CRAY RESEARCH, INC.

CRAY X-MP AND CRAY-1® COMPUTER SYSTEMS

IBM VM STATION COMMAND AND REFERENCE

SI-0160

Requests for copies of Cray Research, Inc. publications and comments about these publications should be directed to:

CRAY RESEARCH, INC.
1440 Northland Drive
Mendota Heights, Minnesota 55120

Revision	Description
	November 1985 -- Original printing.
	This manual replaces the IBM VM Station Reference Manual, SR-0068, which was current through release 2.0 of the VM station. The information contained in SR-0068 was updated to reflect version 3.0, reorganized, and rewritten to produce this manual.

PREFACE

This publication provides reference information on the software that logically links a CRAY X-MP or CRAY-1 Computer System to an International Business Machines (IBM) System/370 or compatible computer system, excluding the IBM PC XT/370, AT/370, and Extended Architecture (XA) computer systems. The software providing the logical link executes under the IBM Virtual Machine (VM/370) System Control Product (SCP) with a minimum update level of System Product (SP) Release 3.0 and RSCS program Product Release 3.0 to run the base station. VM/SP Release 3.0 is required for total networking support.

Cray Research, Inc. (CRI) developed the Virtual Machine (VM) station as a service to its customers. The VM station is a software link that provides several interfaces between the IBM-compatible front-end processor station operator, Control Program operator, CMS terminal users, and the Cray Computer System. This manual uses the term "VM station" or simply "station" to refer to this software link.

General familiarity with the characteristics of the IBM VM Facility/370 and the Cray Operating System (COS) is assumed. Familiarity with the following publications is also recommended:

- VM station manuals (CRI publications):

  IBM VM Station Program Logic Manual, SI-0161
  IBM VM Station Installation and Maintenance, SI-0162
  IBM VM Station Reference Summary, SI-0163
  IBM VM Station Messages and Codes, SI-0165

- Other CRI publications:

  COS Version 1 Reference Manual, SR-0011
  COS Message Manual, SR-0039

- IBM publications:

  VM/SP CMS Command and Macro Reference, SC19-6209
  VM/SP CMS User's Guide, SC19-6210
  VM/SP CP Command Reference for General Users, SC19-6211

Table of Contents

1 INTRODUCTION AND GENERAL CONCEPTS

The VM station is the logical link between the Cray operating system COS and IBM's Conversational Monitor System (CMS). The station is VM-resident software that manages VM users' interactions with a CRAY X-MP or CRAY-1 Computer System.

1.1 Features of the VM Station

As a VM user, you do not have to step out of the VM environment to use a Cray Computer System. The VM station provides you with the following features:

- Support for the COS data transfer statements ACQUIRE, FETCH, and DISPOSE. These statements move data between COS datasets and CMS files or VM-supported devices.
- CMS commands for submitting COS jobs and transferring CMS files to and from COS.
- Character conversion and blocking of data received from and submitted to COS.
- Interactive access to COS, through which you can communicate directly with the Cray.
- COS master operator facilities.
- Full-screen monitoring of COS and the station. General users can monitor and control their COS jobs; operators can control COS and station activity.
- Support for graphics data, which can be transferred from a COS dataset to a CMS disk file or graphic device. You can do this either interactively or through a COS batch job you submit.
- Access to COS from remote VM or MVS systems that are connected to the front end through RSCS.
- A method for autologging a user's VM machine from a COS job. The autologged machine can then handle activity between CMS and COS.

1.2 Three Categories of Functions

The features of the VM station are accessed through three types of functions:

- COS data transfer statements
- VM station commands
- CMS commands (or TSO/E commands from remote MVS systems)

The COS data transfer statements, ACQUIRE, FETCH, and DISPOSE, are part of the COS Job Control Language. You use them from within COS jobs, which contain other COS control statements that identify the job, provide accounting information, compile and execute programs on the Cray, and so forth. This manual discusses only these three statements because they are responsible for moving data between VM and the Cray.

The VM station commands fit into the CMS command layer. Although they are part of the interface to the Cray, they are much like CMS commands in their syntax and in the defaults they use.

Several CMS commands can take advantage of the COS to CMS link. This manual briefly discusses the CMS SENDFILE and RECEIVE commands. It also explains how to use the CMS HELP command to get on-line help on station commands and error messages.

Although this manual is primarily intended for local users of the VM station, it also provides information on using the station from remote VM and MVS systems. This material is covered where appropriate throughout the manual. The final section (CMS and TSO/E Commands) contains brief descriptions of the non-station commands users need for remote transfers.

The remainder of this manual is organized according to the three categories listed above. The two VM station commands CRINT and CRSTAT have subcommands, which appear in separate sections.

1.3 Notational Conventions

The notational conventions used to define the syntax of commands and statements in this publication are consistent with those used in IBM's VM/SP documentation. They are summarized as follows:

- These symbols are used to define the format and should never be typed when the actual command is entered:

Angle brackets	< >
Brackets	[ ]
Ellipses	...
Plus sign	+
Underscore	_
Vertical bar	|

- Uppercase letters and words, and the following symbols, should be entered as specified in the format box:

Asterisk	*
Colon	:
Comma	,

Equal sign	=
Parentheses	( )
Period	.

- Lowercase words that appear in the format box represent variables for which specific information should be substituted.

- Brackets ([]) enclose optional items.

- Choices are represented in the command format boxes by stacking:

```
A
B
C
```

- Angle brackets are used to enclose choices from which you must make one selection:

```
<A>
<B>
<C>
```

  In some format boxes, you will find these choices on a single line, separated by vertical bars. Angle brackets enclose the entire list of choices. The following is equivalent to the preceding example:

```
<A|B|C>
```

- Plus signs and vertical bars are used to enclose choices from which you may make one selection:

```
+   +
| X |
| Y |
| Z |
+   +
```

  In this example, you may choose X, Y, Z, or omit the selection entirely.

- An underscore indicates an assumed default option. If an underscored choice is selected, it need not be specified when the command is entered.

- An ellipsis following an item indicates that the item may be repeated.

- A word in mixed case indicates that you may abbreviate it. The shortest acceptable abbreviation is denoted in uppercase. For example, the STATION option of the CRDISK command is represented as follows in the CRDISK format box:

```
STATion
```

  This indicates that you may enter STATION, STATIO, STATI, or just STAT for this option.

2 COS CONTROL STATEMENTS

The COS control statements ACQUIRE, FETCH, and DISPOSE handle data transfers between COS and the front-end system. ACQUIRE and FETCH move datasets from a front end (in this case, a VM system) to COS; DISPOSE moves COS datasets back to the front end.

Both ACQUIRE and FETCH make the transferred dataset local to the COS job that issued the statement. The difference between them is that ACQUIRE creates a permanent dataset from the file that is moved, whereas FETCH creates only a local dataset that is deleted once it is no longer needed (that is, once the job using it ends or releases the dataset).

ACQUIRE, FETCH, and DISPOSE are important interfaces to the front end in that they describe the data's characteristics both at the source and at the destination. Each statement has a free-format portion of syntax as well as a fixed-format portion. The fixed portion refers to the COS environment and therefore is the same regardless of which front end you are using it from. The free-format portion, or TEXT field, provides information about the data as seen from a particular front end.

These three COS control statements are presented here so that their VM station-specific TEXT fields can be described. For more information on all three, refer to the COS Reference Manual, CRI publication SR-0011.

2.1 ACQUIRE

The VM station can acquire datasets from your defined disks (excluding temporary disks) and from magnetic tape.

When ACQUIRE is issued, COS first checks to see if the requested dataset is permanently resident on COS mass storage. If it is, the dataset is made local to the requesting job. If the dataset is not already resident, the request is sent to the front-end system.

A maximum record length of 64K bytes is supported for CMS disk files, while a maximum tape block size of 60K bytes is supported for magnetic tape datasets.

The format of the ACQUIRE statement's TEXT field depends on whether the dataset is being acquired from disk or from tape.

Further discussion of ACQUIRE is divided into general format and examples, plus detailed format explanations for disk and tape acquires.

2.1.1 General Format

The general format of the ACQUIRE statement is:

```
ACQUIRE,DN=dn,PDN=pdn,DF=<TR>,AC=<MT>,MF=mf,TID=tid,TEXT='text'.
                          <BB>     <ST>
                          <CB>
```

where:

DN=dn — specifies the local dataset name of the dataset to be acquired. Can be up to 7 characters. This is a required parameter.

PDN=pdn — specifies the name used to place the dataset in the permanent dataset catalog. If not specified, the value of "dn" is used.

DF=df — specifies the dataset format. Must be CB (character blocked), BB (binary blocked), or TR (transparent). The default is CB.

For disk files, the maximum record length supported is 64K bytes.

For magnetic tape files, blocks of up to 60K bytes are supported for transparent datasets (DF=TR). For character blocked (CB) and binary blocked (BB) datasets, each tape block, up to a maximum block size of 60K bytes, becomes one dataset record. Tape marks are converted to EOF control words

(except the last tape mark, which is converted to an EOD control word).

AC=ac — specifies the acquisition code. ST indicates a disk file; MT indicates a tape file. The default is ST.

MF=mf — is the mainframe identifier of the station supplying the dataset to COS. It is required if the dataset is to be acquired from a station other than the one from which your COS job originated.

TID=tid — (valid for AC=ST only). Specifies the terminal ID under which COS will save the permanent dataset. If a TID is not specified, COS saves the dataset under the VM userid of the user from which the dataset is to be acquired. The default is your CMS userid.

If you specify the VM userid in this way, the station cannot send logfile messages to your $OUT file.

TEXT='text' — specifies the device-specific information needed by the VM station to process the ACQUIRE.

Usage Notes

1. The station determines which CMS file to acquire by checking the FN and FT TEXT field values, the PDN value, and the DN value, in that order of precedence.

2. COS names the permanent dataset according to the PDN value. If that value is not specified, COS uses the DN value.

2.1.2 Acquires From Disk

The TEXT field for minidisk datasets is as follows:

```
,TEXT='FN=fn,FT=<ft|FILE>,ADDR=<cuu|191>,WPW=wpw,PW=pw,

     TID=tid,FROM=<recnum|1>,FOR=<numrec>,TRTABLE=<trtable> '.
                                                <TREBAS >
```

where:

FN=fn — specifies the filename of the file to acquire. If not specified, the PDN (or DN) is used.

FT=ft — specifies the filetype of the file to acquire. The default is FILE.

ADDR=cuu specifies the address of the disk containing the file to be acquired. The default is 191.

WPW=wpw specifies the disk's read/write link password. Using this password permits you to acquire a file with a filemode extension of 0. Although the link actually used by the station for the acquire is read/only, the station first verifies the read/write link password for security.

PW=pw specifies the disk's read/only link password. If you supply this password and not WPW, you will not be able to acquire a CMS secured file (filemode extension of 0).

TID=tid specifies the VM userid of the minidisk owner. You can also specify a TID value in the general format of the ACQUIRE statement (that is, outside the TEXT field). If you do so, however, the station cannot send logfile messages to your $OUT file. If you specify the TID value here as well as outside the TEXT field, the value here overrides the other.

FROM=recnum specifies the record number of the first record you want to acquire. The default is the first record.

FOR=numrec specifies the maximum number of records you want to acquire. The default is all records to the end of the file.

TRTABLE=trtable
(valid only for DF=CB). Specifies a translation table. You can get a list of acceptable values for TRTABLE through CRSTAT's TRTABLE subcommand. The default is TREBAS, which translates EBCDIC to ASCII. See the IBM VM Station Messages and Codes manual for descriptions of the available translation tables.

2.1.3 Acquires From Tape

The TEXT field for tape datasets is as follows:

```
,TEXT='LB=<BLP|NL|SL>,VOLID=volid,FSEQ=<fseq|1>,FID=fileid,
                OPMSG=message,TRTABLE=<trtable> '.
                                      <TREBAS >
```

where:

LB=<BLP|NL|SL>
specifies the type of tape label processing to be performed:

BLP default; no label processing is performed

NL verifies that there is no standard IBM label on the tape mounted

SL standard IBM tape labels are processed

VOLID=volid (valid only for SL standard labeled tape transfers.) Specifies the serial IDs for all tape volumes in the dataset transfer. Each "volid" can be up to 6 characters. Multiple IDs must be separated by blanks. A maximum of 18 volumes can be specified.

The VM station verifies volume IDs for both acquires and disposes.

FSEQ=fseq specifies the file sequence number for multi-file tape volumes. The tape is positioned immediately after the tape mark before reading data. For labeled tapes, only the specified file is transferred. For unlabeled tapes, all files beginning with the specified sequence number are transferred. The default is 1.

FID=fileid (valid only for SL standard labeled tape transfers.) Specifies a file identifier. The default is the COS permanent dataset name (PDN). Can be up to 17 characters. This ID is verified for acquires and written for disposes.

OPMSG=message
specifies a message to be sent to the VM system operator console. Can be up to 130 characters long. This message is in addition to the mount message automatically issued by the VM station to the system operator, indicating COS job and requested tape volumes (or scratch tape).

TRTABLE=trtable
(valid only for DF=CB). Specifies a translation table. You can get a list of allowed values for "trtable" through CRSTAT's TRTABLE subcommand. The default is TREBAS, which translates EBCDIC to ASCII. See the IBM VM Station Messages and Codes manual for descriptions of the available translation tables.

2.1.4 ACQUIRE Statement Examples

1. ACQUIRE,DN=SAPPHIR.

   Acquires the CMS file SAPPHIR FILE from your 191 minidisk, using the default read/only password.

2. ACQUIRE,DN=EMERALD,TEXT='FT=UNCUT'.

   Acquires the CMS file EMERALD UNCUT from your 191 minidisk, using the default read/only password.

3. ACQUIRE,DN=DIAMOND,TID=U2887.

Or,

```
ACQUIRE,DN=DIAMOND,TEXT='TID=U2887'.
```

Acquires the CMS file DIAMOND FILE from the 191 minidisk of CMS user U2887, again using the default read/only password.

4. `ACQUIRE,DN=GARNET,TEXT='ADDR=291,PW=GREEN'.`

   Acquires the CMS file GARNET FILE from your 291 minidisk, using the password GREEN to link R/O to the disk.

5. `ACQUIRE,DN=BERYL,DF=TR,AC=MT,TEXT='LB=NL,OPMSG=VOLSER-MYTAPE'.`

   Acquires the first file in transparent mode from a 9-track tape. The station verifies that the tape mounted does not have an IBM standard label as its first record. The dataset is saved under the name BERYL. The message "VOLSER-MYTAPE" is issued to the VM system operator in addition to the station-generated mount message.

6. `ACQUIRE,DN=BERYL,DF=TR,AC=MT,TEXT='LB=NL,OPMSG=VOLSER-MYTAPE,FSEQ=3'.`

   Same as above, except the tape is positioned after the second file on the tape before reading data.

7. `ACQUIRE,DN=TOPAZ,AC=MT,TEXT='LB=SL,VOLID=VOL1 VOL2,FID=DATAX'.`

   Acquires one tape file as character-blocked data and saves it as TOPAZ. Each tape block read is considered a dataset record. The data is translated to ASCII. Tape labels are verified. The first tape mounted is checked for the volume serial ID VOL1; the second is checked for volume serial ID VOL2. The file ID is verified as DATAX.

2.2 FETCH

The format of the FETCH statement is the same as ACQUIRE with one difference: you can specify a staged dataset name with SDN=, rather than a permanent dataset name with PDN=.

Only the format of the FETCH statement (general format plus the TEXT field for both disk and tape fetches) is presented here. Please refer to the previous subsection for format explanations, usage notes, and examples.

2.2.1 General Format

The general format of the FETCH statement is:

```
FETCH,DN=dn,SDN=sdn,DF=<TR>,AC=<MT>,MF=mf,TID=tid,TEXT='text'.
                        <BB>     <ST>
                        <CB>
```

where:

SDN=sdn — specifies the staged dataset name, or the name by which the dataset is known to VM. If not specified, the value of "dn" is used. This becomes the CMS filename unless you specify the FN= option.

The remaining parameters are explained in subsection 2.1.1.

2.2.2 TEXT Field From Disk

The format of the TEXT field for fetches from disk is as follows:

```
,TEXT='FN=fn,FT=<ft|FILE>,ADDR=<cuu|191>,WPW=wpw,PW=pw,

     TID=tid,FROM=<recnum|1>,FOR=<numrec>,TRTABLE=<trtable> '.
                                                <TREBAS >
```

See subsection 2.1.2 for an explanation of the parameters within this format.

2.2.3 TEXT Field From Tape

The format of the TEXT field for fetches from tape is as follows:

```
,TEXT='LB=<BLP|NL|SL>,VOLID=volid,FSEQ=<fseq|1>,FID=fileid,
                OPMSG=message,TRTABLE=<trtable> '.
                                      <TREBAS >
```

Explanations of this format and the parameters it contains can be found in subsection 2.1.3.

2.3 DISPOSE

Through the VM station, you can transfer a COS dataset to your virtual reader (in print or punch format), to the system printer or punch, to a remote RSCS printer or location, to magnetic tape, or directly to a program running in a local virtual machine.

If you specify DC=PR or PU and set NET=YES in the TEXT field, the dataset will be in MVS NETDATA format. This is the format used and recognized by the CMS SENDFILE and RECEIVE commands (VM/SP Rel. 3); it is also recognized by the MVS TSO/E product. NETDATA can be used to route a dataset from COS to a TSO user by way of the VM station and RSCS. Record lengths up to 64K bytes are supported if MVS NETDATA is used (32K for MVS TSO/E).

By coding DC=IN, you can use the DISPOSE statement to automatically log on a VM user through the CP AUTOLOG feature. (Although a dataset must be specified in this case, it is sent to a dummy output device.)

The format of the DISPOSE statement's TEXT field depends on the disposition code of the dataset, as specified by the DC parameter:

DC=PR (to a print file)
DC=PU (to a punch file)
DC=MT (to a magnetic tape file)
DC=IN (for autologging)
DC=IT (to a virtual machine via VMCF)

Further discussion of the DISPOSE statement is divided into general format and examples, plus detailed format explanations according to DC value.

2.3.1 General Format

The general format of the DISPOSE statement is:

```
DISPOSE,DN=dn,SDN=sdn,DC=<PU>,DF=<TR>,MF=mf,TID=tid,SF=f,
                          <MT>    <BB>
                          <IN>    <CB>
                          <IT>
                          <PR>

        <WAIT|NOWAIT>,ID=userid,DEFER,NRLS,TEXT='text'.
```

where:

DN=dn — specifies the local dataset name of the dataset to be disposed. Can be up to 7 characters. This is a required parameter.

SDN=sdn specifies the staged dataset name. For tape disposes, this name is displayed on the operator's console in the tape mount request. This also becomes the print or punch filename. If not specified, the value you specify for "dn" is used.

For DC=IT disposes, the use of the SDN value is defined by the receiving user's program.

DC=dc specifies one of the following disposition codes:

PR	print file
PU	punch file
MT	magnetic tape
IN	autolog a virtul machine
IT	from the VM station to another virtual machine through VMCF

The default is PR.

DF=df specifies the transfer format of the dataset. The acceptable values are:

CB Character blocked; the data is translated (according to the translation table specified in the TEXT field) and deblocked.

BB Binary blocked; the data is deblocked but not translated.

TR Transparent; the data is neither deblocked nor translated but is treated as continuous byte strings.

