K	7	140
2314	312KC	4	2	NO	2314	14	1.6	2.6	5.0	10	13	27	41	56	71	90	CE	CE	168K	14	118
2314	312KC	6	2	NO	2314	14	1.6	2.3	4.1	7.2	8.8	20	30	40	50	64	88	CE	280K	14	118
2314	312KC	8	2	NO	2314	14	1.7	2.4	3.5	7.0	8.4	17	26	36	45	56	76	120	392K	14	117
2314	312KC	16	2	NO	2314	14	2.0	3.1	4.5	7.3	8.7	16	28	36	47	56	76	120	840K	7	126
2314	312KC	4	2	NO	2400-5	14	1.8	3.0	5.7	12	15	31	46	63	80	110	CE	CE	168K	14	118
2314	312KC	6	2	NO	2400-5	14	1.8	2.6	4.8	8.6	11	23	35	47	59	75	110	CE	280K	14	118
2314	312KC	8	2	NO	2400-5	14	1.9	2.7	4.2	8.4	11	20	31	43	54	67	90	140	392K	14	117
2314	312KC	16	2	NO	2400-5	14	2.1	3.4	5.1	8.4	11	19	32	42	54	65	88	140	840K	7	126

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.1	1.1	1.2	1.3	1.7	2.0	2.6	2.9	3.5	4.3	6.6	4368K	364	5466
2314	312KC	6	1	NO	2314	350	1.2	1.2	1.2	1.3	1.4	1.8	2.1	2.5	2.8	3.1	3.7	5.6	7280K	364	5453
2314	312KC	8	1	NO	2314	350	1.3	1.3	1.3	1.4	1.5	1.7	2.3	2.6	2.9	3.2	3.8	5.1	10192K	364	5440
2314	312KC	16	1	NO	2314	350	1.7	1.7	1.7	1.8	1.9	2.1	2.3	2.6	2.8	3.0	4.3	5.6	21840K	364	5367
2314	312KC	4	1	NO	2400-3	350	1.1	1.1	1.2	1.3	1.4	1.9	2.4	3.0	3.5	4.1	5.2	8.0	4368K	364	5466
2314	312KC	6	1	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	2.0	2.5	2.9	3.3	3.7	4.6	6.9	7280K	364	5453
2314	312KC	8	1	NO	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.9	2.6	3.0	3.4	3.9	4.7	6.4	10192K	364	5440
2314	312KC	16	1	NO	2400-3	350	1.7	1.7	1.8	1.9	2.0	2.3	2.7	3.0	3.3	3.7	5.2	6.9	21840K	364	5367
2314	312KC	4	2	NO	2314	350	1.1	1.1	1.1	1.2	1.2	1.6	1.9	2.4	2.7	3.2	4.0	6.1	4368K	364	5237
2314	312KC	6	2	NO	2314	350	1.2	1.2	1.2	1.3	1.3	1.7	2.0	2.3	2.6	2.8	3.4	5.1	7280K	364	5225
2314	312KC	8	2	NO	2314	350	1.3	1.3	1.3	1.4	1.4	1.6	2.1	2.4	2.7	3.0	3.5	4.6	10192K	364	5212
2314	312KC	16	2	NO	2314	350	1.7	1.7	1.7	1.8	1.8	2.0	2.2	2.4	2.6	3.5	4.0	5.2	21840K	364	5139
2314	312KC	4	2	NO	2400-5	350	1.1	1.1	1.1	1.2	1.3	1.7	2.0	2.6	2.9	3.5	4.3	6.6	4368K	364	5237
2314	312KC	6	2	NO	2400-5	350	1.2	1.2	1.3	1.3	1.4	1.8	2.2	2.5	2.8	3.1	3.8	5.7	7280K	364	5225
2314	312KC	8	2	NO	2400-5	350	1.3	1.3	1.4	1.4	1.5	1.7	2.3	2.6	2.9	3.3	3.9	5.2	10192K	364	5212
2314	312KC	16	2	NO	2400-5	350	1.7	1.7	1.7	1.8	1.9	2.1	2.4	2.6	2.9	3.7	4.4	5.7	21840K	364	5139

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.2	1.5	1.9	2.1	3.8	5.3	7.5	9.1	12	15	24	1092K	91	1850
2314	312KC	6	1	NO	2314	85	1.2	1.3	1.4	2.0	2.2	3.3	4.3	6.1	7.3	9.0	12	18	1820K	91	1846
2314	312KC	8	1	NO	2314	85	1.3	1.4	1.5	1.8	2.3	3.4	4.4	5.4	6.5	7.5	12	16	2548K	91	1841
2314	312KC	16	1	NO	2314	85	1.7	1.8	1.9	2.2	2.3	3.0	4.8	5.9	6.9	7.9	10	15	5460K	91	1816
2314	312KC	4	1	NO	2400-3	85	1.2	1.3	1.7	2.3	2.6	4.7	6.6	9.3	12	14	19	30	1092K	91	1850
2314	312KC	6	1	NO	2400-3	85	1.2	1.4	1.6	2.4	2.7	4.2	5.7	7.9	9.6	12	16	23	1820K	91	1846
2314	312KC	8	1	NO	2400-3	85	1.3	1.5	1.7	2.2	2.8	4.3	5.8	7.2	8.7	11	15	22	2548K	91	1841
2314	312KC	16	1	NO	2400-3	85	1.7	1.9	2.1	2.6	2.8	3.9	6.2	7.7	9.2	11	14	20	5460K	91	1816
2314	312KC	4	2	NO	2314	85	1.1	1.2	1.4	1.8	1.9	3.4	4.7	6.7	8.2	11	14	22	1092K	91	1775
2314	312KC	6	2	NO	2314	85	1.2	1.3	1.4	1.9	2.1	2.9	3.8	5.4	6.5	8.0	11	16	1820K	91	1771
2314	312KC	8	2	NO	2314	85	1.3	1.4	1.5	1.7	2.2	3.0	3.9	4.8	5.7	6.5	9.8	15	2548K	91	1766
2314	312KC	16	2	NO	2314	85	1.7	1.8	1.9	2.1	2.2	3.5	4.4	5.3	6.2	7.0	8.8	13	5460K	91	1741
2314	312KC	4	2	NO	2400-5	85	1.1	1.2	1.5	2.0	2.2	4.0	5.5	7.8	9.6	12	16	26	1092K	91	1775
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.5	2.1	2.3	3.5	4.6	6.5	7.9	9.7	13	19	1820K	91	1771
2314	312KC	8	2	NO	2400-5	85	1.3	1.4	1.6	1.9	2.5	3.6	4.8	5.9	7.0	8.2	12	19	2548K	91	1766
2314	312KC	16	2	NO	2400-5	85	1.7	1.8	2.0	2.3	2.5	4.1	5.2	6.4	7.6	8.7	11	16	5460K	91	1741

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.2	1.6	2.1	3.8	4.4	9.1	14	19	25	30	42	63	432K	36	795
2314	312KC	6	1	NO	2314	35	1.3	1.5	2.2	3.2	3.7	7.3	11	15	18	22	31	48	720K	36	793
2314	312KC	8	1	NO	2314	35	1.4	1.6	2.3	3.3	3.9	6.4	11	14	17	21	28	42	1008K	36	791
2314	312KC	16	1	NO	2314	35	1.8	2.0	2.3	3.0	4.3	6.8	9.4	12	15	17	23	33	2160K	36	781
2314	312KC	4	1	NO	2400-3	35	1.3	1.8	2.6	4.7	5.6	12	18	23	31	37	51	77	432K	36	795
2314	312KC	6	1	NO	2400-3	35	1.4	1.7	2.7	4.1	4.9	9.6	15	19	24	29	40	62	720K	36	793
2314	312KC	8	1	NO	2400-3	35	1.5	1.8	2.8	4.3	5.0	8.7	14	18	23	28	37	55	1008K	36	791
2314	312KC	16	1	NO	2400-3	35	1.9	2.2	2.8	3.9	5.4	9.1	13	17	21	24	32	47	2160K	36	781
2314	312KC	4	2	NO	2314	35	1.2	1.5	1.9	3.4	3.9	8.1	13	18	23	27	38	61	432K	36	762
2314	312KC	6	2	NO	2314	35	1.3	1.4	2.0	2.9	3.3	6.4	9.6	13	16	20	28	43	720K	36	760
2314	312KC	8	2	NO	2314	35	1.4	1.5	2.2	3.0	3.4	5.6	9.2	12	16	18	25	37	1008K	36	758
2314	312KC	16	2	NO	2314	35	1.8	1.9	2.2	2.7	3.9	6.1	8.3	11	13	15	20	28	2160K	36	747
2314	312KC	4	2	NO	2400-5	35	1.2	1.6	2.2	3.9	4.6	9.5	15	21	26	32	43	69	432K	36	762
2314	312KC	6	2	NO	2400-5	35	1.3	1.5	2.3	3.5	4.0	7.8	12	16	20	24	34	52	720K	36	760
2314	312KC	8	2	NO	2400-5	35	1.4	1.7	2.4	3.6	4.1	7.0	12	15	19	23	30	46	1008K	36	758
2314	312KC	16	2	NO	2400-5	35	1.8	2.1	2.5	3.3	4.6	7.5	11	14	17	19	25	37	2160K	36	747

SYSTEM/360 MODEL 65

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.6	2.7	4.4	9.0	12	25	39	53	66	85	CE	CE	168K	14	328
2314	312KC	6	1	NO	2314	14	1.5	2.5	3.7	7.3	8.8	18	29	40	50	62	85	CE	280K	14	327
2314	312KC	8	1	NO	2314	14	1.6	2.6	3.9	6.4	7.7	17	26	35	43	52	70	120	392K	14	326
2314	312KC	16	1	NO	2314	14	2.0	2.5	4.3	6.8	8.1	15	21	28	34	47	62	97	840K	14	322
2314	312KC	4	1	NO	2400-3	14	1.8	3.2	5.6	12	15	31	48	65	80	110	CE	CE	168K	14	328
2314	312KC	6	1	NO	2400-3	14	1.7	3.0	4.9	9.6	12	24	38	51	65	79	110	CE	280K	14	327
2314	312KC	8	1	NO	2400-3	14	1.8	3.2	5.0	8.7	11	23	34	46	58	69	93	160	392K	14	326
2314	312KC	16	1	NO	2400-3	14	2.2	3.1	5.4	9.1	11	21	30	39	48	64	85	140	840K	14	322
2314	312KC	4	2	NO	2314	14	1.5	2.4	3.9	8.1	11	23	36	48	64	78	CE	CE	168K	14	314
2314	312KC	6	2	NO	2314	14	1.4	2.3	3.3	6.4	7.7	16	26	36	45	56	76	CE	280K	14	313
2314	312KC	8	2	NO	2314	14	1.5	2.4	3.4	5.6	6.7	15	23	31	39	47	66	110	392K	14	313
2314	312KC	16	2	NO	2314	14	1.9	2.3	3.9	6.1	7.2	13	18	24	29	42	55	85	840K	14	308
2314	312KC	4	2	NO	2400-5	14	1.6	2.8	4.6	9.5	13	26	41	55	73	88	CE	CE	168K	14	314
2314	312KC	6	2	NO	2400-5	14	1.5	2.6	4.0	7.8	9.5	20	31	43	54	66	90	CE	280K	14	313
2314	312KC	8	2	NO	2400-5	14	1.7	2.7	4.1	7.0	8.4	18	29	38	47	57	80	130	392K	14	313
2314	312KC	16	2	NO	2400-5	14	2.1	2.7	4.6	7.5	8.9	17	24	31	38	52	69	110	840K	14	308

SYSTEM/360 MODEL 65

MAIN STORAGE USED 400,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.1	1.1	1.1	1.2	1.3	1.5	2.0	2.3	2.7	3.0	4.0	5.8	4368K	364	11987
2314	312KC	6	1	NO	2314	350	1.2	1.2	1.2	1.3	1.4	1.6	1.8	2.1	2.8	3.1	3.7	5.0	7280K	364	11975
2314	312KC	8	1	NO	2314	350	1.3	1.3	1.3	1.4	1.5	1.7	1.9	2.2	2.4	2.6	3.8	5.1	10192K	364	11962
2314	312KC	16	1	NO	2314	350	1.7	1.7	1.7	1.8	1.9	2.1	2.4	2.6	2.8	3.0	3.5	4.4	21840K	364	11889
2314	312KC	4	1	NO	2400-3	350	1.1	1.1	1.2	1.3	1.4	1.7	2.4	2.8	3.2	3.6	4.9	7.2	4368K	364	11987
2314	312KC	6	1	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	1.8	2.2	2.5	3.3	3.8	4.6	6.3	7280K	364	11975
2314	312KC	8	1	NO	2400-3	350	1.3	1.3	1.4	1.5	1.6	1.9	2.3	2.6	3.0	3.3	4.7	6.4	10192K	364	11962
2314	312KC	16	1	NO	2400-3	350	1.7	1.7	1.8	1.9	2.0	2.3	2.7	3.0	3.3	3.7	4.4	5.7	21840K	364	11889
2314	312KC	4	2	NO	2314	350	1.1	1.1	1.1	1.2	1.2	1.4	1.9	2.1	2.4	2.7	3.7	5.2	4368K	364	11759
2314	312KC	6	2	NO	2314	350	1.2	1.2	1.2	1.3	1.3	1.5	1.7	1.9	2.6	2.8	3.4	4.5	7280K	364	11746
2314	312KC	8	2	NO	2314	350	1.3	1.3	1.3	1.4	1.4	1.6	1.8	2.0	2.2	3.0	3.5	4.6	10192K	364	11733
2314	312KC	16	2	NO	2314	350	1.7	1.7	1.7	1.8	1.9	2.0	2.2	2.4	2.6	2.8	3.2	4.0	21840K	364	11660
2314	312KC	4	2	NO	2400-5	350	1.1	1.1	1.1	1.2	1.3	1.5	2.0	2.3	2.7	3.0	4.0	5.8	4368K	364	11759
2314	312KC	6	2	NO	2400-5	350	1.2	1.2	1.3	1.3	1.4	1.6	1.9	2.1	2.8	3.1	3.8	5.1	7280K	364	11746
2314	312KC	8	2	NO	2400-5	350	1.3	1.3	1.4	1.4	1.5	1.7	2.0	2.2	2.4	3.3	3.9	5.2	10192K	364	11733
2314	312KC	16	2	NO	2400-5	350	1.7	1.7	1.8	1.8	1.9	2.1	2.4	2.6	2.9	3.1	3.6	4.6	21840K	364	11660