The default DF value is CB. The acceptable DF values for DC=IT transfers are defined by the receiving user's program.

MF=mf is the mainframe identifier. This is required only if the dataset is to be disposed through a station other than the one from which you submitted the job.

TID=tid specifies the virtual machine the dataset is to be routed to. You can route the dataset to a remote RSCS location by specifying TID=RSCS-userid, along with the RSCS remote nodeid and userid in the TAG field of the TEXT parameter. (This technique may vary at your site.) If you do not specify this parameter, "tid" defaults to your COS job's TID.

For DC=IT, the TID value can specify the receiving user. If ID is also coded, TID can specify a particular task or userid within the receiving user indicated by ID.

If you specify the VM userid in this way, the station will not send logfile messages to your $OUT file.

SF=f for DC=PR or PU, SF assigns a special forms class to the file. You can automatically route print and punch datasets by coding an appropriate character for SF. The value you specify must be a single alphanumeric character. The valid charac-

ters and their corresponding locations are set at station generation time by the system administrator. The default is SF=A.

For DC=IT, the meaning of the SF parameter is defined by the receiving user's program.

WAIT specifies that your program or job will not resume execution until the dataset has been successfully disposed. The WAIT/NOWAIT default is a COS installation parameter.

ID=userid specifies the receiving VM userid. This is valid only when you specify DC=IT. The value of "userid" is set to the TID value by default.

DEFER tells COS to defer the dispose until after the dataset is released. (By default, the dataset is disposed immediately after the DISPOSE statement is encountered.)

NRLS No Release Option. Specifies that the dataset is not to be released after it has been disposed. (By default, the disk space occupied by the dataset is released once the dispose has completed.)

TEXT='text' specifies the CMS-specific information needed by COS to perform the dispose. The format of the TEXT field depends on the disposition of the dataset.

Usage Notes

1. The station supports the automatic routing of CP TAG information through the station slot. If the job originates from RSCS, this information is RSCS routing information; otherwise, it is considered a user text string. The CP TAG information is issued with print and punch files disposed to the station.

   See subsection 3.8 on CRSUBMIT for more information on the processing of CP TAG.

2. Datasets disposed in MVS NETDATA format must be read to your minidisks with the CMS RECEIVE command; READCARD will not reformat the data correctly. Use the LRECL option to set the maximum logical record length of the file to something less than 64K bytes. To use the CMS PEEK command on a NETDATA file, specify an LRECL of 255 bytes.

3. If you specify DF=TR without specifying NETDATA format (that is, without coding NET=YES in the TEXT field), truncation may occur.

2.3.2 Dispose to a Print Dataset (DC=PR)

A disposition code (DC) of PR directs the disposed dataset to the system printer or to a virtual reader as a print dataset. The format of the TEXT field for print datasets is as follows:

```
,TEXT='TAG=tag,CC=<YES|NO>,PRT=<VIRT|REAL>,

      NET=<NO|YES>,TSTAT=<NO|YES>,CASE=<U|M>,TRTABLE=trtable'.
```

where:

TAG=tag assigns CP TAG information to the file (for example, an RSCS remote ID if you have specified TID=RSCS). This overrides any tag information that may be contained in the station slot. The maximum length of this field is 136 characters.

CC=<YES|NO> specifies whether or not the first column is interpreted as carriage control. The default is YES. No carriage control processing is performed when DF=BB or TR, or when NETDATA format is used. CC is also forced to NO if NET=NO is specified. You may lose column 132 of the original dataset if you specify CC=NO.

PRT=<VIRT|REAL>
routes the print file to either your virtual reader (VIRT) or to the real system printer that is local to the station (REAL). The default is VIRT.

NET=<NO|YES>
specifies whether or not the dataset is in MVS NETDATA format. The default is defined by your installation.

Note: If you specify NET=YES, the dispose is considered a DC=PU rather than DC=PR transfer, and the information here is **not** applicable. Refer to the TEXT field for DC=PU disposes (subsection 2.3.3) instead. Any TEXT field parameter that is not listed in 2.3.3 is ignored.

TSTAT=<NO|YES>
specifies whether or not data transfer statistics are included with the printed output. The default is NO. Specifying NET=NO forces TSTAT to NO.

CASE=<U|M> (valid only for DF=CB). Specifies whether the output is to be uppercase or mixed. The default is mixed.

TRTABLE=trtable
(valid only for DF=CB). Specifies a translation table. You can get a list of allowed values for "trtable" through CRSTAT's TRTABLE subcommand. The default is TRASEB, which translates ASCII to EBCDIC. If you specify CASE=U, however, the default is TRASEBUP. See the IBM VM Station Messages and Codes manual for descriptions of the available translation tables.

Usage Notes

1. For both character blocked (DF=CB) and binary blocked (DF=BB) datasets, records are truncated at 132 bytes (NET=NO).

2. No blank expansion is performed for BB datasets.

3. Transparent datasets (DF=TR) are arranged in sequential 132-byte records.

4. /EOF records are inserted in the print file to delimit multiple file datasets.

5. If PRT=REAL is specified, the file is printed FOR your CMS userid with the distribution code as set in your CP directory entry. If the file is printed FOR an invalid local CMS userid (TID from another front end), the file is printed FOR the station userid with a distribution code set to the COS job name.

2.3.3 Dispose to a Punch Dataset (DC=PU)

A disposition code (DC) of PU directs the disposed datasets to the system punch, or to a virtual reader as a punch dataset. The format of the TEXT field for punch datasets is:

```
,TEXT='TAG=tag,PUN=<VIRT|REAL>,NET=<NO|YES>,

            LRECL=lrecl,CASE=<U|M>,TRTABLE=trtable'.
```

where:

TAG=tag assigns CP TAG information to the file (for example, an RSCS remote ID if you have specified TID=RSCS). This overrides any tag information contained in the station slot. The maximum length of this field is 136 characters.

PUN=<VIRT|REAL>
routes the punch file either to your virtual reader (VIRT) or to the real system punch that is local to the station (REAL). The default is VIRT.

NET=<NO|YES>
specifies whether or not the dataset is in MVS NETDATA format. The default is defined by your installation.

LRECL=lrecl specifies a logical record length (for NETDATA files only). The default is defined by your installation.

CASE=<U|M> specifies whether the output is to be in mixed or uppercase. The default is mixed.

TRTABLE=trtable
(valid only for DF=CB). Specifies a translation table. You can get a list of allowed values for "trtable" through CRSTAT's TRTABLE subcommand. The default table is TRASEB, which translates ASCII to EBCDIC. If you specify CASE=U, however, the default is TRASEBUP. See the IBM VM Station Messages and Codes manual for descriptions of the available translation tables.

Usage Notes

1. For both character blocked (DF=CB) and binary blocked (DF=BB) datasets, records are truncated at 80 bytes (NET=NO only).

2. No blank expansion is performed for BB datasets.

3. Transparent datasets (DF=TR) are arranged in sequential 80-byte records (except for NET=YES, in which case the record length equals the segment size).

4. If you specify NET=YES, CB and BB dataset records are truncated at 64K. TR datasets are arranged in record lengths equal to the VM station dataset segment size.

5. /EOF records are inserted in the punch file to delimit multiple file datasets.

6. If PUN=REAL is specified, the file is punched FOR your CMS userid with the distribution code as set in your CP directory entry. If the file is punched FOR an invalid local CMS userid (TID from another front end), the file is punched FOR the station userid with a distribution code set to the COS job name.

2.3.4 Dispose to a Tape Dataset (DC=MT)

A disposition code (DC) of MT directs the disposed dataset to magnetic tape. The format of the TEXT field for tape datasets is:

```
,TEXT='LB=<BLP|NL|SL>,DEN=<6250|1600>,VOLID=volid,

   VOLSQ=volsq,FSEQ=fseq,FID=fileid,GENN=genn,GENV=genv,

     CRD=crdate,EXD=expdate,SECER=<NO|YES>,OPMSG=message,

         DISP=MOD,TRTABLE=trtable'.
```

where:

LB=<BLP|NL|SL>
: specifies the type of tape label processing to be performed:

  BLP do no label processing
  NL verify that there is no standard IBM label on the mounted tape
  SL process standard IBM tape labels

  The default is BLP.

DEN=<6250|1600>
: specifies the density (bpi) at which to write data during the dispose. The default is 6250.

VOLID=volid
: (valid only for SL standard labeled tape transfers.) Specifies the serial IDs for all tape volumes in the dataset transfer. Each "volid" can be up to 6 characters. Multiple IDs must be separated by blanks. A maximum of 18 volumes can be specified.

  The VM station verifies volume IDs for both acquires and disposes.

VOLSQ=volsq
: (valid only for SL standard labeled tape transfers.) Specifies a volume sequence number. Must be a 4-digit number from 0001 to 9999; the default is 0001.

FSEQ=fseq
: specifies the file sequence number for multi-file tape volumes. The tape is positioned immediately after the tape mark before data is read or written.

FID=fileid
: (valid only for SL standard labeled tape transfers.) Specifies a file identifier. The default is the COS permanent dataset name (PDN). Can be up to 17 characters. This ID is verified for acquires and written for disposes.

GENN=genn
: (valid only for SL standard labeled tape transfers.) Specifies the generation number. Must be 4 characters; the default is blank.

GENV=genv (valid only for SL standard labeled tape transfers.) Specifies the generation version. Must be 2 characters; the default is blank.

CRD=crdate (valid only for SL standard labeled tape transfers.) Specifies the tape dataset creation date in yyddd format (for example, March 11, 1985 would be 85070). The default is blanks.

EXD=exdate (valid only for SL standard labeled tape transfers.) Specifies the tape dataset expiration date in yyddd format. The default is blanks.

SECER=<NO|YES>
specifies whether or not the tape is to be erased before the data is written to it. If you specify YES, the tape is advanced to the specified file and erased from that point on. Then it is repositioned at the specified file before any data is written. If the file to be erased spans more than one volume, the subsequent volumes are erased as well.

The default is SECER=NO.

OPMSG=message
specifies a message to be sent to the VM system operator's console. Can be up to 130 characters long. This message is in addition to the mount message automatically issued by the VM station to the system operator, indicating COS job and requested tape volumes (or scratch tape).

DISP=MOD positions the tape after the last file found on the volume before data is written. This overrides FSEQ.

TRTABLE=trtable
specifies a translation table. You can get a list of allowed values for "trtable" through CRSTAT's TRTABLE subcommand. The default table is TRASEB, which translates ASCII to EBCDIC. See the IBM VM Station Messages and Codes manual for descriptions of the available translation tables.

Usage Notes

1. For both character blocked (DF=CB) and binary blocked (DF=BB) datasets, each record becomes a tape block up to a maximum of 60K bytes. EOF and EOD control words are treated as tape marks.

2. No blank expansion is performed for BB datasets.

3. For transparent datasets (DF=TR), each segment becomes one tape block up to a maximum of 60K bytes. The segment size is determined at VM station logon time.

4. For IBM standard labeled tapes, the station reads and verifies VOL1 label records and writes HDR1, HDR2, EOF1, EOF2, EOV1, and EOV2 label records.

2.3.5 Intertask Dispose (DC=IT)

A disposition code (DC) of IT transfers the dataset to another virtual machine through VMCF. This is called intertask communication.

The TEXT field of the DISPOSE statement for intertask communication is not defined by the station. It is instead defined by the program receiving the dataset in the receiving user's virtual machine (as specified by ID, TID, or a combination of the two).

The VM station provides two applications for receiving datasets disposed with DC=IT:

- The CRDISK command places the dataset in a CMS disk file.
- The CRGRAPH command directs the dataset to a graphics device.

You may wish to look at the implementation of these two commands in order to develop your own method of receiving datasets disposed with DC=IT.

One useful technique for receiving datasets disposed with DC=IT is to AUTOLOG a machine. Then a CMS application on that machine can handle the dataset appropriately: either by using CRDISK or CRGRAPH, or by invoking a user-supplied routine.

The disposition code IN on a DISPOSE statement is provided for autologging requests. The next subsection explains DC=IN. Descriptions of CRDISK and CRGRAPH can be found in section 3.

2.3.6 AUTOLOG Requests (DC=IN)

A DISPOSE statement with DC=IN does not result in the creation of a VM file; the data is merely sent to a dummy output device. The purpose of DC=IN is to perform an AUTOLOG procedure.

With AUTOLOG, you can log on any virtual machine that is defined in the VM/SP directory. The machine then runs in disconnected mode. Once autologged, the machine executes its PROFILE EXEC, which may in turn submit a COS job or perform other station functions. This is particularly useful for receiving datasets that have been disposed with DC=IT.

The format of the TEXT field for AUTOLOG requests is:

```
,TEXT='TID=tid,PW=password,CMD=command,ALOG=<PPN|CAN|CONT>'.
```

where:

TID=tid specifies the userid to be autologged. This value overrides the TID field specified elsewhere in the DISPOSE statement.

PW=password specifies the logon password of the VM userid to be autologged. This is a required parameter.

CMD=command specifies a one-line command that will be passed to the user at logon time.

ALOG=<PPN|CAN|CONT>
specifies the processing disposition if the user is already logged on:

PPN	the request is to be postponed
CAN	the request is to be cancelled
CONT	the autolog failure is to be ignored

The default is PPN.

Usage Notes

1. The WAIT option should be coded on the DISPOSE statement so that your job does not continue until the autolog request has been processed.

2. You can specify multiple commands with the CMD parameter by using the linend character (#) as a delimiter. For example:

```
CMD=CP M OP Starting job#EXEC JOBSUB
```

   The linend character is interpreted as a pound sign if the station's escape character (") precedes it. Note that the station's escape character is valid ONLY for linends (#'s); it does not behave like VM's escape character. For example, assume you specify the following CMD value:

```
CMD="#"#""""#"a"b
```

   The command would translate to:

```
##""#"a"b
```

   Notice that the escape character is suppressed only when followed by a linend character. VM's CP would have translated the line as:

```
##"#ab
```

2.3.7 DISPOSE Statement Examples

1. DISPOSE,DN=OUTFILE.

   Disposes the COS file OUTFILE to your virtual reader, class A, translating data from ASCII to EBCDIC and interpreting the first character in each line as carriage control.

2. DISPOSE,DN=OUTFILE,DC=PR,SF=A,TEXT='CC=YES'.

   Has the same effect as example #1; the defaults are explicitly coded.

3. DISPOSE,DN=STATS,DC=PR,SF=L,TEXT='PRT=REAL,CC=NO'.

   Disposes the file STATS to the real printer, special forms class L, without interpreting the first character in each line as carriage control.

4. DISPOSE,DN=WAVES,DC=PR.

   Disposes the file WAVES to your virtual reader, class A, interpreting the first column characters as carriage control. Note that DC=PR is not sufficient to send the file to the printer. You must specify the device name (with the PRT= option as in example #3); otherwise, the file is sent to your reader by default.

5. DISPOSE,DN=LOTUS,DC=PR,TID=RSCS,TEXT='TAG=MN01'.

   Routes the file LOTUS to the RSCS tagged as MN01.

6. DISPOSE,DN=STARS,DF=TR,DC=PU.

   Disposes the dataset STARS in transparent mode to your virtual reader in sequential 80-byte records.

7. DISPOSE,DN=2TAPE,DC=MT.

   Disposes the dataset 2TAPE to a magnetic tape file in character blocked format. Each dataset record becomes a tape block with End-Of-File (EOF) and End-Of-Data (EOD) becoming tape marks. The data is translated from ASCII to EBCDIC. No tape label processing occurs. A scratch tape is requested and the tape file can be multi-volume.

8. DISPOSE,DN=2TAPE,DC=MT,TEXT='LB=NL,OPMSG=CALL 3377'.

   Disposes the dataset 2TAPE to a magnetic tape file in character blocked format in the same fashion as above. The tape(s) mounted are checked for IBM standard tape labels. If a label is found, the dataset transfer is postponed and mount messages are re-issued to the operator. In addition to the station-generated tape mount message, the message CALL 3377 is issued to the VM system operator console.

9. DISPOSE,DN=2TAPE,DC=MT,¬
   TEXT='LB=SL,VOLID=MYVOL1 MYVOL2,FSEQ=2,SECER=YES'.

   Disposes the dataset 2TAPE to a magnetic tape file in character blocked format in the same fashion as in example 7. The tapes mounted are checked for standard IBM tape labels. The first volume mounted must have a volume ID of MYVOL1 and the second must have a volume ID of MYVOL2. The tape is positioned after the first file (tape mark), completely erased, and then repositioned after the first file before the dataset is written. The second volume is completely erased before the write continues. Header (HDR), End-Of-Volume (EOV) and End-Of-File (EOF) standard IBM labels are written for the dispose.

10. DISPOSE,DN=WAKEUP,DC=IN,TEXT='TID=U1878,'¬
'PW=LOGONPW,ALOG=PPN,CMD=CRDISK#LOGOFF'.

Disposes the dataset WAKEUP to a dummy output device. The station attempts to issue this CP command:

CP AUTOLOG U1878 LOGON PW CRDISK#LOGOFF

The "#" is translated as a linend character for U1878. The request is postponed if U1878 is logged on to VM.

3 VM STATION COMMANDS

This section contains reference information on the VM station commands. For each command, you will find a description and an explanation of format, plus usage notes and examples where appropriate.

The following table lists the VM station commands and summarizes their functions:

Command	Function
CRSEND	Sends a CMS JOB file or a data file to COS (from either a local or remote user)
CRSUBMIT	Sends a CMS JOB file to COS
CRDISK	Receives a COS dataset disposed with DC=IT to a CMS disk
CRGRAPH	Receives a COS dataset disposed with DC=IT to a graphic device
CRDGRAPH	Routes graphic data from a CMS disk file to a graphic device
CRINT	Starts an interactive session with COS
CRSTAT	Starts a status display session
CRCHOOSE	Selects a particular station as the default used by the other commands

Table 1. VM Station Command Summary

The table is divided functionally. Both CRSEND and CRSUBMIT transfer data from VM to COS through your virtual punch. CRSUBMIT uses the CMS PUNCH command, whereas CRSEND uses the CMS SENDFILE command.

The next three commands, CRDISK, CRGRAPH, and CRDGRAPH, handle data that is disposed to VM from COS. CRDISK and CRGRAPH receive datasets that are transferred via the DISPOSE statement with a disposition code (DC) of IT. CRDGRAPH directs graphic data in a disk file, which has been created with

the CRGRAPH command or CRINT's TRANSOUT subcommand, to a graphic dvice. (The TRANSOUT subcommand is explained in section 4.23.)

Both CRINT and CRSTAT set particular contexts. CRINT begins an interactive session with COS. During this session, you can issue COS job control statements as well as CRINT subcommands. CRSTAT sets a full-screen status display context from which you can issue a variety of status subcommands. Section 4 describes the CRINT subcommands and section 5 presents the CRSTAT subcommands.

The last command, CRCHOOSE, is necessary only if you have multiple Cray computer systems or multiple VM stations connected to one Cray. CRCHOOSE lets you select which system subsequent commands will refer to.