SYSTEM/360 MODEL 65

MAIN STORAGE USED 400,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.2	1.3	1.9	2.1	3.1	4.8	6.4	7.7	9.3	14	21	1092K	91	4056
2314	312KC	6	1	NO	2314	85	1.2	1.3	1.4	1.7	1.8	3.2	4.3	5.3	6.3	7.3	11	16	1820K	91	4051
2314	312KC	8	1	NO	2314	85	1.3	1.4	1.5	1.8	1.9	2.6	4.4	5.4	6.4	7.5	9.5	14	2548K	91	4047
2314	312KC	16	1	NO	2314	85	1.7	1.8	1.9	2.2	2.3	3.0	3.7	4.4	6.9	7.9	9.9	14	5460K	91	4022
2314	312KC	4	1	NO	2400-3	85	1.2	1.3	1.5	2.3	2.6	4.0	6.2	8.2	10	13	17	27	1092K	91	4056
2314	312KC	6	1	NO	2400-3	85	1.2	1.4	1.6	2.1	2.3	4.2	5.6	7.1	8.6	11	15	22	1820K	91	4051
2314	312KC	8	1	NO	2400-3	85	1.3	1.5	1.7	2.2	2.4	3.5	5.7	7.2	8.7	11	14	20	2548K	91	4047
2314	312KC	16	1	NO	2400-3	85	1.7	1.9	2.1	2.6	2.8	3.9	5.1	6.2	9.1	11	14	20	5460K	91	4022
2314	312KC	4	2	NO	2314	85	1.1	1.2	1.3	1.8	1.9	2.8	4.2	5.6	6.8	8.2	12	19	1092K	91	3981
2314	312KC	6	2	NO	2314	85	1.2	1.3	1.4	1.6	1.7	2.9	3.8	4.6	5.5	6.3	9.6	14	1820K	91	3976
2314	312KC	8	2	NO	2314	85	1.3	1.4	1.5	1.7	1.8	2.3	3.9	4.8	5.6	6.5	8.2	12	2548K	91	3972
2314	312KC	16	2	NO	2314	85	1.7	1.8	1.9	2.1	2.2	2.7	3.3	3.8	6.1	7.0	8.8	13	5460K	91	3947
2314	312KC	4	2	NO	2400-5	85	1.1	1.2	1.4	2.0	2.2	3.3	5.1	6.7	8.1	9.9	15	23	1092K	91	3981
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.5	1.8	1.9	3.5	4.6	5.7	6.9	8.0	12	18	1820K	91	3976
2314	312KC	8	2	NO	2400-5	85	1.3	1.4	1.6	1.9	2.1	2.9	4.7	5.9	7.0	8.2	11	15	2548K	91	3972
2314	312KC	16	2	NO	2400-5	85	1.7	1.8	2.0	2.3	2.5	3.3	4.1	4.9	7.5	8.7	11	16	5460K	91	3947

SYSTEM/360 MODEL 65

MAIN STORAGE USED 400,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.2	1.4	2.1	3.1	3.6	7.7	12	17	21	26	36	58	432K	36	1744
2314	312KC	6	1	NO	2314	35	1.3	1.5	1.8	3.2	3.7	6.3	8.8	14	17	21	27	42	720K	36	1743
2314	312KC	8	1	NO	2314	35	1.4	1.6	1.9	2.6	3.8	6.4	8.9	12	14	17	26	40	1008K	36	1741
2314	312KC	16	1	NO	2314	35	1.8	2.0	2.3	3.0	3.3	6.8	9.3	12	15	17	22	33	2160K	36	1730
2314	312KC	4	1	NO	2400-3	35	1.3	1.6	2.6	4.0	4.8	9.9	15	22	27	33	45	72	432K	36	1744
2314	312KC	6	1	NO	2400-3	35	1.4	1.7	2.3	4.1	4.9	8.6	13	18	22	28	36	56	720K	36	1743
2314	312KC	8	1	NO	2400-3	35	1.5	1.8	2.4	3.5	5.0	8.7	13	16	20	24	35	53	1008K	36	1741
2314	312KC	16	1	NO	2400-3	35	1.9	2.2	2.8	3.9	4.5	9.1	13	17	21	24	32	46	2160K	36	1730
2314	312KC	4	2	NO	2314	35	1.2	1.3	1.9	2.7	3.7	6.7	12	15	20	23	32	52	432K	36	1711
2314	312KC	6	2	NO	2314	35	1.3	1.4	1.7	2.9	3.3	5.4	7.5	12	15	18	25	37	720K	36	1709
2314	312KC	8	2	NO	2314	35	1.4	1.5	1.8	2.3	3.4	5.6	7.7	9.8	12	15	22	35	1008K	36	1708
2314	312KC	16	2	NO	2314	35	1.8	1.9	2.2	2.7	3.0	6.1	8.2	11	13	15	19	28	2160K	36	1697
2314	312KC	4	2	NO	2400-5	35	1.2	1.4	2.2	3.3	4.4	8.1	14	18	23	28	37	60	432K	36	1711
2314	312KC	6	2	NO	2400-5	35	1.3	1.5	1.9	3.4	4.0	6.8	9.6	15	18	22	30	45	720K	36	1709
2314	312KC	8	2	NO	2400-5	35	1.4	1.7	2.0	2.8	4.1	7.0	9.8	13	16	19	28	43	1008K	36	1708
2314	312KC	16	2	NO	2400-5	35	1.8	2.1	2.5	3.3	3.7	7.5	11	14	16	19	25	36	2160K	36	1697