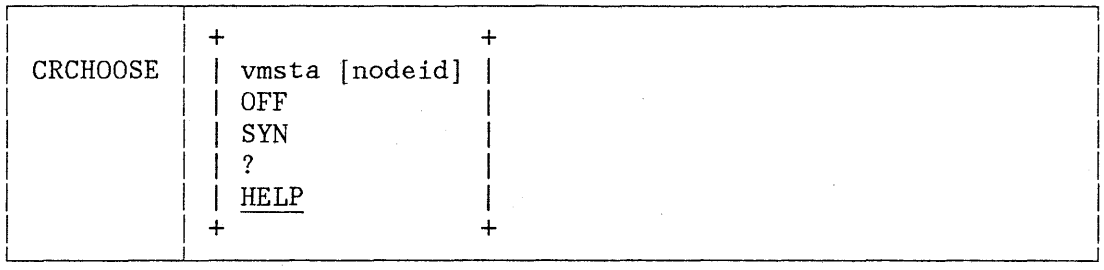
The following pages present the VM station commands in alphabetical order.

3.1 CRCHOOSE

Use the CRCHOOSE command to gain access to a particular VM station.

This command is necessary only if your site has multiple VM stations (for example, one test station and one production station).

Format



where:

vmsta — specifies the CMS virtual machine ID of the desired VM station. The valid station IDs are set by your installation.

nodeid — specifies the VM userid of the remote node of the desired VM station. The default is the local nodeid.

OFF — specifies that no default station is desired, and erases the STATION IDFILE from your A disk.

SYN — requests information from CRCHOOSE's synonym table. This table permits you to use a short version of the station's userid.

This feature may be disabled at your site; see your system administrator.

HELP — requests help information on CRCHOOSE. This is the default parameter.

? — equivalent to HELP.

The CRCHOOSE command either creates a file called STATION IDFILE on your A disk, or edits that file if it already exists. STATION IDFILE contains the value you specify for "vmsta". The other VM station commands refer to this value as a default when invoked.

You can override the default for a particular station command through the STAT option of that command.

Examples

1. CRCHOOSE STAT22
   CRSTAT

   The first command sets STAT22 as the default station. The CRSTAT command requests the status of STAT22.

2. CRCHOOSE CRAY3
   CRINT (STAT CRAY4

   The CRCHOOSE command sets CRAY3 as the default station, but the CRINT command overrides the default and starts an interactive session with CRAY4.

3.2 CRDGRAPH

Use the VM station CRDGRAPH command to direct graphic data from a native CMS file to a graphic device. The graphic data is created when you use either CRGRAPH or the CRINT subcommand /TRANSOUT DISK.

Format

```
CRDGRAPH   <CONSOLE>    fn  [ ft  [ fm ]]
           <CONPCI >
           <CONPCIN>
           <PCI1071>
           <AUSCOM >
           <AUSWAP >
           <TTY    >
```

where:

CONSOLE routes the graphic data through the virtual machine's console.

CONPCI routes the graphic data through the virtual machine's console, which is connected to the system by a PCI1071 protocol converter. (The PCI1071 must have the graphics feature installed.) The terminal will be cleared prior to each start I/O operation (SIO).

CONPCIN routes the graphic data through the virtual machine's console, which is connected to the system by a PCI1071 protocol converter. (The PCI1071 must have the graphics feature installed.) The terminal will not be cleared prior to each SIO.

PCI1071 routes the graphic data through a PCI1071 protocol converter. The PCI1071 must have the graphics feature installed and must be CP DIALed to your userid. The device's address is X'E0'.

AUSCOM routes the graphic data through an AUSCOM control unit. The device's address is X'110'. This device must be attached, not dialed, to your virtual machine. Byte swapping will not occur.

AUSWAP routes the graphic data through an AUSCOM control unit. The device's address is X'110'. This device must be attached, not dialed, to your virtual machine. Byte swapping will occur.

TTY routes the graphic data through an asynchronous communication path. The device must be CP DIALed to your userid. The device's address is X'F0'.

fn is the filename of the source file.

ft is the filetype of the source file. The default is TRANSPAR.

fm is the filemode of the source file. The default is A1.

Usage Note

The COS application may not use logical or physical blocks greater than the following:

Connection Method	Length in Bytes
CONSOLE	1,500
CONPCI and CONPCIN	3,300
PCI1071	3,300
AUSCOM and AUSWAP	32,000
TTY	61,440

Examples

```
CRDGRAPH TTY GRAFIX DATA C

CRDGRAPH PCI1071 GLACIAL
```

3.3 CRDISK

Use CRDISK to receive datasets that are disposed from COS using DC=IT to a CMS disk file. The disk file received can reside on a temporary disk (TDSK). CRDISK can also be used to copy, create, or modify a CMS native disk file during COS dataset processing.

The characteristics of the disposed dataset on CMS are defined by the TEXT field of the DISPOSE statement and cannot be changed by CRDISK. The DISPOSE statement for DC=IT is explained in subsection 2.3.5.

CRDISK can be executed by a disconnected virtual machine during off hours (for example). You can first have that machine autologged by performing a DISPOSE with DC=IN. Additional information concerning DC=IN can be found in subsection 2.3.6.

Format

CRDISK	(STATion vmsta)

where:

STATion vmsta
: directs the CRDISK command to connect to an alternate VM station. The value of "vmsta" must be a VM station's userid (maximum eight characters). You will receive an error message if you do not specify a userid.

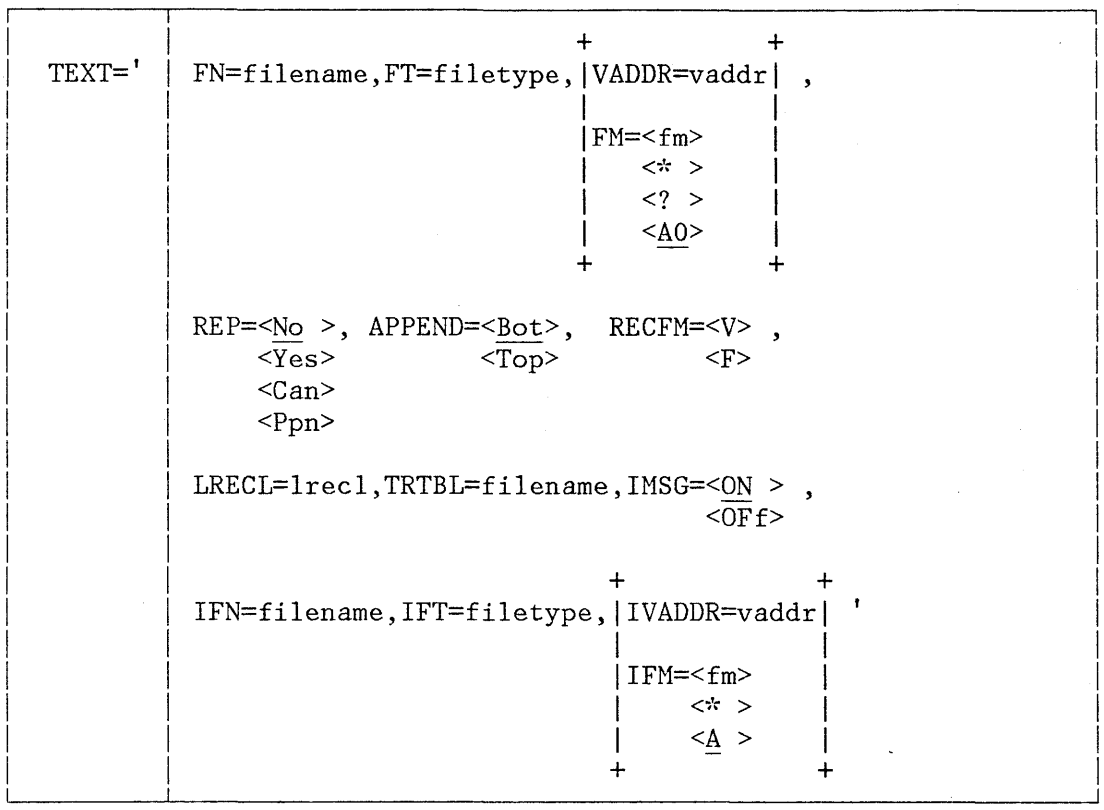
Usage Notes

The following COS DISPOSE statement parameters are supported by CRDISK:

DF
: dataset format; must be CB (character blocked), BB (binary blocked), or TR (transparent). The default is CB.

TEXT
: text field. This provides the information needed by VM to receive the dataset.

The format of the COS DISPOSE TEXT field as supported by CRDISK is as follows:



where:

FN — specifies the filename of the CMS file that is to be modified or created. The default filename is the same as the SDN (Staged Dataset Name) specified in the DISPOSE statement.

FT — specifies the filetype of the CMS file that is to be modified or created. The default value of FILE is used if FT is not specified.

VADDR — specifies the virtual address of the CMS minidisk that contains or will contain the file to be modified or created. A CMS filemode is assigned for the minidisk if it is not already accessed. This filemode is displayed at your CMS console and sent if requested (IMSG=ON) to your COS job log. A filemode extension of 0 is used in all cases when the VADDR parameter is specified.

Specifying a CMS system disk (190) causes the dataset transfer to be cancelled.

CRDISK does not check to ensure that the output disk has enough room for the COS dataset and either the original file or the input file. The transfer is postponed if the disk is full.

FM — specifies the filemode of the CMS file that is to be modified or created. The possible values and their effects are:

fm specifies the filemode of an already accessed minidisk. The default value of A0 is used if neither FM nor ADDR is specified. CMS filemode extensions can be denoted using the FM=fm method.

Specifying a CMS system disk (S) causes the dataset transfer to be cancelled.

* specifies the filemode is to be the first read/write disk which contains the specified file. This filemode will be displayed at your CMS console and sent if requested (IMSG=ON) to your COS job.

The transfer is postponed if the selected disk is read/only. This parameter's value will be changed to "?" if the file does not exist. Filemode extensions cannot be denoted using this method. A filemode extension of 0 is used when FM=* is specified.

? specifies that the largest read/write CMS disk is to be used. This filemode will be displayed at your CMS console and sent if requested (IMSG=ON) to your COS job.

Filemode extensions cannot be denoted using this method. A filemode extension of 0 is used when FM=? is specified.

CMS secured files (filemode extension 0) can be acquired or fetched by using the WPW TEXT field parameter.

REP specifies whether the output file should be replaced or appended. The possible values and their effects are:

NO The COS dataset is appended to the output file if it exists.

YES The output file, if it exists, is deleted and replaced by the COS dataset. The APPEND parameter is ignored unless input file processing is being requested.

CAN The COS dispose is cancelled if the output file exists. The APPEND parameter is ignored unless input file processing is being requested.

PPN The COS dispose is postponed if the output file exists. The APPEND parameter is ignored unless input file processing is being requested.

The default is NO. A CMS return code will be given by CRDISK if the dataset is cancelled or postponed because of REP=C or REP=P.

APPEND specifies whether the COS dataset will be appended to the top or bottom of the input or output file. The default is BOT. The REP value must be specified as NO unless input file processing is also being requested.

RECFM specifies the record format of the output file. This parameter is used only when CRDISK must create the output file. The default value is either V (Variable) or the existing file's (input or output) record format.

A value of F (Fixed) provides significant performance improvements over RECFM=V. The COS file must be logically fixed if RECFM=F is to be useful.

LRECL specifies the maximum or absolute logical record length (columns) of the output file. LRECL denotes an absolute length when RECFM=F, and the maximum length when RECFM=V. CMS resets the logical record length to the longest record length or up to the specified LRECL when RECFM=V.

The default value when appending or using an input file is the original file's LRECL. The default value for a new file is the maximum segment size the VM station supports. This value is currently 61,440 bytes (7,680 Cray words).

LRECL should be specified when the record format is fixed (RECFM=F). Specifying the LRECL reduces the file's size by eliminating unnecessary columns within the file.

The transfer is cancelled if a record is longer than 61440 bytes and postponed if a record is longer than the file's LRECL.

TRTBL (valid only if DF=CB is specified.) Specifies the filename of the CMS file used as a translation table. The entire translation table must be a single binary record contained within this file. You can specify the filename, but the other file characteristics must be as follows:

```
Filetype:  TRTBL
Filemode:  *
LRECL   :  256
RECFM   :  F
```

The default filename is TRASEB. The default file is loaded during linkage editing, not at execuion time.

The following translation table files are supplied with the station:

```
TRASEB TRTBL
TREBAS TRTBL
TREBASNU TRTBL
TRLOUPEB TRTBL
TRASEBUP TRTBL
TRASEBQS TRTBL
TREBASQS TRTBL
```

The transfer is postponed if the file specified by TRTBL is not found.

Descriptions of each of these tables can be found in the IBM VM Station Messages and Codes manual, SI-0165.

IMSG specifies whether or not informational messages should be sent to the job's console log. The default value is ON.

The following parameters (IFN, IFT, IFM, and IVADDR) let you append to a different file than the output file (FN, FT, FM/VADDR). One example of when this would be useful is when the source file is on a read/only disk or a small read/write disk.

IFN specifies the filename of the CMS file the COS dataset will be appended to. Specifying IFN forces the parameter REP to YES. There is no default value for IFN. If you specify IFN, you must also specify IFT.

IFT specifies the filetype of the CMS file the COS dataset will be appended to. Specifying IFT forces the parameter REP to YES. There is no default value for IFT. The IFT parameter is ignored if the IFN has not been specified.

IVADDR specifies the virtual address where the CMS file specified by IFN and IFT resides. The default is 191. Specifying IVADDR forces the parameter REP to YES. This parameter is ignored if either the IFN or IFT has not been specified. A CMS filemode is assigned for the minidisk if it is not already accessed. This filemode will be displayed at your CMS console and sent if requested (IMSG=ON) to your COS job.

IFM specifies the filemode of the CMS file the COS dataset will be appended to. The default is A. Specifying IFM forces the parameter REP to YES. The IFM parameter is ignored if either the IFN or IFT has not been specified. The possible values for IFM and their effects are:

fm specifies the filemode of an already accessed minidisk. The default value of A will be used if neither IFM nor IADDR is specified.

* specifies the filemode is to be the first disk that contains the specified file. This filemode is displayed at your CMS console and sent if requested (IMSG=ON) to your COS job.

Usage Note

The station inserts end-of-file records into the CMS file to indicate that multiple logical files exist within the COS dataset being disposed (if DF=CB or BB). The final /EOF /EOD sequence is not inserted into the file. For example:

Original file:

```
Logical file one
/EOF
Logical file two
/EOF
Logical file three
/EOF
/EOD
-----End of CMS file-----
```

CRDISK output file:

```
Logical file one
/EOF
Logical file two
/EOF
Logical file three
-----End of CMS file-----
```

The /EOF is written in EBCDIC.

3.4 CRGRAPH

Use the CRGRAPH command to receive COS datasets that are disposed with DC=IT to a graphic device attached to your CMS machine. Please note that CRGRAPH can require memory in excess of 1664K. The actual amount depends on usage.

Format

```
CRGRAPH   <DISK  fn  [ ft  [ fm ] ] >  [(STAT vmsta [)]]
          <CONSOLE                  >
          <CONPCI                   >
          <CONPCIN                  >
          <PCI1071                  >
          <AUSCOM                   >
          <AUSWAP                   >
          <TTY                      >
```

where:

DISK — routes the graphic data to the CMS disk file specified by "fn ft fm". The file can be displayed later by CRDGRAPH.

fn — is the filename of the file to be created or updated.

ft — is the filetype of the file to be created or updated. The default is TRANSPAR.

fm — is the filemode of the file to be created or updated. The default is A1.

CONSOLE — routes the graphic data through the virtual machine's console.

CONPCI — routes the graphic data through the virtual machine's console, which is connected to the system by a PCI1071 protocol converter. (The PCI1071 must have the graphics feature installed.) The terminal will be cleared prior to each start I/O operation (SIO).

CONPCIN — routes the graphic data through the virtual machine's console, which is connected to the system by a PCI1071 protocol converter. (The PCI1071 must have the graphics feature installed.) The terminal will not be cleared prior to each SIO.

PCI1071 — routes the graphic data through a PCI1071 protocol converter. The PCI1071 must have the graphics feature installed and must be CP DIALed to your userid. The device's address is X'E0'.

AUSCOM — routes the graphic data through an AUSCOM control unit. The device's address is X'110'. This device must be attached,

not dialed, to your virtual machine. Byte swapping will NOT occur.

AUSWAP routes the graphic data through an AUSCOM control unit. The device's address is X'110'. This device must be attached, not dialed, to your virtual machine. Byte swapping WILL occur.

TTY routes the graphic data through an asynchronous communication path. The device's address is X'F0'. It must be CP DIALed to your userid.

STAT vmsta directs the CRGRAPH command to connect to an alternate VM station userid.

Usage Notes

1. The following COS DISPOSE statement parameters are supported by CRGRAPH:

   DF specifies the data format of the dataset; must be either TR (transparent, or unblocked binary data) or BB (blocked binary data). The default is BB.

   TEXT specifies the TEXT field parameters. This field is not required by CRGRAPH.

2. The COS application may not use logical or physical blocks greater than the following:

Connection Method	Length in Bytes
CONSOLE	1,500
CONPCI and CONPCIN	3,300
PCI1071	3,300
AUSCOM and AUSWAP	32,000
TTY	61,440

   For DISK, there is no limit on length unless the data is to be displayed later by CRDGRAPH. CRDGRAPH's limits are the same as CRGRAPH's for equivalent connection methods.

3.5 CRINT

Use the VM station CRINT command to initiate an interactive session with COS. After logging on, you can enter JCL and data directly to COS, as well as submit the JCL and data from a CMS file. You can also issue subcommands to control your interactive job. CRINT subcommands are covered in section 4.

Format

```
CRINT   [logonid [logonun]] [(options... [)]]

        options:
                      +                 +
        [STAT vmsta]  |NOPROF           |
                      |PROF [fn [ft [fm]]]|
                      +                 +
```

where:

logonid specifies the interactive user job name. The default is your CMS userid.

logonun specifies the interactive user number. The default is your CMS userid.

STAT vmsta specifies the CMS ID of an alternate VM station.

NOPROF suppresses the submission of your interactive profile.

PROF [fn [ft [fm]]]
submits the specified file as an alternate profile. The default interactive profile is CRINT $PROFILE *.

Usage Notes

1. You can include valid VM station commands or COS JCL statements in the profile file. You can also stack them in the program stack from an EXEC.

2. If you do not specify the job name on the CRINT command line, or if nothing has been put in the program stack from an EXEC, you will be asked to enter the /LOGON command.

   If the first statement in the program stack is a /LOGON command, it is processed and sent to COS. Once the first prompt is received from COS, CRINT reads and sends the interactive profile file (unless you have specified NOPROF), followed by any remaining lines in the program stack.

3. CRINT subcommands must be prefixed with a slash (/), unless you have used the /PREFIX command to specify another prefix character.

4. If possible, use the /LOGOFF HOLD command, rather than the /QUIT command, to suspend your COS job and return to CMS.

5. The station supports sending transparent (graphic) data to a front-end terminal. Use DF=TR on the COS ASSIGN statement to indicate transparent data. For example:

   ```
   ASSIGN,DN=MAPDATA,DT=CRT,DF=TR.
   ```

   If you specify DF=TR, the station does not expand blanks or add carriage returns to data written to the terminal.

6. A 327X-type console can be cleared by using the /TRANSOUT CONCLR command. This clears the 327X screen whenever the hexadecimal characters X'1A1BFF' are received in transparent mode. (This sequence will not clear the screen if a MORE... or HOLDING status already exists on your screen.)