SYSTEM/360 MODEL 65

MAIN STORAGE USED 400,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.4	2.4	3.6	7.7	9.6	21	34	48	61	73	CE	CE	168K	14	720
2314	312KC	6	1	NO	2314	14	1.5	2.0	3.7	6.3	7.6	17	26	35	44	53	76	CE	280K	14	719
2314	312KC	8	1	NO	2314	14	1.6	2.1	3.8	6.4	7.7	14	24	32	41	49	67	110	392K	14	718
2314	312KC	16	1	NO	2314	14	2.0	2.5	3.3	5.0	8.1	15	21	28	34	40	53	79	840K	14	714
2314	312KC	4	1	NO	2400-3	14	1.6	2.9	4.8	10	13	27	42	59	75	91	CE	CE	168K	14	720
2314	312KC	6	1	NO	2400-3	14	1.7	2.6	4.9	8.6	11	23	34	46	58	70	99	CE	280K	14	719
2314	312KC	8	1	NO	2400-3	14	1.8	2.7	5.0	8.7	11	20	33	43	56	67	90	140	392K	14	718
2314	312KC	16	1	NO	2400-3	14	2.2	3.1	4.5	7.3	11	21	30	39	48	58	76	120	840K	14	714
2314	312KC	4	2	NO	2314	14	1.3	2.1	3.1	6.7	8.4	19	30	43	54	66	CE	CE	168K	14	706
2314	312KC	6	2	NO	2314	14	1.4	1.8	3.3	5.4	6.5	15	22	30	38	46	68	CE	280K	14	705
2314	312KC	8	2	NO	2314	14	1.5	1.9	3.4	5.6	6.6	12	21	28	36	43	59	90	392K	14	704
2314	312KC	16	2	NO	2314	14	1.9	2.3	2.9	6.1	7.1	13	18	24	29	35	45	80	840K	14	700
2314	312KC	4	2	NO	2400-5	14	1.4	2.5	3.8	8.1	11	22	35	50	63	77	CE	CE	168K	14	706
2314	312KC	6	2	NO	2400-5	14	1.5	2.1	4.0	6.8	8.2	18	28	37	47	57	82	CE	280K	14	705
2314	312KC	8	2	NO	2400-5	14	1.7	2.2	4.1	7.0	8.4	16	26	35	45	54	73	120	392K	14	704
2314	312KC	16	2	NO	2400-5	14	2.1	2.7	3.6	7.5	8.9	16	24	31	38	45	59	110	840K	14	700

SYSTEM/360 MODEL 75

MAIN STORAGE USED 100,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.0	1.0	1.1	1.3	1.3	1.8	2.2	2.9	3.3	3.8	4.9	7.4	4368K	364	2205
2314	312KC	6	1	NO	2314	350	1.1	1.1	1.2	1.4	1.4	1.7	2.0	2.5	2.9	3.2	4.1	5.6	7280K	364	2192
2314	312KC	8	1	NO	2314	350	1.2	1.2	1.3	1.3	1.4	1.8	2.1	2.4	2.7	3.0	4.0	5.4	10192K	364	2179
2314	312KC	16	1	NO	2314	350	1.5	1.6	1.6	1.7	1.8	2.0	2.7	3.0	3.4	3.8	4.5	5.9	21120K	176	2351
2314	312KC	4	1	NO	2400-3	350	1.0	1.1	1.1	1.4	1.4	2.0	2.6	3.3	3.9	4.5	5.8	8.8	4368K	364	2205
2314	312KC	6	1	NO	2400-3	350	1.1	1.2	1.2	1.5	1.5	1.9	2.4	3.0	3.5	3.9	5.0	7.0	7280K	364	2192
2314	312KC	8	1	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	2.0	2.5	2.9	3.3	3.7	4.9	6.8	10192K	364	2179
2314	312KC	16	1	NO	2400-3	350	1.6	1.6	1.7	1.8	1.9	2.2	3.0	3.4	3.9	4.4	5.3	7.1	21120K	176	2351
2314	312KC	4	2	NO	2314	350	1.0	1.0	1.1	1.2	1.3	1.7	2.1	2.7	3.2	3.7	4.7	7.0	4368K	364	1976
2314	312KC	6	2	NO	2314	350	1.1	1.1	1.2	1.3	1.4	1.6	1.9	2.4	2.7	3.0	3.8	5.2	7280K	364	1964
2314	312KC	8	2	NO	2314	350	1.2	1.2	1.3	1.3	1.4	1.8	2.1	2.4	2.7	3.0	4.0	5.4	10192K	364	2179
2314	312KC	16	2	NO	2314	350	1.5	1.6	1.6	1.7	1.8	2.0	2.7	3.0	3.4	3.8	4.5	5.9	21120K	176	2351
2314	312KC	4	2	NO	2400-5	350	1.0	1.1	1.2	1.3	1.3	1.8	2.3	2.9	3.4	4.1	5.1	7.6	4368K	364	1976
2314	312KC	6	2	NO	2400-5	350	1.1	1.1	1.2	1.4	1.4	1.8	2.1	2.6	3.0	3.3	4.2	5.9	7280K	364	1964
2314	312KC	8	2	NO	2400-5	350	1.2	1.2	1.3	1.4	1.5	2.0	2.3	2.7	3.1	3.4	4.6	6.2	10192K	364	2179
2314	312KC	16	2	NO	2400-5	350	1.6	1.6	1.6	1.8	1.8	2.1	2.9	3.3	3.7	4.1	4.9	6.6	21120K	176	2351

SYSTEM/360 MODEL 75

MAIN STORAGE USED 100,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.2	1.4	2.1	2.4	4.4	6.3	8.8	11	13	18	28	1092K	91	747
2314	312KC	6	1	NO	2314	85	1.1	1.2	1.5	2.0	2.2	3.6	5.1	6.5	8.0	9.4	14	21	1820K	91	743
2314	312KC	8	1	NO	2314	85	1.2	1.3	1.6	2.1	2.3	3.3	4.9	6.1	7.7	9.0	12	18	2548K	91	738
2314	312KC	16	1	NO	2314	85	1.6	1.7	1.8	2.2	2.9	4.2	5.4	6.7	8.0	9.3	12	17	5280K	44	796
2314	312KC	4	1	NO	2400-3	85	1.1	1.3	1.6	2.5	2.9	5.3	7.6	11	14	16	22	34	1092K	91	747
2314	312KC	6	1	NO	2400-3	85	1.2	1.3	1.7	2.3	2.6	4.5	6.4	8.4	11	13	17	26	1820K	91	743
2314	312KC	8	1	NO	2400-3	85	1.3	1.4	1.8	2.4	2.7	4.2	6.3	8.0	10	12	16	23	2548K	91	738
2314	312KC	16	1	NO	2400-3	85	1.6	1.8	2.0	2.5	3.3	5.1	6.8	8.5	11	12	16	23	5280K	44	796
2314	312KC	4	2	NO	2314	85	1.0	1.2	1.5	2.0	2.3	4.2	5.9	8.2	10	13	17	26	1092K	91	672
2314	312KC	6	2	NO	2314	85	1.1	1.2	1.5	1.8	2.0	3.3	4.6	5.9	7.2	8.5	13	19	1820K	91	668
2314	312KC	8	2	NO	2314	85	1.2	1.3	1.6	2.1	2.3	3.3	4.9	6.1	7.7	9.0	12	18	2548K	91	738
2314	312KC	16	2	NO	2314	85	1.6	1.7	1.8	2.0	2.7	3.9	5.0	6.1	7.3	8.4	11	16	5280K	44	721
2314	312KC	4	2	NO	2400-5	85	1.1	1.3	1.6	2.2	2.6	4.8	6.7	9.3	12	14	19	30	1092K	91	672
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.6	2.1	2.3	3.8	5.4	7.0	8.6	11	15	23	1820K	91	668
2314	312KC	8	2	NO	2400-5	85	1.3	1.4	1.8	2.3	2.5	3.8	5.8	7.2	9.1	11	15	21	2548K	91	738
2314	312KC	16	2	NO	2400-5	85	1.6	1.7	1.9	2.2	3.0	4.3	5.7	7.0	8.4	9.7	13	18	5280K	44	721