3.6 CRSEND

The VM station CRSEND command sends a COS job file or COS dataset from any accessed disk to the Cray system.. CRSEND can transmit character blocked, binary blocked, or transparent datasets to COS. Record lengths of up to 64K bytes can be sent. CRSEND uses MVS NETDATA format to punch the files to the station.

Format

CRSEND	fn [ft [fm]] [(options... [)]] options: [STAT vmstat] [NODE nodeid] [NONET|NET] [DC IN|ST] [ID uid] [DF <CB|BB|TR>] [PDN pdn] [ED ed] [US us] [RT rt] [R readcw] [W writecw] [M maintcw] [AC account] [APW apw] [UPW upw] [PAM mode] [LOG|NOLOG] [PROF fn [ft [fm]]|NOPROF]

where:

fn fm ft is the CMS file identifier of the file or dataset to be sent. The default filetype is JOB; the default filemode is A.

Options:

STAT vmstat directs the job to the VM station with the CMS userid "vmstat". The default VM station ID is as set in the file STATION IDFILE (which can be changed by the CRCHOOSE command).

NODE nodeid directs the job to a VM station residing on the specified processor. If the nodeid is different from the one CRSEND is executing on, the file is sent through RSCS. The default nodeid is as set in the file STATION IDFILE by the station command CRCHOOSE.

NONET|NET specifies the front-end format used to send output back from the COS job:

NET sends output files in MVS NETDATA format. Record lengths can be up to 64K.

NONET default; sends output files in normal punch or print file format. Record lengths can be up to 133 bytes.

DC IN|ST specifies the COS disposition code for the dataset:

IN execute as a COS job (default)
ST save as a COS permanent dataset

If you specify DC=ST, the station generates a COS job (using the filename for the jobname) to save the file as a COS permanent dataset.

ID uid (valid only when DC=ST is specified.) Additional COS user identification. You can specify up to 8 characters for "uid".

DF df (valid only when DC=ST is specified.) Specifies the dataset transfer format. The possible values for are:

CB Character blocked. The front-end system blocks the dataset before staging and performs character conversion to 8-bit ASCII.

BB Binary blocked. The front-end system blocks the dataset before staging but does not perform character conversion.

TR Transparent. The front-end system performs no blocking and no character conversion.

The default is CB. DF=TR is valid only if the COS UNBLOCK utility is available at your site.

PDN pdn (valid only when DC=ST is specified.) Specifies the permanent dataset name of the COS dataset. Can be from 1 to 15 characters. If not specified, the CMS filename is used.

ED ed (valid only if DC=ST.) The edition number to be given to the dataset on COS. The value of "ed" must be from 1 to 4095. The default is one of the following:

- 1, if a permanent dataset with the same PDN and ID does not currently exist
- The current highest edition number of that dataset plus 1, if a permanent dataset with the specified PDN and ID does exist

US us (valid only when DC=ST is specified.) The 1- to 15-character COS user number assigned to you (or to the user under whose account the dataset is created). This number, which is optional, identifies the user for system access purposes. The user number becomes the ownership ID of the PDN saved.

RT rt (valid only if DC=ST.) The retention period, or number of days a permanent dataset is to be retained by the system. The value must be from 0 through 4095. The default is an installation-defined parameter.

R readcw
W writecw
M maintcw (valid only if DC=ST). The READ, WRITE, and maintenance access control words associated with the dataset on COS. Each

can be up to 8 alphanumeric characters. If not specified, nulls are used.

AC account (valid only when DC=ST is specified.) Identifies the COS user whose account the dataset will be created under. Can be up to 15 alphanumeric characters. This parameter may be required at your site.

APW apw (valid only when DC=ST is specified.) Specifies the COS account password. Can be up to 15 alphanumeric characters. You must specify this password if your installation has made passwords mandatory.

UPW upw (valid only when DC=ST is specified.) Specifies the COS user password, which can be up to 15 alphanumeric characters. You must specify this password if your installation has made security checking mandatory.

PAM mode (valid only if DC=ST.) Specifies one of the following public access modes:

N	No public access allowed
E	Execute-only
R	Read-only
W	Write-only
M	Maintenance-only

The default is set by your installation.

If multiple modes of access are to be allowed, you must specify them in the form PAM=mode:mode:mode... (for example, PAM=R:W).

LOG|NOLOG (valid only when DC=ST is specified.) Controls the disposition of the $OUT job logfile produced by the station-generated COS save job. LOG is default; it specifies that the $OUT file is sent to your virtual reader. NOLOG specifies that the $OUT file is treated as a scratch dataset.

PROF fn [ft [fm]]
(valid only when DC=ST is specified.) Specifies a profile containing the default values for the above dataset save options. The default fileid is CRSEND $PROFILE A. Options specified in the profile file are overridden by those specified in the CRSEND command line. PROF, if used, must be the last parameter on the command line if you want to accept the default filetype or filemode.

NOPROF specifies that no profile file is to be searched for. The default is PROF.

Usage Notes

1. The $OUT job log file is always sent to your virtual reader when DC=ST is coded.

2. The $OUT job file is sent to your virtual reader by default when DC=IT is coded. To override this, code a DISPOSE statement with "DN=$OUT,DEFER".

3. The VM station supports the automatic routing of CP TAG information in the station slot. To associate a tag string with a COS job and subsequent dataset disposes, issue the CP TAG DEV PUN command before issuing the CRSEND command. Up to 136 characters can be routed to COS through the station slot.

   For jobs routed to the VM station from remote locations through RSCS, the station automatically passes the 8-byte node and user IDs associated with the job file to COS through the station slot. This causes automatic RSCS routing to the originating location of any datasets disposed from the job.

4. It is recommended that CRSEND be downloaded to any remote VM processors for use by CMS users wishing to send files to COS from remote locations.

5. The TSO/E TRANSMIT command, with the MESSAGE option, can be used from a remote MVS processor to perform the same functions as the CRSEND command.

Examples

1. The following command submits a CMS file named POULENC JOB to COS:

   ```
   CRSEND POULENC
   ```

   If you do not specify the DC option, CRSEND assumes the file is a COS job (DC=IN).

2. This CRSEND command stages the CMS file DATAX DAT to COS to be saved as a permanent dataset called MYFILE:

   ```
   CRSEND DATAX DAT (DC ST PDN MYFILE AC 999999 UPW MYPASS US 9999)
   ```

   Specifying a DC of ST indicates that DATAX DAT is not a COS job but a file to be staged to COS. The station creates a COS job to perform the save and displays this message:

   ```
   MSG FROM STATION:  CRIRDR002I Dataset DATAX staged to the Cray
   ```

   If you were to issue the CRSTAT command at this point, you would see a job named DATAX listed in the status display.

   Once the save is successful, you receive the job log file that contains the actual COS job created to perform the operation. You can use the CMS commands PEEK and RECEIVE to view this file and receive it onto disk, respectively.

3.7 CRSTAT

Use the VM station CRSTAT command to check or change the status of jobs executing on COS, and to display a variety of COS and VM station status information.

The subcommands available while you are in a CRSTAT session are presented in section 5.

Format

```
CRSTAT  [subcommand] [(options...[])]

        options:
                      +       +
        [STAT vmsta] |REF [r]| [ERASE] [FILE [fn]] [NOMSG]
                     |NOREF  |
                      +       +
```

where:

subcommand is any valid operator or display subcommand, except for the full-screen control subcommands. STATUS is the default.

STAT vmsta is the CMS userid of the VM station you wish to query.

REF [r] specifies screen refresh every "r" seconds. The default for 3270 graphics terminals is r=5. The default for remote 3270 terminals is r=20. This option is invalid for TTY terminals.

NOREF specifies no screen refresh. This is the default for TTY terminals.

ERASE specifies the screen is to be erased prior to refresh.

FILE [fn] directs the output (in NOREF format) to the file specified. If the file does not exist it will be created; otherwise, the output will be appended to the existing file. The filename (fn) must be specified unless FILE is the last or only option. The default filename is CRSTAT. The filetype is always FILE and the filemode is always A.

All error messages are directed to the console.

NOMSG specifies that messages from CP are not captured and displayed on the status display command lines. For full-screen terminals, the default is to capture incoming messages from CP MSG and CP WNG, as well as any other CP response messages, and display them in the three display screen scroll lines.

3.8 CRSUBMIT

The VM station CRSUBMIT command submits a COS job file to the VM station and COS through your CMS virtual punch.

Format

CRSUBMIT	fn [ft [fm]] [(STAT vmsta [)]]

where:

fn ft fm — represent the standard CMS file identifiers. The default filetype is JOB and the default filemode is A1.

STAT vmsta — directs the job to an alternate VM station. The value specified for "vmsta" must be the VM station's CMS userid. The default VM station ID is as set in the file STATION IDFILE by the station command CRCHOOSE.

Usage Notes

1. The $OUT job file is sent to your virtual reader by default. To override this, code a DISPOSE statement with "DN=$OUT,DEFER".

2. The VM station supports the automatic routing of CP TAG information in the station slot. To associate a tag string with a COS job and subsequent dataset disposes, issue the CP TAG DEV PUN COMMAND before issuing the CRSUBMIT command. Up to 136 characters can be routed to COS through the station slot.

   For jobs routed to the VM station from remote locations through RSCS, the station automatically passes the node and user IDs associated with the job file to COS through the station slot. This causes automatic RSCS routing to the originating location of any datasets disposed from the job.

Example

Assume the CMS file TOCRAY JOB contains this text:

```
JOB,JN=Faure,US=1845.
ACCOUNT,AC=COSUSER,UPW=PASS.
*.
*. GET A FILE FROM VM
*.
ACQUIRE,DN=REQUIEM,TEXT='FN=REQUIEM,FT=MASS'.
EXIT.
```

The following lines show the CRSUBMIT command used to submit TOCRAY JOB and the response from the station:

```
crsubmit tocray
R; T=0.02/0.05 16:22:27
 16:22:27

 MSG FROM STATION:  CRIRDR002I Job Faure staged to the Cray

PRT FILE 3999 FROM STATION COPY 001 NOHOLD
```

At this point, you can use the CMS command PEEK to examine the job log file that is returned to your reader. To receive the log file to disk, use either the CMS RECEIVE command or issue RECEIVE while using PEEK. The file is named FAURE LISTING by default.

4 CRINT SUBCOMMANDS

This section describes the subcommands that are valid from within CRINT. The following table is a functional summary:

Subcommand	Description
LOGON	Completes the interactive logon process
LOGOFF	Ends the interactive session
QUIT	Ends the session but leaves your COS job running
SUSPEND	Suspends your interactive COS job
RESUME	Resumes a suspended COS job
STATUS	Displays the current status of your interactive job
ABORT	Terminates your interactive COS job step
ATTN	Sends an attention interrupt to your interactive job
EOF	Sends an end-of-file record control word to COS
LS	Sets the terminal line size
CASE	Turns mixed or uppercase mode on
PREFIX	Changes the subcommand prefix from the default (/)
HT	Equivalent to the CMS Halt Type command
RT	Equivalent to the CMS Resume Type command
HELP	Calls the CMS HELP facility
INPUT	Submits a command or data file to COS
FSTOP	Stops the processing of any current INPUT file
*	Indicates a comment line
SAVE	Saves your typed input in a CMS file
ENDSAVE	Terminates a SAVE subcommand
PURSAVE	Erases the contents of the current SAVE file but continues to save your typed input
CLOSAVE	Closes the current SAVE file and opens a new one
TRANSOUT	Sets the destination of transparent data (usually graphic data)

Table 2. CRINT Subcommands

The slash (/) is the default character used as a prefix for all CRINT subcommands. You can override it with the /PREFIX subcommand.

The following subsections present the CRINT subcommands in alphabetical order.

4.1 ABORT

The CRINT subcommand ABORT interrupts the current interactive COS job step and allows you to enter further COS JCL statements. It is similar in function to the CMS HX (Halt execution) command.

Format

```
/ABORT
```

4.2 ATTN

The CRINT subcommand ATTN interrupts the current interactive COS job step and enters reprieve processing (if any). If no reprieve proessing is specified, ATTN has the same effect as ABORT.

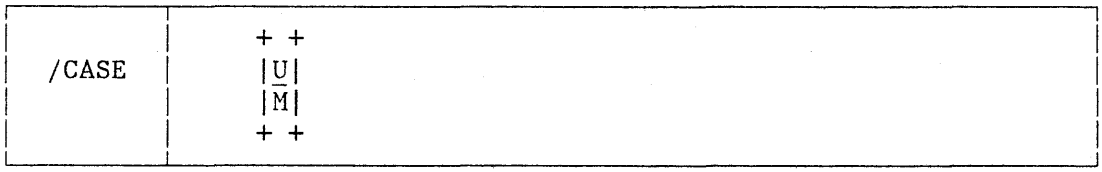
Format

```
/ATTN
```

4.3 CASE

The CRINT subcommand CASE sets either uppercase or mixed-case mode for all input to your interactive job.

Format



where:

U selects uppercase mode (default).

M selects mixed-case mode.

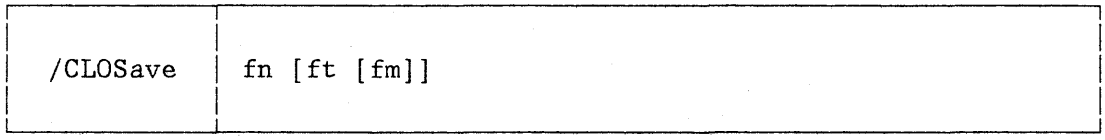
Usage Note

If you enter /CASE with no parameter, CRINT displays the current case setting.

4.4 CLOSAVE

The CRINT subcommand CLOSAVE closes the current /SAVE file and opens a new one with the file ID you specify.

Format



where:

fn ft fm specifies the new /SAVE file. The default filetype is INPUT and the default filemode is A1.

Usage Note

The related subcommand PURSAVE erases the contents of the current /SAVE file but writes any subsequent input to it.

4.5 /* (Comment Lines)

A slash followed by an asterisk (/*) indicates a comment line to CRINT. Any line beginning with these characters is displayed at your terminal and not sent to COS.

The slash is the default CRINT subcommand prefix. If you have changed the prefix (with the /PREFIX subcommand), comment lines must begin with the new prefix character followed by an asterisk.

4.6 ENDSAVE

The ENDSAVE subcommand terminates the SAVE subcommand. The SAVE file is closed and subsequent input is not saved.

Format

```
/ENDSave
```

4.7 EOF

The EOF subcommand sends an end-of-file mark to COS.

Format

```
/EOF
```

4.8 FSTOP

The FSTOP subcommand stops the processing of any file you have submitted with the /INPUT subcommand.

Format

```
/FSTOP
```

4.9 HELP

The CRINT subcommand HELP calls the CMS HELP facility.

Format

/HELP	[component [command]]

where:

component — is any one of the main system help files (CP, CMS STATION, COS, etc.). The default component is COS.

command — specifies an entry subordinate to the component you select. The default command is MENU.

See subsection 6.1 for a complete description of options.

Examples

1. /HELP CMS

   Displays the CMS help menu.

2. /HELP CRINT TRANSOUT

   Displays help on the CRINT subcommand TRANSOUT.

3. /HELP CP QUERY

   Displays CP help on the QUERY command.

4. /HELP MSG CCRI00DE

   Displays help on the station message CRICRI00DE. (To receive help on station messages, abbreviate the first CRI to a single C.)

4.10 HT

The HT (Halt Type) subcommand performs the same function as the CMS immediate command by the same name: it suppresses all terminal output generated by the program that is currently executing.

Format

```
/HT
```

Usage Note

To resume typing after /HT, enter either /RT (Resume Type) or any other command.

4.11 INPUT

The INPUT subcommand transfers a CMS file to the station and/or COS, one record at a time.

Format

```
/INPUT  [fn [ft [fm]]]
```

where:

fn ft fm specifies the file to be transferred. The default file ID is CRINT INPUT *.

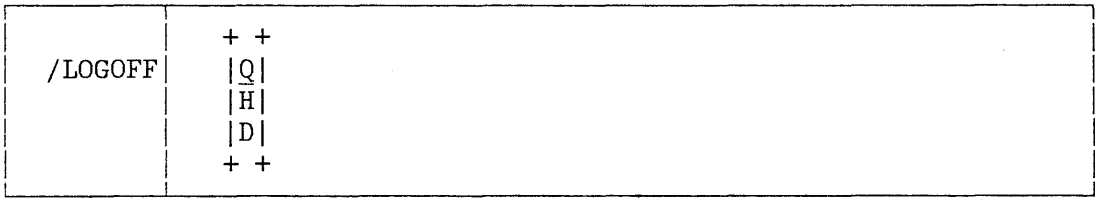
Usage Note

The input file can contain any valid station commands or COS JCL statements, including other /INPUT statements. The station does not, however, allow nested calls for the same file.

4.12 LOGOFF

The LOGOFF subcommand terminates the interactive session.

Format



where:

Q (QUIT); terminates your interactive job on COS. This is the default.

H (HOLD); disconnects the user terminal from its COS job. Job execution continues. The job is suspended only if an output threshold is reached or if input from the terminal is needed.

D (DISCONNECT); the same as H.

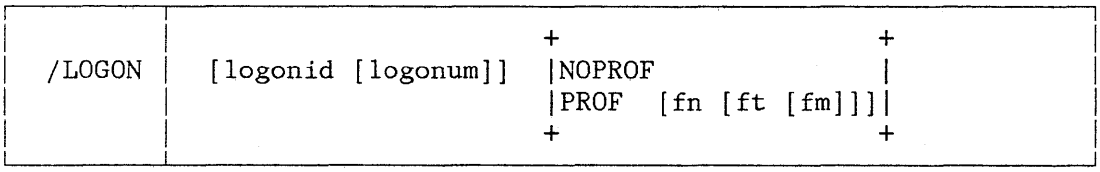
Usage Note

Use /LOGOFF H instead of /QUIT if the VM station link to COS is active.

4.13 LOGON

The LOGON subcommand completes the interactive logon process you begin by entering "CRINT".

Format



where:

logonid is the interactive job name. The default is your CMS userid.

logonum specifies the interactive number. The default is SYSTEM unless overridden by the US parameter on the ACCOUNT control statement.

NOPROF suppresses the submission of the interactive profile.

PROF [fn [ft [fm]]
submits the specified disk file as the interactive profile. The default file specification is CRINT $PROFILE *.

Usage Notes

1. The optional parameters are the same as those for the CRINT command. If you specified them in the CRINT command line, you cannot specify them again here.

2. Use "/LOGON logonid NOPROF" to relog on to an interactive session ended by /QUIT.

4.14 LS

The LS subcommand sets the terminal line size.

Format

/LS	[ls]

where:

ls specifies the number of characters per line. Acceptable values are from 40 through 255. The default for 3270 Model 5 terminals is 132 characters; the default for all other terminals is 80 characters. If you enter "/LS" with no parameter, CRINT displays the current terminal line size.

Usage Note

CRINT executes the CP TERMINAL LINESIZE command to reflect the change.

4.15 PREFIX

The PREFIX subcommand changes the prefix character you use when entering CRINT subcommands.

Format

/PREFIX	prefix

where:

prefix is a single character that must precede all subsequent subcommands. The default prefix is the slash (/).

4.16 PURSAVE

The PURSAVE subcommand erases the contents of the current /SAVE file but continues to save subsequent input.