SYSTEM/360 MODEL 75

MAIN STORAGE USED 100,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.2	1.7	2.4	4.4	5.4	11	17	22	29	35	47	74	432K	36	320
2314	312KC	6	1	NO	2314	35	1.2	1.6	2.2	3.6	4.2	7.9	13	17	21	26	35	52	720K	36	319
2314	312KC	8	1	NO	2314	35	1.3	1.7	2.3	3.3	3.8	7.3	11	15	19	22	31	48	1008K	36	317
2314	312KC	16	1	NO	2314	35	1.7	1.9	2.9	4.2	4.8	8.0	12	15	18	25	33	51	2040K	17	342
2314	312KC	4	1	NO	2400-3	35	1.3	1.9	2.9	5.3	6.5	13	20	27	35	42	56	87	432K	36	320
2314	312KC	6	1	NO	2400-3	35	1.3	1.9	2.6	4.5	5.3	11	16	22	27	33	44	66	720K	36	319
2314	312KC	8	1	NO	2400-3	35	1.4	2.0	2.7	4.2	4.9	9.6	15	20	24	29	40	61	1008K	36	317
2314	312KC	16	1	NO	2400-3	35	1.8	2.2	3.4	5.1	6.0	11	15	20	24	32	42	64	2040K	17	342
2314	312KC	4	2	NO	2314	35	1.2	1.6	2.3	4.0	4.9	9.9	15	21	27	33	45	68	432K	36	287
2314	312KC	6	2	NO	2314	35	1.2	1.6	2.0	3.3	4.0	7.1	12	15	20	24	32	48	720K	36	285
2314	312KC	8	2	NO	2314	35	1.3	1.7	2.1	3.0	3.9	6.9	9.9	13	17	20	28	43	1008K	36	283
2314	312KC	16	2	NO	2314	35	1.7	1.9	2.7	3.9	4.4	7.3	11	13	16	23	30	46	2040K	17	309
2314	312KC	4	2	NO	2400-5	35	1.3	1.7	2.5	4.5	5.6	12	18	23	31	37	50	76	432K	36	287
2314	312KC	6	2	NO	2400-5	35	1.3	1.7	2.3	3.8	4.7	8.5	14	18	23	28	37	56	720K	36	285
2314	312KC	8	2	NO	2400-5	35	1.3	1.8	2.4	3.5	4.6	8.3	12	16	20	24	34	52	1008K	36	283
2314	312KC	16	2	NO	2400-5	35	1.7	2.0	3.0	4.3	5.0	8.4	12	16	19	26	34	53	2040K	17	309

SYSTEM/360 MODEL 75

MAIN STORAGE USED 100,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.7	2.8	5.4	11	14	28	44	61	77	92	CE	CE	168K	14	132
2314	312KC	6	1	NO	2314	14	1.6	2.4	4.2	7.8	9.8	21	32	44	55	69	95	CE	280K	14	131
2314	312KC	8	1	NO	2314	14	1.7	2.5	3.8	7.3	9.3	18	27	39	50	60	83	130	392K	14	131
2314	312KC	16	1	NO	2314	14	1.9	3.2	4.8	8.0	9.6	18	30	40	52	62	84	130	840K	7	140
2314	312KC	4	1	NO	2400-3	14	1.9	3.4	6.5	13	17	33	53	72	91	110	CE	CE	168K	14	132
2314	312KC	6	1	NO	2400-3	14	1.9	3.0	5.4	11	13	27	41	55	70	86	120	CE	280K	14	131
2314	312KC	8	1	NO	2400-3	14	2.0	3.1	4.9	9.6	13	24	36	50	64	77	110	170	392K	14	131
2314	312KC	16	1	NO	2400-3	14	2.2	3.8	5.9	11	13	24	39	51	66	79	110	170	840K	7	140
2314	312KC	4	2	NO	2314	14	1.6	2.6	4.9	9.9	13	27	41	56	71	90	CE	CE	168K	14	118
2314	312KC	6	2	NO	2314	14	1.6	2.2	4.0	7.1	8.7	20	30	40	50	64	87	CE	280K	14	118
2314	312KC	8	2	NO	2314	14	1.7	2.3	3.4	6.9	8.3	17	26	36	45	56	76	120	392K	14	117
2314	312KC	16	2	NO	2314	14	1.8	3.0	4.4	7.2	8.6	16	27	36	47	56	76	120	840K	7	126
2314	312KC	4	2	NO	2400-5	14	1.7	2.9	5.6	12	14	31	46	63	80	100	CE	CE	168K	14	118
2314	312KC	6	2	NO	2400-5	14	1.7	2.6	4.7	8.5	11	23	35	47	59	74	110	CE	280K	14	118
2314	312KC	8	2	NO	2400-5	14	1.8	2.7	4.1	8.3	10	20	31	43	54	66	90	140	392K	14	117
2314	312KC	16	2	NO	2400-5	14	2.0	3.3	5.0	8.3	10	19	32	42	54	64	87	140	840K	7	126

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.0	1.0	1.1	1.2	1.2	1.6	1.9	2.4	2.8	3.3	4.1	6.3	4368K	364	5466
2314	312KC	6	1	NO	2314	350	1.1	1.1	1.2	1.3	1.3	1.7	2.0	2.3	2.6	2.9	3.5	5.3	7280K	364	5453
2314	312KC	8	1	NO	2314	350	1.2	1.2	1.3	1.3	1.4	1.6	2.1	2.4	2.7	3.0	3.6	4.8	10192K	364	5440
2314	312KC	16	1	NO	2314	350	1.5	1.6	1.6	1.7	1.7	1.9	2.1	2.3	2.6	2.8	4.0	5.1	21840K	364	5367
2314	312KC	4	1	NO	2400-3	350	1.0	1.1	1.1	1.3	1.3	1.8	2.3	2.9	3.4	4.0	5.0	7.7	4368K	364	5466
2314	312KC	6	1	NO	2400-3	350	1.1	1.2	1.2	1.4	1.4	1.9	2.4	2.8	3.2	3.6	4.4	6.6	7280K	364	5453
2314	312KC	8	1	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	1.8	2.5	2.9	3.3	3.7	4.5	6.1	10192K	364	5440
2314	312KC	16	1	NO	2400-3	350	1.6	1.6	1.7	1.8	1.8	2.2	2.5	2.8	3.1	3.4	4.9	6.5	21840K	364	5367
2314	312KC	4	2	NO	2314	350	1.0	1.0	1.1	1.1	1.2	1.5	1.8	2.3	2.6	3.0	3.8	5.8	4368K	364	5237
2314	312KC	6	2	NO	2314	350	1.1	1.1	1.2	1.2	1.3	1.6	1.9	2.1	2.4	2.6	3.2	4.8	7280K	364	5225
2314	312KC	8	2	NO	2314	350	1.2	1.2	1.2	1.3	1.3	1.5	2.0	2.2	2.5	2.8	3.3	4.3	10192K	364	5212
2314	312KC	16	2	NO	2314	350	1.5	1.6	1.6	1.7	1.7	1.9	2.0	2.2	2.4	3.2	3.7	4.7	21840K	364	5139
2314	312KC	4	2	NO	2400-5	350	1.0	1.1	1.1	1.2	1.2	1.6	1.9	2.5	2.8	3.3	4.2	6.4	4368K	364	5237
2314	312KC	6	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.7	2.1	2.4	2.7	3.0	3.6	5.4	7280K	364	5225
2314	312KC	8	2	NO	2400-5	350	1.2	1.2	1.3	1.4	1.4	1.6	2.2	2.5	2.8	3.1	3.7	4.9	10192K	364	5212
2314	312KC	16	2	NO	2400-5	350	1.5	1.6	1.6	1.7	1.8	2.0	2.2	2.4	2.7	3.5	4.1	5.4	21840K	364	5139

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.1	1.4	1.9	2.1	3.7	5.2	7.4	9.0	12	15	24	1092K	91	1850
2314	312KC	6	1	NO	2314	85	1.1	1.2	1.4	1.9	2.2	3.2	4.2	6.0	7.2	8.9	12	18	1820K	91	1846
2314	312KC	8	1	NO	2314	85	1.2	1.3	1.5	1.7	2.3	3.3	4.3	5.3	6.3	7.4	11	16	2548K	91	1841
2314	312KC	16	1	NO	2314	85	1.6	1.7	1.8	2.1	2.2	2.9	4.7	5.7	6.7	7.8	9.8	14	5460K	91	1816
2314	312KC	4	1	NO	2400-3	85	1.1	1.2	1.6	2.2	2.5	4.6	6.5	9.2	12	14	19	30	1092K	91	1850
2314	312KC	6	1	NO	2400-3	85	1.2	1.3	1.5	2.3	2.6	4.1	5.6	7.8	9.5	12	16	23	1820K	91	1846
2314	312KC	8	1	NO	2400-3	85	1.3	1.4	1.6	2.1	2.7	4.2	5.7	7.1	8.6	11	15	22	2548K	91	1841
2314	312KC	16	1	NO	2400-3	85	1.6	1.8	2.0	2.4	2.7	3.8	6.1	7.5	9.0	11	14	20	5460K	91	1816
2314	312KC	4	2	NO	2314	85	1.0	1.1	1.4	1.7	1.9	3.3	4.6	6.6	8.1	10	14	22	1092K	91	1775
2314	312KC	6	2	NO	2314	85	1.1	1.2	1.3	1.8	2.0	2.8	3.7	5.3	6.4	7.9	11	16	1820K	91	1771
2314	312KC	8	2	NO	2314	85	1.2	1.3	1.4	1.6	2.1	3.0	3.8	4.7	5.5	6.4	9.6	15	2548K	91	1766
2314	312KC	16	2	NO	2314	85	1.6	1.6	1.7	2.0	2.1	3.4	4.2	5.1	6.0	6.9	8.6	13	5460K	91	1741
2314	312KC	4	2	NO	2400-5	85	1.1	1.2	1.5	1.9	2.1	3.9	5.4	7.7	9.5	12	16	25	1092K	91	1775
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.4	2.0	2.3	3.4	4.5	6.4	7.8	9.5	13	19	1820K	91	1771
2314	312KC	8	2	NO	2400-5	85	1.2	1.3	1.5	1.8	2.4	3.5	4.6	5.8	6.9	8.1	12	18	2548K	91	1766
2314	312KC	16	2	NO	2400-5	85	1.6	1.7	1.9	2.2	2.3	3.9	5.1	6.2	7.4	8.5	11	16	5460K	91	1741

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT	CH	SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.1	1.5	2.0	3.7	4.3	9.0	14	19	25	30	41	63	432K	36	795
2314	312KC	6	1	NO	2314	35	1.2	1.4	2.1	3.2	3.7	7.2	11	15	18	22	31	48	720K	36	793
2314	312KC	8	1	NO	2314	35	1.3	1.5	2.2	3.3	3.8	6.3	11	14	17	21	28	41	1008K	36	791
2314	312KC	16	1	NO	2314	35	1.7	1.9	2.2	2.9	4.2	6.7	9.2	12	15	17	22	33	2160K	36	781
2314	312KC	4	1	NO	2400-3	35	1.2	1.8	2.5	4.6	5.5	12	17	23	31	37	51	77	432K	36	795
2314	312KC	6	1	NO	2400-3	35	1.3	1.7	2.6	4.1	4.8	9.5	15	19	24	29	40	62	720K	36	793
2314	312KC	8	1	NO	2400-3	35	1.4	1.7	2.7	4.2	4.9	8.6	14	18	22	28	37	55	1008K	36	791
2314	312KC	16	1	NO	2400-3	35	1.8	2.1	2.7	3.8	5.3	9.0	13	17	20	24	32	46	2160K	36	781
2314	312KC	4	2	NO	2314	35	1.1	1.4	1.9	3.3	3.9	8.0	13	18	23	27	38	61	432K	36	762
2314	312KC	6	2	NO	2314	35	1.2	1.3	2.0	2.8	3.2	6.3	9.5	13	16	19	28	43	720K	36	760
2314	312KC	8	2	NO	2314	35	1.3	1.4	2.1	2.9	3.4	5.5	9.0	12	16	18	24	37	1008K	36	758
2314	312KC	16	2	NO	2314	35	1.6	1.8	2.0	2.6	3.8	5.9	8.1	11	13	15	19	28	2160K	36	747
2314	312KC	4	2	NO	2400-5	35	1.2	1.6	2.1	3.9	4.6	9.4	15	21	26	32	43	69	432K	36	762
2314	312KC	6	2	NO	2400-5	35	1.3	1.5	2.3	3.4	3.9	7.7	12	16	20	24	34	51	720K	36	760
2314	312KC	8	2	NO	2400-5	35	1.3	1.6	2.4	3.5	4.1	6.9	12	15	19	22	30	45	1008K	36	758
2314	312KC	16	2	NO	2400-5	35	1.7	1.9	2.3	3.1	4.5	7.3	11	13	16	19	25	36	2160K	36	747