Format

```
/PURSave
```

Usage Note

The related subcommand CLOSAVE closes the current /SAVE file and continues to save input in another file you specify.

4.17 QUIT

The QUIT subcommand terminates the interactive session (returning you to CMS) but leaves your COS job running.

Format

```
/QUIT
```

Usage Note

/QUIT does not send a logoff LCP to COS. If possible, use /LOGOFF H instead.

4.18 RESUME

The RESUME subcommand resumes your interactive COS job that has been suspended.

Format

```
/RESUME
```

4.19 RT

The RT (Resume Type) subcommand performs the same function as the CMS immediate command by the same name: it lets you resume typing after you have entered an /HT (Halt Type) subcommand.

Format

```
/RT
```

4.20 SAVE

The SAVE subcommand saves your typed input by sending it to the file you specify.

Format

/SAVE	fn [ft [fm]]

where:

fn ft fm names the file to be saved. The default filetype is INPUT and the default filemode is A1.

Usage Notes

1. This subcommand is a keystroke saver in that the resulting file can be used as COS input through the /INPUT subcommand.

2. Certain input is excluded from the saved file. Any ENDSAVE, LOGOFF, QUIT, PURSAVE, and CLOSAVE commands you issue during the interactive session do not appear in the file. Also, the contents of any file you supply with the /INPUT subcommand are not included in the /SAVE file.

3. The /ENDSAVE subcommand closes the saved file. Subsequent input is not saved.

4.21 STATUS

The STATUS subcommand displays the current status of your interactive job, as well as the last interactive reply from COS.

Format

/STATUS

4.22 SUSPEND

The SUSPEND subcommand suspends the current interactive COS job.

Format

```
/SUSPEND
```

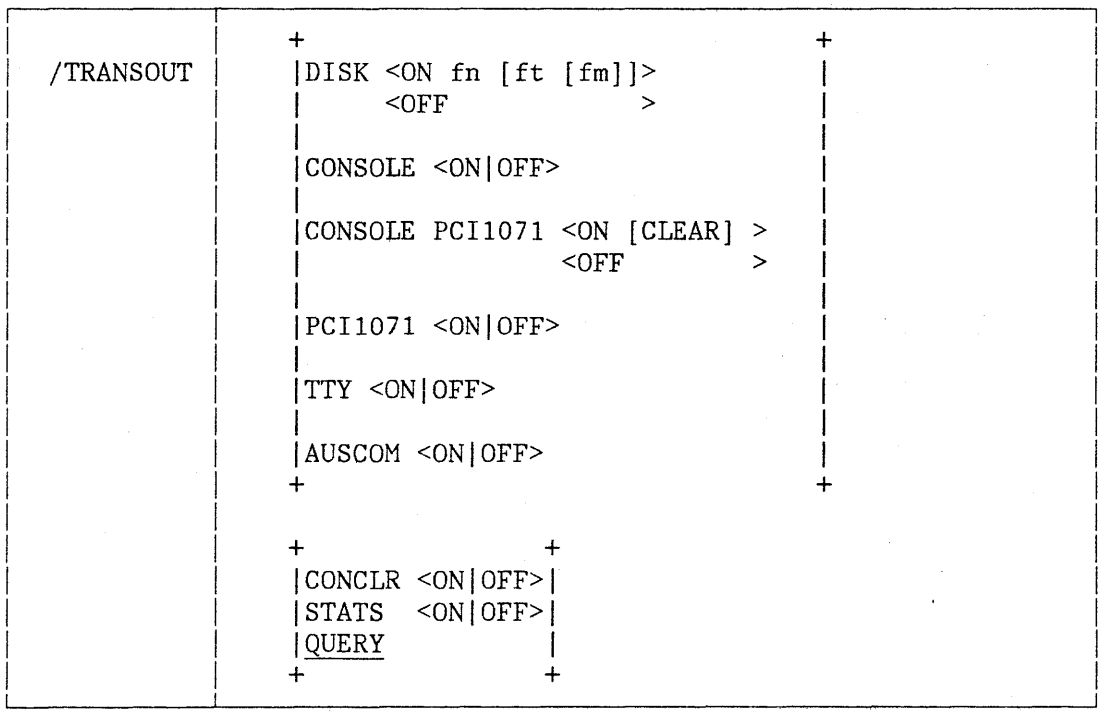
Usage Note

To resume a suspended job, use the /RESUME subcommand.

4.23 TRANSOUT

The TRANSOUT subcommand controls the destination of transparent graphics data. The data can be written to a disk file, to your console, to an alternate graphic device, or to all three.

Format



where:

DISK stores the data in the CMS disk file specified by "fn ft fm". The default filetype is FILE and the default filemode is *.

CONSOLE routes the graphic data to the virtual machine's console.

CLEAR is used with CONSOLE PCI1071 to clear the screen prior to each write operation. The default is NOCLEAR.

PCI1071 routes the graphic data through a PCI1071 protocol converter. The PCI1071 must have the graphics feature installed, and must be CP DIALed to your userid. The device's address is X'E0'.

TTY routes the graphic data through an asynchronous communication path. The device's address is X'F0'. It must be CP DIALed to your userid.

AUSCOM routes the graphic data through an AUSCOM control unit. The device's address is X'110'. This device must be attached, not dialed, to your virtual machine. Byte swapping will not occur.

STATS requests that the number of bytes sent to the output device be displayed after each buffer.

CONCLR specifies that a 327x-type console screen is to be cleared whenever the characters X'1A1BFF' are received in transparent mode.

ON/OFF enable or disable the corresponding feature.

QUERY returns the current TRANSOUT status.

Usage Notes

1. Entering /TRANSOUT with no parameters is equivalent to entering /TRANSOUT QUERY.

2. Transparent data must be indicated by DF=TR on the COS ASSIGN statement.

3. The CONCLR parameter does not specify a destination. Instead, it gives a COS program the ability to clear an IBM 327X screen. When CONCLR is set ON, the hexadecimal sequence X'1A1BFF' causes CRINT to clear your virtual console. The screen will not clear if a 'MORE...' or 'HOLDING' status are currently being displayed. The sequence must start in the first byte.

4. The COS application may not use logical or physical blocks greater than the following:

Connection Method	Length in Bytes
CONSOLE	1,500
CONPCI and CONPCIN	3,300
PCI1071	3,300
AUSCOM and AUSWAP	32,000
TTY	61,440

   For DISK, there is no limit on length unless the data is to be displayed later by CRDGRAPH. CRDGRAPH's limits are the same as /TRANSOUT's for equivalent connection methods.

5 CRSTAT SUBCOMMANDS

This section describes the subcommands you can issue after initiating a CRSTAT session. The subcommands can be divided into five functional categories:

- Display control
- Job control
- General user status displays
- VM station operator displays and functions
- COS master operator functions

The table below summarizes the display control subcommands:

Subcommand	Function
BACKWARD	Scrolls the display back to the previous frame
-	Same as BACKWARD
END	Ends the CRSTAT session
FORWARD	Scrolls the display ahead to the next frame
+	Same as FORWARD
QUIT	Ends the display session
REFRESH	Sets the rate at which the status display is updated
SCROLL	Sets automatic frame scrolling of the display on or off; also controls the scrolling rate
RETURN	Returns to the previous display from HELP
TOP	Scrolls the display back to the first frame
HELP	Gives a brief description of all CRSTAT subcommands
?	Same as HELP

Table 3. CRSTAT Display Control Subcommands

The following table lists the subcommands you can use to control COS jobs. The particular jobs you can affect depends on your privilege class.

Subcommand	Function
DROP	Stops a COS job or dataset transfer but saves the associated output dataset
ENTER	Changes the time limit, priority, station ID, or class of a particular COS job
KILL	Stops a job or dataset transfer, deleting the associated output dataset
RERUN	Returns a COS job to the input queue for rerunning
SUBMIT	Submits a CMS file to COS as a COS job
SWITCH	Sets or clears a toggle sense switch

Table 4. CRSTAT Job Control Subcommands

The functional breakdown of the remaining subcommands is determined by your system administrator when the station is configured. The station sets default privilege classes for these subcommands; they may be different at your site. For example, general users may not be able to issue JSTAT even though it is listed here as a general user subcommand.

The table below lists the general user subcommands that result in a variety of status displays:

Subcommand	Function
DATASET	Displays the status of a specific COS dataset
JOB	Displays the status of a particular COS job, plus the last logfile message
JSTAT	Displays detailed information on a particular COS job, including its CPU use and individual tasks
LINK	Displays the status of the station's logical link to COS
RSTAT	Displays the status of defined COS generic resources
STALEVEL	Displays release level and logon status
STATCLAS	Displays the status of COS job classes
STATION	Displays the status of the VM station
STATO	Displays the status of the COS jobs that have originated from your userid
STATUS	Displays the status of all COS jobs
STOR	Displays the status of COS disks, including the amount of available storage
TRTABLE	Displays a list of the available translation tables

Table 5. CRSTAT Status Display Subcommands

The next group of subcommands require station operator privileges by default. They are available through the CRSTATOP command, which is a privileged version of CRSTAT. The IBM VM Station Installation and Maintenance manual describes these subcommands; they are presented here as well since the privilege requirements may be different at your site.

Subcommand	Function
CANCEL	Cancels a dataset transfer on a specified stream
CP	Issues a CP command at the station virtual machine
INTERACT	Enables, disables, or restricts interactive logons
LOGOFF	Logs the VM station off from COS
LOGON	Logs the VM station on to COS
NSCSTAT	Displays statistics for the NSC HYPERchannel adapter
OPERATOR	Specifies the VM terminal ID of the COS master operator
STALEVEL	Displays release level, logon and relog status, and a summary of transfer statistics
STAMAP	Displays the station module load map
STASEC	Displays or changes secondary console status
STASTAT	Sets the reporting of dataset transfer statistics on the station console log on or off
STASTOR	Displays the status of the station's storage queues
STDEVICE	Allows individual virtual devices, and classes of virtual devices, to be turned on or off
STREAM	Changes the number of available input streams to VM, output streams from VM, and total active streams
TRACE	Controls internal station event and LCP tracing
URBUFFER	Dynamically changes the size of the unit record I/O buffer used for chaining print and punch dataset disposes

Table 6. VM Station Operator Subcommands

The last group of subcommands can be used only by a COS master operator. Like the station operator subcommands, they are available only through CRSTATOP.

The OPERATOR subcommand must be issued to designate a COS master operator.

Subcommand	Function
CHANNEL	Turns a COS channel on or off
CLASS	Turns particular job classes on or off
DEVICE	Sets the status of a particular COS device on or off
LIMIT	Sets the maximum number of COS jobs that can be active at one time
RECOVER	Allows the scheduling of recovered rolled jobs after a system shutdown
RESUME	Resumes the processing of one or all COS jobs
ROUTE	Changes the front-end destination of datasets in the output queue
SHUTDOWN	Suspends and rolls out all executing jobs, and prohibits any new jobs from executing
SUSPEND	Stops the processing of one or all COS jobs

Table 7. Master Operator Subcommands

The following subsections present the CRSTAT subcommands in alphabetical order. Privilege classes are listed for some of them; please keep in mind that these requirements are defaults and can be changed by the system administrator.

5.1 BACKWARD (-)

BACKWARD scrolls the display backward to the previous frame.

Format

```
Backward
```

Usage Notes

1. This subcommand is valid only from a full-screen terminal.
2. Typing a minus sign (-) is the same as entering BACKWARD.

5.2 CANCEL

CANCEL permanently stops a dataset transfer on a specified stream. By default, CANCEL can be used only by a VM station operator with class D privileges.

Format

CANCEL	<I> sn <O>

where:

I indicates that an input stream (from COS to the VM station) is to be selected.

O indicates that an output stream (from the VM station to COS) is to be selected.

sn specifies the number of the stream to be affected.

Usage Note

A list of active streams, with associated numbers and transfer directions, can be found in the STATION status display (use the STATION subcommand in CRSTAT).

5.3 CHANNEL

CHANNEL turns the COS I/O channel on or off. It can be used only by the COS master operator.

Format

CHAnnel	ch [ordinal] <ON > <OFF>

where:

ch — specifies the number of the channel pair. See your site analyst for specific channel assignments.

ordinal — specifies the ordinal value associated with the channel pair. This is required only if the channel specified is the I/O Subsystem channel. Must be a decimal number from 0 to 255; the default is 0. See your site analyst for specific channel ordinal assignments.

ON/OFF — turns the channel on or off.

Usage Notes

1. The use of this subcommand is limited to channels or channel ordinals defined as front-end stations or mass storage devices.

2. The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.4 CLASS

CLASS turns particular job classes on or off. It can be used only by the COS master operator.

Format

CLASS	<class> <ON > <ALL > <OFF>

where:

class — is the job class to be affected; must be 1 to 7 characters. You can get a list of valid job classes from the CRSTAT STATCLASS display.

ALL — specifies that all job classes are to be affected.

ON/OFF — turns the specified class or classes on or off.

Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.5 CP

CP can be used by the VM station operator to issue a CP command through the station. By default, CP requires a station privilege class of C.

Format

CP	command

where:

command is any valid CP command.

Usage Notes

1. The response to the command is displayed at the CRSTAT user console.

2. If the response is less than 160 characters (two lines), it is displayed in the CRSTAT scroll area; otherwise, it is displayed in full-screen mode and automatically re-issued at the current refresh rate.

5.6 DATASET

DATASET reports the existence of a COS permanent dataset.

Format

DATaset	pdn [id [ed [own]]]

where:

pdn — specifies the COS permanent dataset name.

id — specifies the permanent dataset user ID. If not specified, null is used.

ed — specifies the edition number of the dataset. If not specified, the status of the current highest edition number is returned.

own — specifies the owner of the permanent dataset if COS PDN privacy is used. Must be 1 to 15 alphanumeric characters. When COS PDN privacy is used, the default is SYSTEM.

Usage Note

Since the parameters are positional, you must use an asterisk (*) as a placeholder for "id" or "ed" if you wish to specify values after either of them.

5.7 DEVICE

DEVICE sets the status of a particular COS device either on or off. It can be used only by the COS master operator.

Format

DEVice	name <ON > <OFF>

where:

name — is the logical device name. Must be 1 to 8 characters. See your site analyst for a list of specific device names.

ON/OFF — sets the status on or off.

Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.8 DROP

DROP stops the processing of a COS job or dataset transfer, but saves the output dataset associated with it.

Format

DROP	jsq jobname

where:

jsq — is the job sequence number; required.

jobname — is the COS job name; required except when DROP is issued by the VM station operator.

Usage Notes

1. General users can drop only their own jobs. The station operator can drop any job submitted through the station and the COS master operator can drop all jobs (in both of these cases, the jobname parameter is not required).

2. If you do not know the name or sequence number of the job you wish to drop, use the STATUS, STATO, or JOB subcommands to get a list of COS jobs.

3. DROP causes the job to be aborted. Job execution continues with control statements encountered after the next EXIT statement, if any.

4. The message "REQUEST ACCEPTED" appears if the command is successful. If it is not, "REQUEST REJECTED BY THE CRAY" appears.

5.9 END

END ends the display session.

Format

```
END
```

This subcommand is valid only from a full-screen terminal. It is equivalent to the QUIT subcommand.

5.10 ENTER

ENTER changes the time limit, priority, station ID, or class of a particular COS job.

Format

ENTer	jsq <T> value <P> <I> <C>

where:

jsq — is the sequence number of the COS job to be affected.

T — indicates that "value" is the new time limit. "value" must be an integer from 0 to 16777215.

P — indicates that "value" is the new job priority. "value" must be a decimal number from 0 to 15.

I — indicates that "value" is either the new station ID or an optional terminal ID. If you are specifying a station ID, "value" must be 2 alphanumeric characters; a "value" of 1 to 8 characters indicates you are specifying a terminal ID.

C — indicates that "value" is the new COS job class.

value — is the new setting.

Usage Notes

1. Station operators can issue ENTER only for jobs submitted through the station; COS master operators can issue ENTER for all jobs.

2. The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.11 FORWARD (+)

FORWARD scrolls the display forward to the next frame.

Format

```
Forward
```

Usage Notes

1. This subcommand is valid only from a full-screen terminal.
2. Typing a plus sign (+) is the same as entering FORWARD.

5.12 HELP (?)

HELP provides brief descriptions of all the other CRSTAT subcommands.

Format

```
Help
```

Usage Notes

1. Typing a question mark (?) is the same as entering HELP.
2. To exit from the help display, enter RETURN.

5.13 INTERACT

INTERACT enables or disables interactive logons. It can be used to restrict COS usage prior to a dedicated time period. By default, INTERACT can be issued only by a station operator with class B privileges.

Format

```
INTERACT | <QUERY>
         |
         | <ON >
         | <OFF>
         |
         | <LIST  <ON > >
         |        <OFF>
```

where:

QUERY returns the current setting (that is, whether the use of COS is restricted in any way).

ON specifies that interactive logons are to be accepted.

OFF specifies that interactive logons are to be rejected.

LIST ON/OFF turns checking of the interactive list on or off. (The interactive list is created by the system administrator at station generation time.)

Usage Note

The following table summarizes the relationship between the INTERACT ON/OFF setting and the INTERACT LIST ON/OFF setting:

		LIST ON	LIST OFF
INTERACT	ON	R	E
	OFF	N	N

where:

R denotes that only authorized users can use COS interactively.

E denotes that everyone can use COS interactively.

N denotes that no one can use COS interactively.

5.14 JOB

JOB displays the status of a specific COS job, plus the last logfile message.

Format

JOB	jobname [jsq]

where:

jobname — is the COS job name, required for this subcommand. Use the STATUS (or STATO) subcommand to see a list of current COS jobs.

jsq — is the job sequence number. This is required only in the case of duplicate values for "jobname". You can get a list of job sequence numbers from the STATUS (or STATO) subcommand.

Usage Notes

1. Unless you are the master operator, only those jobs submitted through the station you are working with can be displayed.

2. The first line of the display contains the job name, job sequence number, and the status. The second line of the display contains the last logfile message.

Example

Here is a sample JOB display, resulting from the subcommand JOB STING:

```
COS JOB  STING   IS AWAITING MEMORY    JSQ= 29483
ACCOUNT,AC=,UPW=.
```

5.15 JSTAT

JSTAT displays detailed information on a particular COS job, including the job's CPU use and individual tasks active within the job.

Format

JSTAT	jsq

where:

jsq is the job sequence number, which is required. You can obtain it from the STATUS, STATO, or JOB displays.

Usage Notes

1. Unless you are a master operator, only those jobs with the same mainframe ID as the VM station can be displayed.

2. The header line for the display contains a frame count at the far right indicating which frame of status information is being displayed.

3. The following information appears below the header line:

   - Job sequence number
   - Current register cluster number in use
   - Job name as received from originating station
   - Job priority
   - User number
   - Field length, specified as a decimal count of 512-word blocks
   - Station ID associated with the job
   - CPU time used and time limit, in seconds
   - Terminal ID (TID) associated with the job
   - Job status
   - Tape drives reserved and assigned
   - Job class assignment
   - Job Execution Table (JXT), Job Communication Block (JCB), and Job Table Area (JTA) addresses, in octal

- Last control statement processed and last logfile message written
- Number of active tasks
- Individual task status, including CPU time used and Execution Table (TXT) and Task Control Block (TCB) addresses, in octal.