SYSTEM/360 MODEL 75

MAIN STORAGE USED 200,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.5	2.6	4.4	8.9	12	25	39	53	66	84	CE	CE	168K	14	328
2314	312KC	6	1	NO	2314	14	1.4	2.4	3.7	7.2	8.7	18	29	40	50	62	84	CE	280K	14	327
2314	312KC	8	1	NO	2314	14	1.5	2.5	3.8	6.3	7.6	17	26	34	43	52	70	120	392K	14	326
2314	312KC	16	1	NO	2314	14	1.9	2.4	4.2	6.7	8.0	15	21	28	34	47	62	96	840K	14	322
2314	312KC	4	1	NO	2400-3	14	1.8	3.2	5.5	12	15	31	48	64	80	110	CE	CE	168K	14	328
2314	312KC	6	1	NO	2400-3	14	1.7	3.0	4.8	9.5	12	24	38	51	64	79	110	CE	280K	14	327
2314	312KC	8	1	NO	2400-3	14	1.7	3.1	4.9	8.6	11	22	34	46	58	69	93	150	392K	14	326
2314	312KC	16	1	NO	2400-3	14	2.1	2.9	5.3	9.0	11	21	30	39	48	64	85	140	840K	14	322
2314	312KC	4	2	NO	2314	14	1.4	2.4	3.9	8.1	11	23	35	48	63	77	CE	CE	168K	14	314
2314	312KC	6	2	NO	2314	14	1.3	2.2	3.2	6.3	7.6	16	26	35	45	56	76	CE	280K	14	313
2314	312KC	8	2	NO	2314	14	1.4	2.3	3.4	5.5	6.6	15	23	31	38	46	65	110	392K	14	313
2314	312KC	16	2	NO	2314	14	1.8	2.2	3.8	5.9	7.0	13	18	24	29	41	54	85	840K	14	308
2314	312KC	4	2	NO	2400-5	14	1.6	2.7	4.6	9.5	13	26	41	55	72	88	CE	CE	168K	14	314
2314	312KC	6	2	NO	2400-5	14	1.5	2.5	3.9	7.7	9.4	20	31	42	53	66	90	CE	280K	14	313
2314	312KC	8	2	NO	2400-5	14	1.6	2.6	4.1	6.9	8.3	18	28	38	47	57	79	130	392K	14	313
2314	312KC	16	2	NO	2400-5	14	1.9	2.5	4.5	7.3	8.8	16	24	31	38	52	68	110	840K	14	308

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 20

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	350	1.0	1.1	1.1	1.2	1.2	1.4	1.9	2.2	2.5	2.8	3.8	5.5	4368K	364	11987
2314	312KC	6	1	NO	2314	350	1.1	1.1	1.2	1.3	1.3	1.5	1.7	1.9	2.6	2.9	3.5	4.7	7280K	364	11975
2314	312KC	8	1	NO	2314	350	1.2	1.2	1.3	1.3	1.4	1.6	1.8	2.0	2.2	2.4	3.6	4.8	10192K	364	11962
2314	312KC	16	1	NO	2314	350	1.5	1.6	1.6	1.7	1.7	1.9	2.2	2.4	2.6	2.8	3.2	4.0	21840K	364	11889
2314	312KC	4	1	NO	2400-3	350	1.0	1.1	1.1	1.3	1.3	1.7	2.3	2.7	3.1	3.5	4.8	6.9	4368K	364	11987
2314	312KC	6	1	NO	2400-3	350	1.1	1.2	1.2	1.4	1.4	1.7	2.1	2.4	3.2	3.6	4.4	6.0	7280K	364	11975
2314	312KC	8	1	NO	2400-3	350	1.2	1.2	1.3	1.4	1.5	1.8	2.1	2.5	2.8	3.1	4.5	6.1	10192K	364	11962
2314	312KC	16	1	NO	2400-3	350	1.6	1.6	1.7	1.8	1.9	2.2	2.5	2.8	3.1	3.5	4.1	5.4	21840K	364	11889
2314	312KC	4	2	NO	2314	350	1.0	1.0	1.1	1.1	1.2	1.3	1.8	2.0	2.3	2.5	3.5	4.9	4368K	364	11759
2314	312KC	6	2	NO	2314	350	1.1	1.1	1.2	1.2	1.3	1.4	1.6	1.8	2.4	2.7	3.2	4.2	7280K	364	11746
2314	312KC	8	2	NO	2314	350	1.2	1.2	1.2	1.3	1.4	1.5	1.7	1.9	2.0	2.8	3.3	4.3	10192K	364	11733
2314	312KC	16	2	NO	2314	350	1.5	1.6	1.6	1.7	1.7	1.9	2.0	2.2	2.4	2.6	2.9	3.6	21840K	364	11660
2314	312KC	4	2	NO	2400-5	350	1.0	1.1	1.1	1.2	1.2	1.4	1.9	2.2	2.5	2.8	3.9	5.5	4368K	364	11759
2314	312KC	6	2	NO	2400-5	350	1.1	1.1	1.2	1.3	1.3	1.5	1.7	2.0	2.7	3.0	3.6	4.8	7280K	364	11746
2314	312KC	8	2	NO	2400-5	350	1.2	1.2	1.3	1.4	1.4	1.6	1.8	2.1	2.3	3.1	3.7	4.9	10192K	364	11733
2314	312KC	16	2	NO	2400-5	350	1.5	1.6	1.6	1.7	1.8	2.0	2.2	2.4	2.7	2.9	3.3	4.2	21840K	364	11660

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 80

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	85	1.1	1.1	1.3	1.8	2.1	3.1	4.7	6.3	7.6	9.2	14	21	1092K	91	4056
2314	312KC	6	1	NO	2314	85	1.1	1.2	1.4	1.6	1.8	3.2	4.2	5.2	6.2	7.2	11	16	1820K	91	4051
2314	312KC	8	1	NO	2314	85	1.2	1.3	1.5	1.7	1.9	2.5	4.3	5.3	6.3	7.3	9.4	14	2548K	91	4047
2314	312KC	16	1	NO	2314	85	1.6	1.7	1.8	2.1	2.2	2.9	3.6	4.2	6.7	7.7	9.8	14	5460K	91	4022
2314	312KC	4	1	NO	2400-3	85	1.1	1.2	1.5	2.2	2.5	4.0	6.1	8.1	9.9	12	17	27	1092K	91	4056
2314	312KC	6	1	NO	2400-3	85	1.2	1.3	1.5	2.0	2.2	4.1	5.6	7.0	8.5	10	15	22	1820K	91	4051
2314	312KC	8	1	NO	2400-3	85	1.3	1.4	1.6	2.1	2.3	3.4	5.7	7.1	8.6	11	13	19	2548K	91	4047
2314	312KC	16	1	NO	2400-3	85	1.6	1.8	2.0	2.4	2.7	3.8	4.9	6.1	9.0	11	14	20	5460K	91	4022
2314	312KC	4	2	NO	2314	85	1.0	1.1	1.2	1.7	1.9	2.7	4.2	5.5	6.7	8.1	12	19	1092K	91	3981
2314	312KC	6	2	NO	2314	85	1.1	1.2	1.3	1.5	1.6	2.8	3.7	4.5	5.4	6.2	9.5	14	1820K	91	3976
2314	312KC	8	2	NO	2314	85	1.2	1.3	1.4	1.6	1.7	2.2	3.8	4.7	5.5	6.4	8.1	12	2548K	91	3972
2314	312KC	16	2	NO	2314	85	1.6	1.6	1.7	2.0	2.1	2.6	3.1	3.6	6.0	6.8	8.6	13	5460K	91	3947
2314	312KC	4	2	NO	2400-5	85	1.1	1.2	1.3	1.9	2.1	3.2	5.0	6.7	8.1	9.7	14	22	1092K	91	3981
2314	312KC	6	2	NO	2400-5	85	1.2	1.3	1.4	1.7	1.9	3.4	4.5	5.6	6.8	7.9	12	17	1820K	91	3976
2314	312KC	8	2	NO	2400-5	85	1.2	1.3	1.5	1.8	2.0	2.8	4.6	5.8	6.9	8.0	11	15	2548K	91	3972
2314	312KC	16	2	NO	2400-5	85	1.6	1.7	1.9	2.2	2.3	3.1	3.9	4.8	7.4	8.5	11	16	5460K	91	3947

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 200

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	35	1.1	1.3	2.0	3.1	3.6	7.6	12	17	21	26	35	58	432K	36	1744
2314	312KC	6	1	NO	2314	35	1.2	1.4	1.8	3.1	3.7	6.2	8.7	14	17	21	27	42	720K	36	1743
2314	312KC	8	1	NO	2314	35	1.3	1.5	1.9	2.5	3.8	6.3	8.8	12	14	17	26	39	1008K	36	1741
2314	312KC	16	1	NO	2314	35	1.7	1.9	2.2	2.9	3.2	6.7	9.2	12	15	17	22	32	2160K	36	1730
2314	312KC	4	1	NO	2400-3	35	1.2	1.6	2.5	4.0	4.7	9.9	15	22	27	33	45	71	432K	36	1744
2314	312KC	6	1	NO	2400-3	35	1.3	1.7	2.2	4.1	4.8	8.5	13	18	22	28	36	55	720K	36	1743
2314	312KC	8	1	NO	2400-3	35	1.4	1.7	2.3	3.4	4.9	8.6	13	16	20	24	35	53	1008K	36	1741
2314	312KC	16	1	NO	2400-3	35	1.8	2.1	2.7	3.8	4.3	9.0	13	17	20	24	31	46	2160K	36	1730
2314	312KC	4	2	NO	2314	35	1.1	1.2	1.8	2.7	3.6	6.6	11	15	20	23	32	52	432K	36	1711
2314	312KC	6	2	NO	2314	35	1.2	1.3	1.6	2.8	3.2	5.3	7.4	12	14	18	24	36	720K	36	1709
2314	312KC	8	2	NO	2314	35	1.3	1.4	1.7	2.2	3.3	5.4	7.6	9.7	12	14	22	35	1008K	36	1708
2314	312KC	16	2	NO	2314	35	1.6	1.8	2.0	2.6	2.8	5.9	8.0	11	13	15	19	28	2160K	36	1697
2314	312KC	4	2	NO	2400-5	35	1.2	1.4	2.1	3.2	4.3	8.0	14	18	23	27	37	60	432K	36	1711
2314	312KC	6	2	NO	2400-5	35	1.3	1.5	1.9	3.4	3.9	6.7	9.5	15	18	22	30	45	720K	36	1709
2314	312KC	8	2	NO	2400-5	35	1.3	1.6	2.0	2.7	4.0	6.8	9.7	13	16	19	28	43	1008K	36	1708
2314	312KC	16	2	NO	2400-5	35	1.7	1.9	2.3	3.1	3.5	7.3	11	13	16	19	25	36	2160K	36	1697

SYSTEM/360 MODEL 75

MAIN STORAGE USED 400,000

RECORD SIZE 500

WORK UNIT	DATA RATE	NUMBER UNIT/CH		SW	IN-OUT UNIT	IN-OUT BLOCK	TIME (IN MINUTES) FOR DATA SET SIZES (IN THOUSANDS) 2	5	10	20	25	50	75	100	125	150	200	300	MAX SIZE	SORT BLOCK	G
2314	312KC	4	1	NO	2314	14	1.3	2.3	3.6	7.6	9.6	21	34	47	60	73	CE	CE	168K	14	720
2314	312KC	6	1	NO	2314	14	1.4	1.9	3.7	6.2	7.5	17	26	35	43	52	76	CE	280K	14	719
2314	312KC	8	1	NO	2314	14	1.5	2.0	3.8	6.3	7.6	14	24	32	41	49	67	110	392K	14	718
2314	312KC	16	1	NO	2314	14	1.9	2.4	3.2	4.9	8.0	15	21	27	34	40	53	78	840K	14	714
2314	312KC	4	1	NO	2400-3	14	1.6	2.9	4.7	9.9	13	27	42	59	75	90	CE	CE	168K	14	720
2314	312KC	6	1	NO	2400-3	14	1.7	2.5	4.8	8.5	11	22	34	46	58	70	99	CE	280K	14	719
2314	312KC	8	1	NO	2400-3	14	1.7	2.6	4.9	8.6	11	20	33	43	56	66	90	140	392K	14	718
2314	312KC	16	1	NO	2400-3	14	2.1	2.9	4.3	7.2	11	20	30	39	48	57	76	120	840K	14	714
2314	312KC	4	2	NO	2314	14	1.2	2.1	3.1	6.6	8.3	19	30	43	54	66	CE	CE	168K	14	706
2314	312KC	6	2	NO	2314	14	1.3	1.7	3.2	5.3	6.4	14	22	30	38	46	67	CE	280K	14	705
2314	312KC	8	2	NO	2314	14	1.4	1.8	3.3	5.5	6.5	12	21	27	36	43	58	89	392K	14	704
2314	312KC	16	2	NO	2314	14	1.8	2.2	2.8	5.9	7.0	13	18	24	29	34	45	80	840K	14	700
2314	312KC	4	2	NO	2400-5	14	1.4	2.4	3.8	8.0	11	22	35	50	63	76	CE	CE	168K	14	706
2314	312KC	6	2	NO	2400-5	14	1.5	2.1	3.9	6.7	8.1	18	27	37	47	56	81	CE	280K	14	705
2314	312KC	8	2	NO	2400-5	14	1.6	2.2	4.0	6.9	8.3	16	26	34	45	53	72	110	392K	14	704
2314	312KC	16	2	NO	2400-5	14	1.9	2.5	3.5	7.3	8.7	16	23	31	38	45	59	110	840K	14	700

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