Example

The following is a sample JSTAT display, resulting from the subcommand JSTAT 29538:

```
10:47:17              CRAY JOB STATUS                STATIOX3    Frame 1

         JSQ:   29538                          Cluster:        0
         Job:  CRG                           Priority:      5.0
        User:                             Field Length:       44
          ID:  V3                            Time Used:        0
         TID:  2001                        Time Limit:        2
      Status:  WAIT-MEM                 Tapes Reserved:        0
       Class:  EXPRESS                  Tapes Assigned:        0

            JXT = 0165577   JCB = 0000000    JTA = 0000000

$CS:  LDR,STK.
$LOG: LDR,STK.

Tasks:  1  Task #    Status      CP Time        TXT        TCB
           ------    ------      -------        ---        ---
                1    WAIT-TIM          0     205616    0000000
                                 End Of Data
```

5.16 KILL

KILL stops the processing of a job or dataset transfer and deletes the output dataset associated with it.

Format

KILL	jsq jobname

where:

jsq specifies the job sequence number; required.

jobname specifies the COS job name; required except when KILL is issued by the VM station operator (through CRSTATOP).

Usage Notes

1. General users can kill only their own jobs. The station operator can kill any job submitted through the station and the COS master operator can kill all jobs.

2. If you do not know the name or sequence number of the job you wish to kill, use the STATUS, STATO, or JOB subcommands to get a list.

3. The effect of the KILL subcommand depends on the status of the job. If processing has not yet begun, KILL deletes the job's input dataset from the input queue. If processing has begun, KILL terminates it. If the processing has completed, the output dataset is deleted.

4. KILL deletes all output from an executing job except the logfile, which returns to the station.

5. Unlike DROP, KILL does not cause processing of EXIT control statements that may be in the job deck.

6. The message "REQUEST ACCEPTED" appears if the command is successful. If it is not, "REQUEST REJECTED BY THE CRAY" appears.

5.17 LIMIT

LIMIT sets the maximum number of COS jobs that can execute at one time. It can be used only by the COS master operator.

Format

LIMit	[limit]

where:

limit — specifies the maximum number of jobs that can be active (multiprogrammed) on COS. A value of 1 specifies that jobs are monoprogrammed. The maximum value is 255. If no value for "limit" is provided, the number of jobs that can be active is determined by the job class structure currently in effect.

Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.18 LINK

LINK displays the status of the station's front-end interface.

Format

```
LINK
```

Usage Notes

1. General users and station operators can see the status of only their own station; COS master operators see the status of all stations.

2. The header line of the display contains a frame count in the far right corner indicating which frame of status information is being displayed. The following information appears below the header line:

ID	the station ID (also known as the mainframe ID, or MF value)
OQC	queue count; number of datasets queued for staging to the station
CIS	number of active input streams
COS	number of active output streams
MIS	maximum number of input streams at logon
MOS	maximum number of output streams at logon
MAS	maximum number of active streams at logon
NSS	maximum number of subsegments associated with each message
SSSZ	subsegment size, in 64-bit words
CH	COS channel number
ORD	ordinal value associated with the channel

Example

The following display resulted from a LINK subcommand:

```
16:32:17              CRAY  LINK  STATUS          STATIOX4    Frame 1

          ID OQC CIS COS MIS MOS MAS NSS SSSZ CH,ORD
          -- --- --- --- --- --- --- --- ---- ------
          V3   0   0   0   8   8  16   1 1024  4,13
                        End Of Data
```

5.19 LOGOFF

The LOGOFF subommand logs the VM station off from COS, VM, or both. By default, LOGOFF can be issued only by a station operator with class A privileges.

Format

LOGOFF	[CRAY]

where:

CRAY specifies that the station is to log off only from COS. The station will then re-IPL CMS PARM AUTOCR.

If CRAY is not specified, the station logs off from both COS and the VM system.

5.20 LOGON

LOGON logs the VM station on to COS. By default, it can be issued only by a station operator with class E privileges.

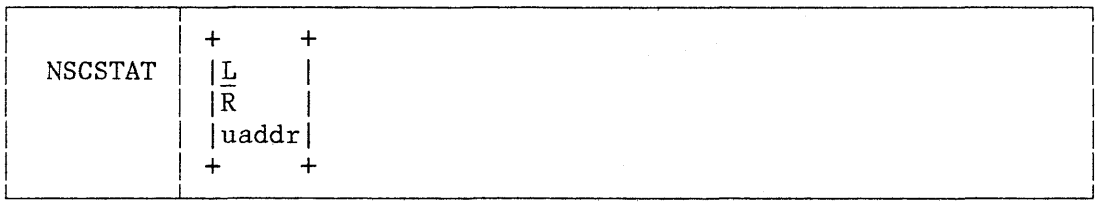
Format

```
LOGON
```

5.21 NSCSTAT

NSCSTAT displays statistics for the NSC HYPERchannel adapter. By default, NSCSTAT can be issued only by a station operator with class E privileges.

Format



where:

L — requests information on the local A22X adapter. This is the default.

R — requests information on the remote A130 adapter (to a Cray Computer System).

uaddr — requests information on a remote adapter unit. "uaddr" must be a hexadecimal value specifying the address of the unit (for example, D1).

Usage Note

The NSCSTAT display contains the following information:

- NSC adapter model number.
- Microcode revision level.
- Adapter unit address.
- Number of station retries, namely the number of successful times the station has had to retry an I/O operation that ended in an error.
- Number of transmits cancelled by the adapter.
- Number of transmit operations aborted due to a hardware malfunction or deadman timeout in this adapter.
- Number of message frames transmitted for each trunk.
- Approximate number of message frames transmitted per second for each trunk.
- Number of message frames retransmitted by the NSC adapter hardware or microcode for each trunk.
- Approximate number of message frames retransmitted per second for each trunk.

Example

The following is a sample NSCSTAT display:

```
16:56:00        NSC HYPERCHANNEL STATUS DISPLAY    U2887       Frame 1

     Model No.: A130      Revision Level: X'30'   Unit Address: X'21'

                    Station Retries -------      0
                    Canceled Operations ---    150
                    Operation Aborts ------      0

                          Trunk 0     Trunk 1     Trunk 2     Trunk 3
                         ---------   ---------   ---------   ---------
  Messages Transmitted           0           0       1,095      81,156
   Per Second                    0           0           0           0
  Messages Retransmitted         0           0      12,956         663
   Per Second                    0           0           0           0
```

5.22 OPERATOR

OPERATOR specifies the front-end and terminal ID of the COS master operator. It can be issued by any station operator.

Format

OPERator	id tid pw [npw]

where:

id — is the station ID of the new master operator station. Must be 2 alphanumeric characters. See your site analyst for a list of station IDs.

tid — is the terminal ID of the new master operator station. Must be 1 to 8 characters. See your site analyst for a list of valid terminal IDs.

pw — is the password for the master operator. Must be 1 to 8 characters. See your site analyst for the password.

npw — specifies a new password that will be required for subsequent OPERATOR subcommands. Must be 1 to 8 characters.

Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.23 QUIT

QUIT ends the display session.

Format

```
Quit
```

This subcommand is valid only from a full-screen terminal. It is equivalent to the END subcommand.

5.24 RECOVER

RECOVER allows the scheduling of recovered rolled jobs after a system shutdown. It can be used only by the COS master operator.

Format

```
RECOVER
```

Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.25 REFRESH

REFRESH controls the rate at which the status display updated. It can also simply return the current setting.

Format

where:

seconds — can be any integer value from 2 to 60. The refresh rate by default is 5 seconds.

? — returns the current refresh rate.

Usage Note

This subcommand is valid only on full-screen terminals. For remote communication terminals, both the default and minimum refresh rates are 20 seconds.

5.26 RERUN

RERUN returns a COS job to the input queue for rerunning later.

Format

RERun	jsq jobname

where:

jsq is the job sequence number; required.

jobname is the COS job name; required except when RERUN is issued by the station operator (through CRSTATOP).

Usage Notes

1. If you do not know the name or sequence number of the job you wish to rerun, use the STATUS, STATO, or JOB subcommands to get a list.

2. General users can RERUN only their own jobs. The station operator can RERUN any job submitted through the station and the COS master operator can RERUN all jobs (in both of these cases, the jobname parameter is not required).

3. The message "REQUEST ACCEPTED" appears if the command is successful. If it is not, "REQUEST REJECTED BY THE CRAY" appears.

5.27 RESUME

RESUME resumes the processing of either all COS jobs or the particular job specified. It can be used by the COS master operator, or by a station operator for jobs submitted through that particular station.

Format

RESume	<jsq> <ALL>

where:

jsq is the sequence number of the COS job to be resumed.

ALL specifies that all COS jobs are to be resumed.

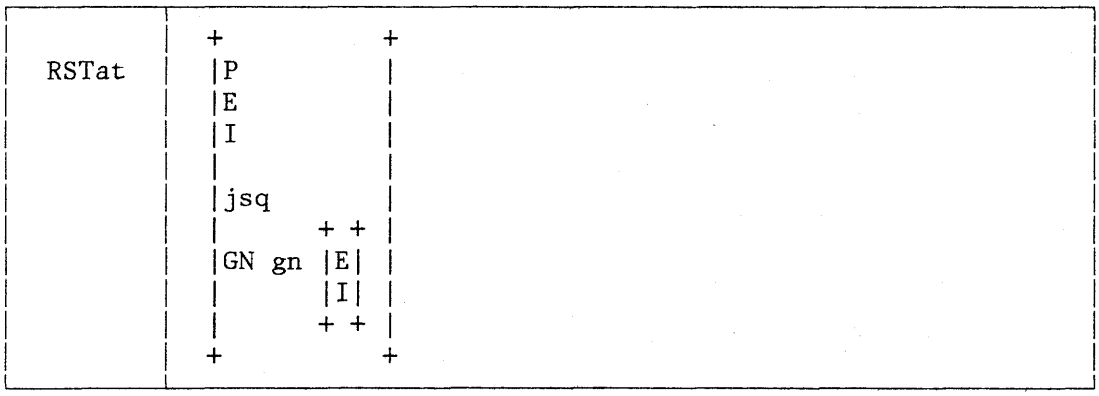
Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.28 RSTAT

RSTAT displays the status of defined COS generic resources.

Format



where:

P — displays the generic resource profile. This is the default.

E — displays detailed generic resource data for all jobs in the Executing queue.

I — displays detailed generic resource data for all jobs in the Input queue.

jsq — displays detailed generic resource use for the job with the sequence number "jsq".

GN gn — displays profile and cumulative utilization data for the generic resource named by "gn". If you qualify this selection with E or I, the display includes only those jobs in the Executing or Input queue, respectively.

Usage Notes

1. The following information is displayed when you use the RSTAT P (or simply RSTAT) subcommand:
   - Name of all generic resources defined on COS
   - Number of units available for each generic resource
   - Number of units assigned for each generic resource
   - Total number of units requested by jobs in the Input queue for each generic resource
2. The following information is displayed when you select the E, I, or jsq parameters:
   - Job name

- Job sequence number
- Job priority
- Name of each generic resource
- Job limit and the number of units assigned for each generic resource used by the job

3. The following information is displayed when you use the GN qualifier:
   - For the generic resource named "gn", the number of units allocated and the number of units required by jobs in the Input queue
   - For each job that is using or waiting for the generic resource named "gn", the job sequence number, job name, job status, job priority, job limit, and number of units assigned

Example

Here is a sample display resulting from RSTAT with no parameters:

```
16:44:37      CRAY GENERIC RESOURCE PROFILE      STATIOX4    Frame 1

          Generic     Units        Units        Pending
          Name        Available    Allocated    Requests
          -------     ---------    ---------    --------
          *6250               5            0           0
          SSD            262112        31040       22112
          *A9465              0            0           0
          ISPI1               5            1           1
                          End Of Data
```

5.29 ROUTE

ROUTE changes the front-end destination of datasets in the output queue. It can be used only by the COS master operator.

Format

ROUte	oldid newid

where:

oldid — is the ID of the station from which the job originated and to which the output datasets were previously being sent. Must be 2 alphanumeric characters.

newid — is the ID of the station to which output datasets will be sent, and with which jobs will be identified. Must be 2 alphanumeric characters.

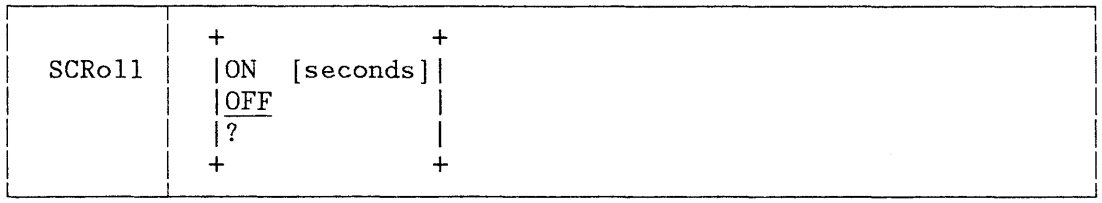
Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.30 SCROLL

SCROLL sets automatic scrolling of the display on or off. If scrolling is set on, SCROLL can also control the rate.

Format



where:

ON/OFF turns scrolling on or off. The default is OFF.

? returns the current scroll setting.

seconds can be any integer from 2 to 60. The default is 10 seconds.

Usage Note

This subcommand is valid only from full-screen terminals.

5.31 SHUTDOWN

SHUTDOWN suspends and rolls out all executing jobs, and prohibits any new jobs from executing. It can be used only by the COS master operator.

Format

```
SHUTDOWN
```

Usage Notes

1. The message "REQUEST ACCEPTED" appears if the subcommand is successful. "REQUEST REJECTED BY THE CRAY" appears if it is not.

2. Use the subcommand RESUME to resume the processing of a suspended job.

5.32 STALEVEL

STALEVEL returns the release level of the VM station, plus system generation statistics.

Format

```
STALevel
```

Usage Note

The display returned by STALEVEL is in one of two forms, depending on whether or not you are a VM station operator. General users see this information displayed:

- Release level of the VM station
- Date and time of the last station generation
- Date and time the station was logged on to the VM system
- Date and time the station was logged on to COS
- Date and time of the last station IPL
- Manufacturer and status of the interface box

Privileged users (those with any privilege class other than G) also receive this information:

- Number of relogs due to I/O errors, hard abends, and soft abends
- Number of transfers as reported by STATS since VM logon and since COS logon
- Number of 4K-byte blocks transferred (as reported by STATS) since VM logon and since COS logon

Example

Here is a sample privileged STALEVEL display:

```
  16:08:49   CRAY STATION OPERATOR COMMAND RESPONSE  STATIOX4  Frame 1

  VM/SP CRAY interface station: Release 03.00; Service level 00
  Generated on:  07/09/85 at 12:58:58
  Logged onto VM system since  08/12/85 at 07:35:02
  Logged onto COS system since 08/12/85 at 14:38:41
  Station was last IPLed on 08/12/85 at 14:36:37
  Interface box manufacturer: Network Systems Corporation
  The interface box is NOT timing out
  Relogs caused by I/O errors :       3
  Relogs caused by hard abends:       0
  Relogs caused by soft abends:       0
  Number of transfers reported by STATS:
       Since VM logon :             4037
       Since COS logon:              616
  Number of 4K byte blocks transfered as reported by STATS:
       Since VM logon :           521279
       Since COS logon:            93129
```

5.33 STAMAP

STAMAP displays the station module load map. By default, STAMAP can be issued only by a station operator with class E station privileges.

Format

```
STAMAP
```

Example

Here are some sample lines from a STAMAP display:

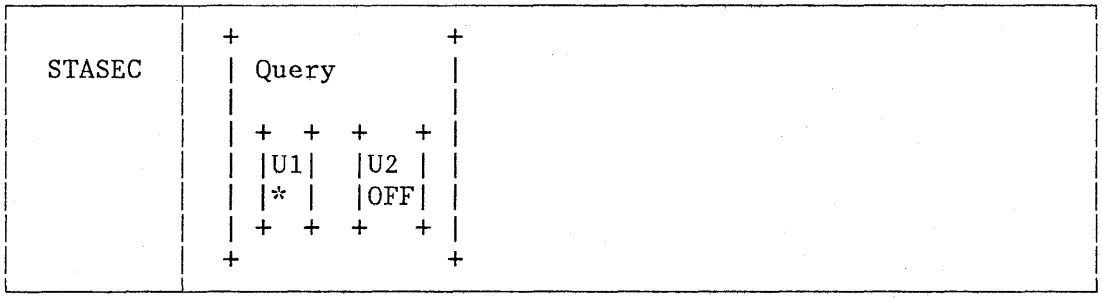
```
16:59:29   CRAY STATION OPERATOR COMMAND RESPONSE   U2887    Frame 1

 Label  Address      Label  Address      Label  Address
SIP      80000200   SIPNSCAC 00000798   SIPNSCAH 0000079C
SIPFEIAH 000007A2   NTRACE   000007B8   SIPF1    000007BC
SVT      80000920   SVTICB   0000094C   SVTFLGS  0000095C
SVTFLGS3 0000095E   SVTFLGS4 0000095F   SVTITDCN 00000982
SVTIASLW 00000988   SVTOPRST 0000099C   SVTOPREN 000009A0
SVTCMREN 000009A8   SVTTGRST 000009AC   SVTTGREN 000009B0
```

5.34 STASEC

STASEC either displays the secondary console status of all VM users or alters the secondary console status of a selected VM user. By default, STASEC can be issued only by a station operator with class A station privileges.

Format



where:

Query — requests the current secondary console status of all VM users. This is the default. An asterisk (*) preceding a VM userid in this display indicates the user is in a disconnected mode.

U1 — specifies the VM userid whose secondary console status is to be modified.

* — specifies that the VM station's userid is to be used as the U1 value.

U2 — specifies the new secondary console of U1. This parameter can be any 8-character alphanumeric value except OFF.

OFF — specifies the secondary console of U1 is to be turned off.

Example

The following is a sample STASEC display:

```
 13:28:59   CRAY STATION OPERATOR COMMAND RESPONSE  U18782   Frame 1

 +------------------+------------------+------------------+
 |  Userid  Secuser |  Userid  Secuser |  Userid  Secuser |
 +------------------+------------------+------------------+
 |*U18782   U1878   | U3346            | U2008            |
 |*STATIOX2 STAMAINT|*U7777            | SYSADMIN         |
 |*U2077            |*U0606            | U1222            |
 |*STATIOX4 STAMAINT| U0661            | U1665            |
 |*H85              |*CMSBATCH         |*VMACCT           |
 | U2925            | U1281            | U1878    U18782  |
 |*U9903            | U1429            | U1107            |
 +------------------+------------------+------------------+
```

5.35 STASTAT

STASTAT sets the reporting of dataset transfer statistics on the station console log on or off. By default, STASTAT can be issued only by a station operator class E privileges.

Format

STASTAT	<QUERY> <ON > <OFF >

where:

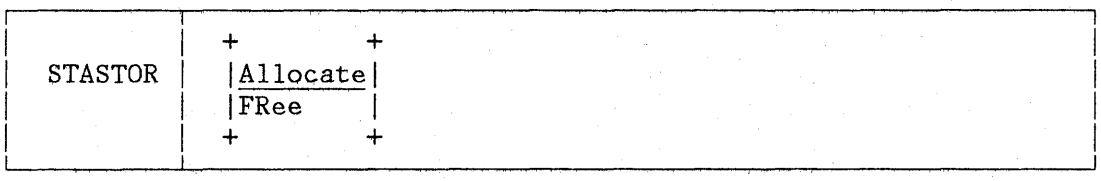
QUERY returns the current setting.

ON/OFF turns the reporting on or off.

5.36 STASTOR

STASTOR displays the status of the station's storage queues. Unless changed in the STATION CONFIG file, STASTOR can be issued only by a station operator with class E privileges.

Format



where:

Allocate — returns the number of storage blocks allocated and displays a list of allocated free storage blocks. This is the default.

FRee — returns the number of free storage blocks and displays a list of them.

Examples

The following display resulted from the STASTOR ALLOCATE subcommand:

```
17:06:36  CRAY STATION OPERATOR COMMAND RESPONSE  U2887     Frame 1

                              Storage chain status

Allocated blocks: 000075    Unallocated blocks:  000014
Allocated bytes : 00844736  Unallocated bytes :  00550432

Address    Module name      Length     Time     Flag       Comment
04AA30  OPCTASK  + X'009E' 024624  16:49.68  GETSTG  Status buffer
050A90  IATASK   + X'07B6' 004160  16:49.68  GETSTG  LCP queue-000001
051B00  IATASK   + X'07B6' 004160  16:49.68  GETSTG  LCP queue-000002
052B70  IATASK   + X'07B6' 004160  16:49.68  GETSTG  LCP queue-000003
053BE0  RDRTASK  + X'007E' 002672  16:49.68  GETSTG  00C - Task data
```

5.37 STATCLAS

STATCLAS displays the status of COS job classes.

Format

```
STATClas
```

Usage Note

The header line for the display specifies the frame count at the right of the line and indicates which frame of status information is being displayed. The following information is displayed immediately below the header line:

- Job class structure name (CSDN)
- Number of jobs in the system (both Input and Executing queues)
- Number of active jobs in the executing queue (JXT)
- Maximum JXTs allowed by the system (LIMIT)
- Number of available pool JXTs
- Number of defined classes
- Number of classes waiting for JXTs

The remainder of the display contains the following information for each defined job class:

- First 7 characters of the job class name
- Number of active jobs in the executing queue (JXT)
- Number of jobs waiting for JXTs
- Number of reserved JXTs
- Maximum JXTs allowed by class
- Status (ON or OFF)

Example

Here is a sample STATCLAS display:

```
 17:00:16            CRAY JOB CLASS STATUS        STATIOX4    Frame 1

                              CSDN = DAYX4

       Jobs In System      56       Active Jobs          25
       Max JXTS (Limit)   100       Avail Pool JXTS       3
       Defined Classes      5       Classes WTG JXTS      4

 Class       Active     Waiting     Reserved     Maximum       Status
 -----       ------     -------     --------     -------       ------
 STARTUP          0           0            1           1           ON
 OPERATR          0           0            5           5           ON
 JOBSERR          0           0            1           1           ON
 ORPHAN           0           0            1           1           ON
 PO               0           0            0           0           ON
                                End Of Data
```

5.38 STATION

STATION displays the status of the VM station.

Format

```
STATIon
```

Usage Note

The STATION display contains the following information:

- CMS userid of the VM station.
- Station logged on or off of COS.
- Current number of interactive users logged on to COS through the station.
- Virtual memory used, current and high, in bytes.
- Number of messages successfully sent to COS since logon time.
- Virtual and total front-end CPU seconds used.
- Stream status for each defined stream. This indicates the COS job sequence (JSQ) number for output streams and the COS output queue sequence number for input streams. It also shows the virtual device address if active, total COS blocks being staged if active, current COS block count if active, and stream control byte values. Input streams are for disposes; output streams are for acquires, fetches, CRSENDs, and CRSUBMITs.

Example

Here is a sample STATION display:

```
 17:05:01             VM STATION STATUS            STATIOX4    Frame 1
             Logged: ON              Interactive Users:   0
          System Name: COS X.15     Gen Date: 08/28/85

          Memory Used       Message    CPU Time Used    09/20/85
        Current      High    Count   Virtual      Real
        -------      ----    -----   --------     ----
         526008    964848    12066    487.11   1250.91

       Input Streams from Cray          Output Streams to Cray
 #  JSQ Dev    Size    Blk # SCB RSP | #  JSQ Dev    Size    Blk # SCB RSP
 1                           IDL IDL | 1                           END SVG
 2                           IDL IDL | 2                           IDL IDL
 3                           IDL IDL | 3                           IDL IDL
 4                           IDL IDL | 4                           IDL IDL
 5                           IDL IDL | 5                           IDL IDL
 6                           IDL IDL | 6                           IDL IDL
 7                           IDL IDL | 7                           IDL IDL
 8                           IDL IDL | 8                           IDL IDL
                                 End Of Data
```

5.39 STATO

STATO displays the status of the COS jobs you own (that is, the TID matches your CMS userid). The type of information you see is the same as that displayed by STATUS.

Format

STATO	[E] [I] [O] [R] [S] [STR [¬]string]

where:

E I O R S request the status of the Executing, Input, Output, Receiving, and Sending queues, respectively. You may specify any or all of these queues, separating them with blanks. By default, all queues are shown.

STR [¬]string
selects only those job status entries containing "string" for display. If "string" is prefixed with the NOT qualifier (hex 5F), only those entries that do not contain "string" are displayed.

Note that the value you specify is converted to uppercase. It is limited to 8 characters, or 7 if you use the NOT qualifier.

The STR option must follow any job queue parameters.

Usage Note

The STATO subcommand displays the same information displayed by the STATUS subcommand except that only your jobs are listed. The Usage Notes under the STATUS subcommand (see the next subsection) apply to STATO as well.

5.40 STATUS

STATUS displays the status of COS jobs. It is the default subcommand assumed when CRSTAT is invoked.

Format

STATus	[E] [I] [O] [R] [S] [STR [¬]string]

where:

E I O R S request the status of the Executing, Input, Output, Receiving, and Sending queues, respectively. You may specify any or all of these queues, separating them with blanks. By default, all queues are displayed.

STR [¬]string
selects only those job status entries containing "string" for display. If "string" is prefixed with the NOT qualifier (hex 5F), only those entries that do not contain "string" are displayed.

Note that the value you specify is converted to uppercase. It is limited to 8 characters, or 7 if you use the NOT qualifier.

The STR option must follow any job queue parameters.

Usage Notes

1. The header line for the display lists the queues being displayed. A frame count in the upper right of the display indicates which frame of status information is being displayed.

2. The following information appears below the header line:

   JOBNAME the COS job name. This is the name you need for the DROP, KILL, RERUN, and SWITCH subcommands.

   SEQ the job sequence number, also required for the DROP, KILL, RERUN, and SWITCH subcommands.

   DC the disposition code specified in the job.

   STATUS the current state of your job on COS. The possible values in this column, and their descriptions, are as follows:

EXECUTE	Executing
LOCK-MEM	Locked for memory change
LOCK-SYS	Locked for system change
WAIT-TIM	Dormant
QUEUED	Queued for execution
ROLL-IN	Loading to memory
ROLLED	Rolled out
ROLL-OUT	Unloading from memory
WAIT-CPU	Awaiting CPU
WAIT-EVT	Awaiting event
WAIT-I/O	Waiting for I/O
WAIT-MEM	Awaiting memory
SUSP-OPR	Suspended by operator
Q-RSOURC	Queued for resources
SUSP-RCY	Suspended for recovery
WAIT-TSK	Task suspended
WAIT-SYS	System suspended
WAIT-1TH	Suspended
WAIT-XFR	Awaittng transfer
XFER-IN	Transferring in
XFER-OUT	Transferring out
RESIDENT	Resident in memory (multitasking jobs)

CLASS the job class assignment used by COS and detrmined by installation parameters.

PRI the job priority. Initial job priority is determined by the JOB control statement, class, or operator assigned priority and JOB control statement time and memory specifications. (Subsequent job scheduler adjustments are not displayed.) Output dataset priority is partially determined by the dataset size.

FL the field length of the job, specified as a decimal count of 512-word blocks. If field length is not applicable, the entry contains "-----".

CPU and LIMIT
the amounts of CPU time the job has used, and the upper limit assigned to that job. If the job's time used or time limit exceeds the display area, the corresponding entry contains "******". If either time is not applicable for the dataset, the corresponding entry contains "-----".

MF and TID
the mainframe and terminal ID associated with the job.

3. The status display is a full-screen display on a 3270-type terminal. If you are on a remote communication terminal, or if you specify NOREF, one line at a time is displayed and you are returned to CMS after all data is presented.

4. Normally, only those entries matching the station ID are displayed. If the COS I@ALLSDT installation parameter is enabled, however, all entries in the queues are displayed. The latter is true also if the station is the master operator station.

Example

The following is a sample STATUS display:

```
17:14:19        Cray System Status  (E I O R S)     STATIOX4     Frame 1
                                CSDN = DAYX4
Jobname    Seq DC Status     Class     Pri    FL   CPU  Limit  MF  TID
------- ----- -- --------- ------- ---- ----- ---- ------  --  ------
GULSVIG  6376 IN EXECUTE   MEDIUM   6.0  1334  712    900  V3  U2887
LINDY    6230 IN QUEUED    UNTLRG   3.0  8091    0    200  V3  PHGL77
LINDY    6254 IN QUEUED    UNTLRG   3.0  8091    0    200  V3  PHGL77
MHB      7070 IN QUEUED    SMALL    7.0  8091    0     50  V3  UTS
CRAYTT2  6662 IN Q-RSOURC  BNCHSMA 12.0  8091    0      3  DX  AAORIg
UTCE1    5400 IN QUEUED    UNTLRG   3.0  8091    0 77,215  V3  CEII50
```

5.41 STDEVICE

STDEVICE allows individual virtual devices, and classes of virtual devices, to be turned on or off. By default, STDEVICE can be issued only by a station operator with class B privileges.

Format

```
STDEVICE | < QUERY                          >
         |
         | < <ONLINE >  CLASS  devclass >
         |   <OFFLINE>
         |
         | < <ONLINE >   <devname>       >
         |   <OFFLINE>   <address>
```

where:

QUERY returns the status of the station virtual I/O devices.

ONLINE turns the requested device on.

OFFLINE turns the requested device off.

CLASS devclass
specifies a particular device class. "devclass" must be one of the following:

CRAY
CONSOLE
READER
PRINTER
PUNCH
TAPE
DASD
INTERTASK
AUTOLOG
CRAY

devname specifies a symbolic device name, as defined in the device's UCB (see the VM Station Program Logic Manual, SI-0161). The default values are listed in the Usage Note below.

address specifies the device's virtual address. See the Usage Note below for a list of default values.

Usage Notes

1. A device that is in use cannot be taken offline.

2. The default device attributes are shown in the table below:

devname	address	devclass
INT1	000	CRAY
CON1	009	CONSOLE
RDR1-RDR8	00C-07C	READER
PRT1-PRT8	01E-08E	PRINTER
PUN1-PUN8	01D-08D	PUNCH
TAP1-TAP8	181-188	TAPE
DKS1-DSK8	199-899	DASD
ITD1-ITD8	L00-L07	INTERTASK
AUT1-AUT8	L09-L10	AUTOLOG
INT1	(set by installation)	CRAY

Table 8. Default Device Attributes

Example

Here a few lines from the STDEVICE display:

```
17:13:38  CRAY STATION OPERATOR COMMAND RESPONSE   U2887     Frame 1

+------+-----+----------+---------------------------+
| Devn | Add |  Devclas |           Status          |
+------+-----+----------+---------------------------+
| CON1 | 009 | CONSOLE  | READY       IN USE ONLINE |
| RDR1 | 00C | READER   | READY       FREE   ONLINE |
| RDR2 | 01C | READER   | READY       FREE   ONLINE |
| RDR3 | 02C | READER   | READY       FREE   ONLINE |
| RDR4 | 03C | READER   | READY       FREE   ONLINE |
| RDR5 | 04C | READER   | READY       FREE   ONLINE |
| RDR6 | 05C | READER   | READY       FREE   ONLINE |
| RDR7 | 06C | READER   |                    OFFLINE |
| RDR8 | 07C | READER   |                    OFFLINE |
| PUN1 | 01D | PUNCH    | READY       IN USE ONLINE |
+------+-----+----------+---------------------------+
```

5.42 STOR

STOR displays the status of COS disks. It is useful if you need to know if enough storage exists to run a job requiring large amounts of storage space.

Format

```
STOR
```

Usage Notes

1. The header line of the display shows a frame count in the far right corner. This indicates which frame of status information is being displayed.

2. The columns below the header line contain the following information:

   FLAGS special information about each device:

C	Resource controlled device
M	Master device
R	Read-only
D	Device down
P	Private; device can be requested by name only
S	Scratch
V	Volatile

   SIZE the size of the device

   PERM the amount of space in use for permanent datasets

   TEMP the amount of space in use for temporary datasets

   FREE-(%) the amount and percentage of space free on each device

   RER the number of recovered errors on each device

   UER the number of unrecovered errors on each device

3. Space not accounted for by PERM, TEMP, and FREE is allocated to local or system datasets and flaws.

Example

Here is a sample STOR display:

```
17:34:10          Cray  Disk  Storage  Status     STATIOX4     Frame 1
  Flags  Device      Size     Perm     Temp     Free-(%)   RER UER
 ------- -------- ------- ------- ------- ----------- --- ---
 M  P    49-A1-20   6,442   4,863       0   1,579  25   0   0
   D     49-A1-21   7,015       0       0   7,015 100   0   0
  RD     39-1-22A   4,210       0       0   4,210 100   0   0
  RD     39-1-23A   4,210       0       0   4,210 100   0   0
         39-1-32A   4,133   3,779      14     340   8   0   0
         39-1-33A   4,128   4,058      20      50   1   0   0
  RD     39-1-22B   4,210       0       0   4,210 100   0   0
 ------- -------- ------- ------- ------- ----------- --- ---
           TOTAL   34,348  12,700      34  21,614  34   0   0
```

5.43 STREAM

STREAM changes the number of available input streams to VM, output streams from VM, and total active streams. By default, it can be issued only by a station operator with a station privilege class of D.

Format

STReam	id input ouput total

where:

id — is the ID of the station whose stream count is to be affected.

input — is the number of input streams allowed to the VM station. Can be an integer from 0 to 8, but cannot exceed the maximum value established at station logon time.

output — is the number of output streams allowed from the VM station. Can be an integer from 0 to 8, but cannot exceed the maximum value established at station logon time.

total — is the number of streams through which data can be sent concurrently (that is, active streams). Can be an integer from 0 to 16, but cannot exceed the maximum value established at station logon time.

Usage Notes

1. The message "REQUEST ACCEPTED" appears if the subcommand is successful; "REQUEST REJECTED BY THE CRAY" appears if it is not.

2. The sum of "input" plus "output" cannot exceed the value specified by "total".

3. The LINK subcommand shows the current stream settings.

5.44 SUBMIT

SUBMIT allows the submission of a CMS JOB file to COS by calling the station command CRSUBMIT.

Format

SUBmit	fn [ft [fm]]

where:

fn ft fm — specify the filename, filetype, and filemode of the CMS JOB file. Only the filename is required; the default filetype is JOB and the default filemode is A.

Usage Note

The message "REQUEST ACCEPTED" appears if the command is successful; "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.45 SUSPEND

SUSPEND halts the processing of either all COS jobs or the particular one specified. It can be used by the COS master operator, or by a station master operator against jobs submitted through that particular station.

Format

SUSpend	<jsq> <ALL>

where:

jsq is the sequence number of the COS job to be suspended.

ALL specifies that all COS jobs are to be suspended.

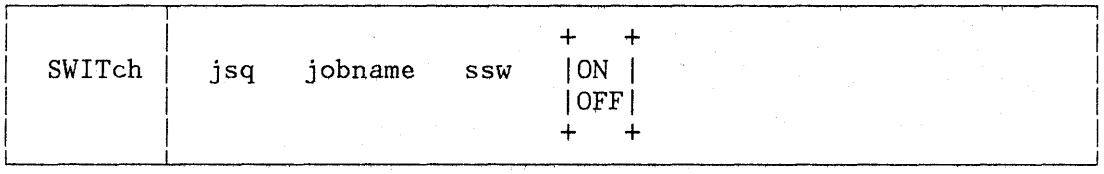
Usage Note

The message "REQUEST ACCEPTED" appears if the subcommand is successful; "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.46 SWITCH

SWITCH sets or clears a toggle sense switch.

Format



where:

jsq — is the job sequence number; required.

jobname — is the COS job name; required unless the subcommand is issued by a CRSTATOP user.

ssw — is the sense switch number; required. Must be a numeric character from 1 to 6.

ON/OFF — set or clear the switch, respectively.

Usage Notes

1. If you do not know the particular job name or job sequence number, use the STATUS, STATO, or JOB subcommands to get a list.

2. General users can specify only their own jobs. The station operator can specify any job submitted through the station and the COS master operator can specify all jobs (in both of these cases, the jobname parameter is not required).

3. The message "REQUEST ACCEPTED" appears if the command is successful; "REQUEST REJECTED BY THE CRAY" appears if it is not.

5.47 TOP

TOP scrolls the display backward to the first frame.

Format

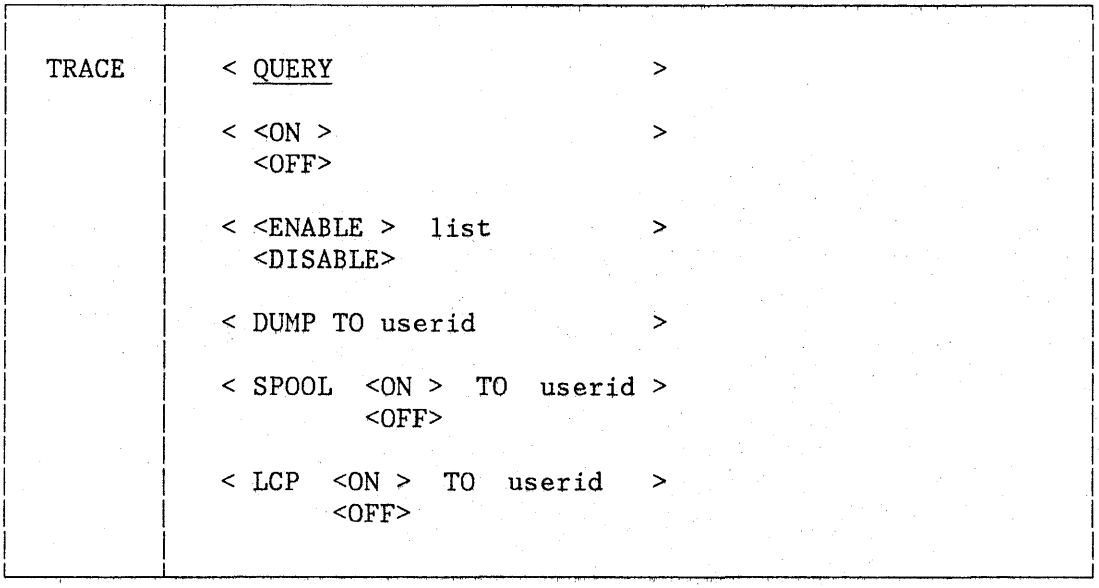
```
Top
```

This subcommand is valid only from a full-screen terminal.

5.48 TRACE

TRACE controls internal station event tracing, including both the internal trace table and the tracing of LCP messages. By default, it can be issued only by a station operator who has a station privilege class of E.

Format



where:

QUERY displays the current internal tracing settings. This is the default.

ON/OFF turns all trace table activity on or off.

ENABLE/DISABLE list
starts or stops trace table tracing of the events listed. The acceptable values for "list" are as follows:

Value	Description	Class
I/O	I/O events	0
EXT	External interrupt events	1
DISP	Dispatcher events	2
WTPT	Wait and post events	3
MACR	Executive call events	4
LCP	LCP events	5
VMCF	VMCF diagnose events	6
RESV	SVC call	7
RESV	Reserved for future use	8
RESV	" " " "	9
RESV	" " " "	A
RESV	" " " "	B
RESV	" " " "	C
RESV	" " " "	D
RESV	" " " "	E
RESV	" " " "	F

DUMP TO userid
: dumps the internal trace table to the virtual reader of the CMS user specified by "userid".

SPOOL ON/OFF TO userid
: The ON option punches internal trace table entries to the CMS user specified by "userid". OFF suppresses the function and closes the punch.

LCP ON/OFF TO userid
: turns tracing of all LCP and data segments (first 128 bytes) to station virtual printer X'002' on or off. "userid" specifies a CMS user to which virtual printer X'002' is spooled. The tracing data is sent to that user's virtual reader when LCP trace is turned off. By default, the data is sent to the system printer for the station virtual machine.

Example

The following is a sample TRACE display:

```
  17:19:52  CRAY STATION OPERATOR COMMAND RESPONSE  U18782    Frame 1

  Class Status
  I/O  Enabled
  EXT  Enabled
  DISP Enabled
  WTPT Enabled
  MACR Enabled
  LCP  Enabled
  VMCF Enabled
  SVC  Disabled
  Spool is OFF
  Hardcopy LCP trace is OFF
```

5.49 TRTABLE

TRTABLE provides a list of the translation tables available for data transfers.

Format

TRTABLE	[QUERY]

where:

QUERY specifies that a formatted list of the available translation tables is to be output to your screen. This is the default if you simply enter "TRTABLE".

Example

Here is a sample TRTABLE display:

```
  11:19:36  CRAY STATION OPERATOR COMMAND RESPONSE  STATIOX3  Frame 1

  +----------+-------------------------------------------------------+
  |  Table   |                          Comment                      |
  +----------+-------------------------------------------------------+
  | TRASEB   | ASCII to EBCDIC: VM station                           |
  | TREBAS   | EBCDIC to ASCII: VM station                           |
  | TREBASNU | EBCDIC to ASCII, Blanks to nulls: VM station          |
  | TRLOUPEB | EBCDIC lower to upper case: VM station                |
  | TRASEBUP | ASCII to EBCDIC, lower to upper case: VM station      |
  | TRASEBQS | Expanded ASCII to EBCDIC for all hex numbers          |
  | TREBASQS | Expanded EBCDIC to ASCII for all hex numbers          |
  +----------+-------------------------------------------------------+
```

5.50 URBUFFER

URBUFFER dynamically changes the size of the unit record I/O buffer used for chaining print and punch dataset disposes. By default, it can be used only by a station operator who has a station privilege of E.

Format

URBUFFER	<prtsize punsize> <QUERY >

where:

prtsize specifies the size, in pages, of the print unit record buffer. The value can be from 1 to 255.

punsize specifies the size, in pages, of the punch unit record buffer. The value can be from 1 to 255.

QUERY returns the current unit record buffer settings.

Usage Notes

1. The larger the unit record buffer, the more print or punch records processed with one Start I/O (SIO). Larger unit record buffers are useful for larger dataset disposes when only a few streams are active at one time.

2. You can use an asterisk (*) as a placeholder for "prtsize" if you want to change only the punch unit record buffer size.

6 CMS AND TSO/E COMMANDS

This section discusses the CMS commands that are particularly useful for VM station users:

- HELP for getting on-line information on VM station commands and subcommands
- SENDFILE for submitting job files to COS

It also explains the TSO/E TRANSMIT command, needed for submissions from MVS systems.

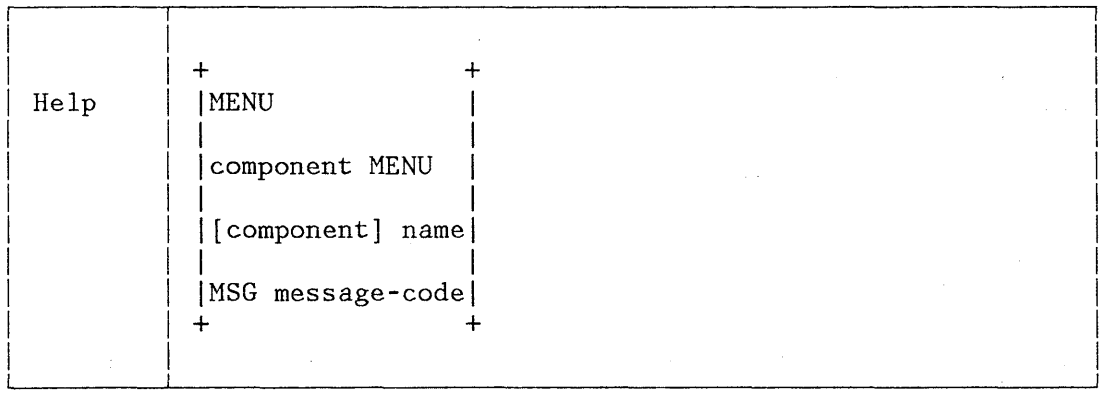
On both VM and MVS systems, the command used to retrieve files disposed from COS is RECEIVE. Since no special options are required for either the CMS RECEIVE command or the TSO/E RECEIVE command to receive data from the VM station, those commands are not described here.

Only those options that are meaningful within the VM station context are presented for each command. For full explanations of these commands, refer to the CMS Command and Macro Reference manual (SC19-6211) from IBM's VM/SP documentation set, or to the TSO Extensions Command Lanuage Reference manual (SC28-1307) from IBM's TSO/E documentation set.

6.1 HELP (CMS)

The HELP command gives you access to the CMS Help facility.

Format:



where:

MENU results in a menu of Help topics being displayed.

component MENU
requests a menu of Help topics on the general topic named by "component". Possible values for "component" that are of special interest to VM station users are:

STATION
ACQUIRE
DISPOSE
FETCH
CRINT
CRSTAT

component name
is equivalent to entering "HELP component MENU" and then selecting "name" from the menu. You can bypass upper level menus by specifying the particular topic you wish to see in this way.

"Component" is optional in this form.

MSG message-code
displays help on a particular VM station message.

All station messages are identified by a 10-character code, the first 3 characters of which are always "CRI". When specifying a "message-code", you must reduce the 10-character code to 8 characters. To do this, omit "RI" from the "CRI" prefix. For example, the message CRIGCI001E would be abbreviated to CGCI001E.

Examples

1. HELP STATION MENU

   Results in a menu of VM station topics being displayed. From the menu, you can request further help on all the VM station commands, plus the COS control statements that are supported by the VM station.

2. HELP CRINT MENU

   Presents a menu of CRINT topics, including the format of the CRINT command and all the subcommands you can enter from within CRINT.

3. HELP DISPOSE EXAMPLES

   Takes you directly to the "Examples" entry on the DISPOSE help menu.

4. HELP ACQUIRE FROMDISK

   Provides information on the ACQUIRE statement that is specific to acquires from disk. ("FromDisk" is one of the entries on the ACQUIRE help menu.)

5. HELP FETCH FORMAT

   Takes you directly to an explanation of the format of the FETCH control statement. ("Format" is one of the entries on the FETCH help menu.)

6. HELP CRINT SAVE

   Requests help on the CRINT subcommand SAVE. ("SAVE" is one of the entries on the CRINT help menu.)

7. HELP MSG CDSK00BI

   Requests help on the error message CRIDSK00BI. (You must remove "RI" from the "CRI" prefix when specifying a message.)

6.2 SENDFILE (CMS)

You can use the CMS SENDFILE command to send a file to COS as a job.

Format:

SENDFile	fn ft [fm]] [[TO] stationid] [(options...[])]] options: [Filelist|NOFilelist] [Log|NOLog] [Type|NOType]

where:

fn ft fm — specifies the filename, filetype, and filemode of the file to be sent. If "*" is specified for the filemode, all accessed disks are searched until the first file named by "fn ft" is found. You can omit the filemode if "stationid" would not be misinterpreted as a filemode, or if the keyword TO is used. In this case, the default filemode is "*".

stationid — is the VM userid of the COS system you are submitting the job to. See your CRI Site Analyst for the appropriate values.

Options:

Filelist — specifies that "fn ft fm" is a list of files in the format of a CMS EXEC file produced by the LISTFILE command issued with the EXEC option, or a file saved from a FILELIST command. You can use this option to send multiple files with only one invocation of SENDFILE.

NOFilelist — specifies that the file is not a list of files. This is the default.

Log — specifies that the recipient, date, and time of this file transmission are logged in a file called "userid NETLOG."

NOLog — specifies that this file transmission is not to be logged.

Type — specifies that the files sent and the "stationid" to which the files were sent are displayed at the terminal. This is the default.

NOType — specifies that no information is to be displayed.

6.3 TRANSMIT (TSO/E)

Use the TRANSMIT command to submit jobs and save datasets from MVS to COS through the VM station.

Format:

```
TRANSMIT | nodeid.stationid <DSNAME(dsn)    > SEQ [MESSAGE]
         |                  <DDNAME(ddname) >
```

where:

nodeid — specifies the remote VM system as it is known to the local MVS system.

stationid — specifies the VM userid of the station. See your CRI Site Analyst for the appropriate value.

DSNAME(dsn) specifies the name of the data set to be transmitted.

DDNAME(ddname)
specifies the 1- to 8-character DD name of a preallocated file to be transmitted.

SEQ — specifies a sequential data set; required by the VM station.

MESSAGE — specifies that you are to be prompted for a message that accompanies a transmitted data set to be saved as a COS permanent dataset.

Usage Notes

1. Only single sequential data sets can be sent to the VM station.

2. You must specify the MESSAGE option to save an MVS data file as a COS permanent dataset. When prompted for the message text, enter the permanent dataset options as defined by the CRSEND command (see subsection 3.6). The message must be a single line.

   Separate values from keywords with equal signs (=), and separate multiple options with commas, as shown in this format diagram:

```
DC=ST,ID=uid,DF=df,PDN=pdn,ED=ed,US=us,RT=rt,R=readcw,
    W=writecw,M=maintcw,AC=account,APW=apw,UPW=upw,
        PAM=mode,<LOG|NOLOG>
```

See subsection 3.6 for explanations of these fields.

3. The VM station can route a dataset disposed from COS to an MVS TSO/E user, even if the DISPOSE is contained in a COS job that was not submitted from MVS. To take advantage of this feature, specify a CP TAG of the following form:

   ```
   mvs-node tso-user 50 W=tso-user
   ```

   You can specify this tag either in the COS DISPOSE statement TAG field, or with the CP TAG DEV PUN command at job submission time.

APPENDIX A: CHARACTER SET

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
00	00	NUL	NUL
01	01	SOH	SOH
02	02	STX	STX
03	03	ETX	ETX
04	00	SEL	NUL
05	09	HT	HT
06	00	RNL	NUL
07	7F	DEL	DEL
08	00	GE	NUL
09	00	SPS	NUL
0A	00	RPT	NUL
0B	0B	VT	VT
0C	0C	FF	FF
0D	0D	CR	CR
0E	0E	SO	SO
0F	0F	SI	SI
10	10	DLE	DLE
11	11	DC1	DC1
12	12	DC2	DC2
13	00	DC3	NUL
14	00	RES/ENP	NUL
15	13	NL	DC3
16	08	BS	BS
17	00	POS	NUL
18	18	CAN	CAN
19	19	EM	EM
1A	00	UBS	NUL
1B	00	CU1	NUL
1C	1C	IFS	FS
1D	1D	IGS	GS
1E	1E	IRS	RS
1F	1F	ITB/IUS	US
20	00	DS	NUL
21	00	SOS	NUL
22	1C	FS	FS
23	00	WUS	NUL
24	00	BYP/INP	NUL
25	0A	LF	LF
26	17	ETB	ETB
27	1B	ESC	ESC
28	00	SA	NUL
29	00	SFE	NUL
2A	00	SM/SW	NUL
2B	00	CSP	NUL
2C	00	MFA	NUL

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
2D	05	ENQ	ENQ
2E	06	ACK	ACK
2F	07	BEL	BEL
30	00	undefined	NUL
31	00	undefined	NUL
32	16	SYN	SYN
33	00	IR	NUL
34	00	PP	NUL
35	1E	TRN	RS
36	00	NBS	NUL
37	04	EOT	EOT
38	00	SBS	NUL
39	00	IT	NUL
3A	00	RFF	NUL
3B	00	CU3	NUL
3C	14	DC4	DC4
3D	15	NAK	NAK
3E	00	undefined	NUL
3F	1A	SUB	SUB
40	20	SP	SP
41	00	RSP	NUL
42	00	undefined	NUL
43	00	undefined	NUL
44	00	undefined	NUL
45	00	undefined	NUL
46	00	undefined	NUL
47	00	undefined	NUL
48	00	undefined	NUL
49	00	undefined	NUL
4A	00	¢	NUL
4B	2E	.	.
4C	3C	<	<
4D	28	(	(
4E	2B	+	+
4F	5E	|	¬
50	26	&	&
51	00	undefined	NUL
52	00	undefined	NUL
53	00	undefined	NUL
54	00	undefined	NUL
55	00	undefined	NUL
56	00	undefined	NUL
57	00	undefined	NUL
58	00	undefined	NUL
59	00	undefined	NUL
5A	21	!	!
5B	24	$	$

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
5C	2A	*	*
5D	29	)	)
5E	3B	;	;
5F	5E	¬	¬
60	2D	-	-
61	2F	/	/
62	00	undefined	NUL
63	00	undefined	NUL
64	00	undefined	NUL
65	00	undefined	NUL
66	00	undefined	NUL
67	00	undefined	NUL
68	00	undefined	NUL
69	00	undefined	NUL
6A	7C		
6B	2C	,	,
6C	25	%	%
6D	5F		
6E	3E	>	>
6F	3F	?	?
70	00	undefined	NUL
71	00	undefined	NUL
72	00	undefined	NUL
73	00	undefined	NUL
74	00	undefined	NUL
75	00	undefined	NUL
76	00	undefined	NUL
77	00	undefined	NUL
78	00	undefined	NUL
79	60		
7A	3A	:	:
7B	23	#	#
7C	40	@	@
7D	27	'	'
7E	3D	=	=
7F	22	"	"
80	00	undefined	NUL
81	61	a	a
82	62	b	b
83	63	c	c
84	64	e	d
85	65	d	e
86	66	f	f
87	67	g	g
88	68	h	h
89	69	i	i
8A	00	undefined	NUL

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
8B	00	undefined	NUL
8C	00	undefined	NUL
8D	00	undefined	NUL
8E	00	undefined	NUL
8F	00	undefined	NUL
90	00	undefined	NUL
91	6A	j	j
92	6B	k	k
93	6C	l	l
94	6D	m	m
95	6E	n	n
96	6F	o	o
97	70	p	p
98	71	q	q
99	72	r	r
9A	00	undefined	NUL
9B	00	undefined	NUL
9C	00	undefined	NUL
9D	00	undefined	NUL
9E	00	undefined	NUL
9F	00	undefined	NUL
A0	00	undefined	NUL
A1	7E		
A2	73	s	s
A3	74	t	t
A4	75	u	u
A5	76	v	v
A6	77	w	w
A7	78	x	x
A8	79	y	y
A9	7A	z	z
AA	00	undefined	NUL
AB	00	undefined	NUL
AC	00	undefined	NUL
AD	5B	undefined	NUL
AE	00	undefined	NUL
AF	00	undefined	NUL
B0	00	undefined	NUL
B1	00	undefined	NUL
B2	00	undefined	NUL
B3	00	undefined	NUL
B4	00	undefined	NUL
B5	00	undefined	NUL
B6	00	undefined	NUL
B7	00	undefined	NUL
B8	00	undefined	NUL
B9	00	undefined	NUL

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
BA	00	undefined	NUL
BB	00	undefined	NUL
BC	00	undefined	NUL
BD	5D	]	]
BE	00	undefined	NUL
BF	00	undefined	NUL
C0	7B		
C1	41	A	A
C2	42	B	B
C3	43	C	C
C4	44	D	D
C5	45	E	E
C6	46	F	F
C7	47	G	G
C8	48	H	H
C9	49	I	I
CA	00	SHY	NUL
CB	00	undefined	NUL
CC	00	undefined	NUL
CD	00	undefined	NUL
CE	00	undefined	NUL
CF	00	undefined	NUL
D0	7D		
D1	4A	J	J
D2	4B	K	K
D3	4C	L	L
D4	4D	M	M
D5	4E	N	N
D6	4F	O	O
D7	50	P	P
D8	51	Q	Q
D9	52	R	R
DA	00	undefined	NUL
DB	00	undefined	NUL
DC	00	undefined	NUL
DD	00	undefined	NUL
DE	00	undefined	NUL
DF	00	undefined	NUL
E0	5C	\	\
E1	00	NSP	NUL
E2	53	S	S
E3	54	T	T
E4	55	U	U
E5	56	V	V
E6	57	W	W
E7	58	X	X
E8	59	Y	Y

EBCDIC Code	ASCII Code	EBCDIC Character	ASCII Character
E9	5A	Z	Z
EA	00	undefined	NUL
EB	00	undefined	NUL
EC	00	undefined	NUL
ED	00	undefined	NUL
EE	00	undefined	NUL
EF	00	undefined	NUL
F0	30	0	0
F1	31	1	1
F2	32	2	2
F3	33	3	3
F4	34	4	4
F5	35	5	5
F6	36	6	6
F7	37	7	7
F8	38	8	8
F9	39	9	9
FA	00	|	NUL
FB	00	undefined	NUL
FC	00	undefined	NUL
FD	00	undefined	NUL
FE	00	undefined	NUL
FF	00	EO	NUL

INDEX

READER COMMENT FORM

IBM VM Station Command and Reference SI-0160

Your comments help us to improve the quality and usefulness of our publications. Please use the space provided below to share with us your comments. When possible, please give specific page and paragraph references.

NAME _____

JOB TITLE _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DATE _____

CRAY RESEARCH, INC.

CUT ALONG THIS LINE

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO 6184 ST PAUL, MN

POSTAGE WILL BE PAID BY ADDRESSEE

CRAY RESEARCH, INC.

2520 Pilot Knob Road
Suite 350
Mendota Heights, MN 55120
U.S.A.

Attention:
PUBLICATIONS

READER COMMENT FORM

IBM VM Station Command and Reference SI-0160

Your comments help us to improve the quality and usefulness of our publications. Please use the space provided below to share with us your comments. When possible, please give specific page and paragraph references.

NAME _____

JOB TITLE _____

FIRM _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DATE _____

CRAY RESEARCH, INC.

CUT ALONG THIS LINE

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO 6184 ST PAUL, MN

POSTAGE WILL BE PAID BY ADDRESSEE

CRAY RESEARCH, INC.

Attention:
PUBLICATIONS

2520 Pilot Knob Road
Suite 350
Mendota Heights, MN 55120
U.S.A.