

COM-PASS - Parallel Transaction Utility

COM-PASS parallel transaction handling means that you are able to start, suspend, and restart a transaction without the need to shut down or end other transactions. Note that when you suspend a transaction, it is temporarily saved and restored without loss of information. You can suspend and restart transactions by either using a function key or issuing a command.

You can have up to nine suspended transactions and one active transaction. The COM-PASS Main Menu allows you to monitor which transactions are suspended and enables you to restart suspended transactions.

This chapter covers the following topics:

- COM-PASS Features - Overview
 - COM-PASS Standard Mode: The COM-PASS Menu
 - COM-PASS Expert Mode
 - COM-PASS TPF Mode
 - Parallel Transaction Handling
 - COM-PASS Commands
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COM-PASS Features - Overview

The special features of COM-PASS are outlined in the following paragraphs.

COM-PASS Menus

The front-end utility menus, which provide you with an enhanced interface to the Com-plete utilities, are a major feature of the COM-PASS utility. A typical COM-PASS utility menu displays all of the commands applicable to the utility, as well as all operands and syntax requirements. The commands that you select and issue from the menu are syntax checked and an error message is returned if invalid syntax is detected.

The standard COM-PASS Main Menu, the Expert Mode Menu, as well as the TPF Mode Menu are discussed later in this chapter.

Online Help Facility

The Help facility consists of an overview of all commands and operands for a function, the syntax rules for its use, and a glossary of all terms that are associated with the function. All help information is related to the current version of Com-plete.

Note that you can extend the Help facility with your own user-written help system. For additional information, see the chapter *UUTIL - Menu-driven Utility Functions*.

User Profile Definition

COM-PASS allows each user to be defined to Com-plete in the form of a user profile. Your profile consists of:

- The Com-plete characteristics that would be defined if COM-PASS was not installed;
- The extent to which you can access and use Com-plete, COM-PASS, and user functions. You can also have a startup transaction defined that will be invoked immediately after you log on (defaults to USTACK);
- PF key settings;
- Default parameter settings;

Note that you can change only the PF key and default parameter settings in your user profile, unless you are a control user.

User Site Information

To select and display online information concerning an installation where COM-PASS is installed, you can use the SI function of the UUTIL utility. This information can be defined and modified by control users. For additional information on site-specific information, see the chapter *UUTIL - Menu-driven Utility Functions*.

The Security System

All COM-PASS users are defined to COM-PASS by a user profile, as described above. Part of your profile contains your transaction authority, which defines to what extent you are allowed to access and use COM-PASS, Com-plete, and user functions.

Each user can have up to 27 individual functions defined. These consist mainly of menus containing Com-plete and utilities that consist of several transactions. Your COM-PASS menu lists the functions defined for you, together with an information line concerning each function's use.

You will either be restricted to the up to 27 functions that can be defined for display on your COM-PASS main menu, or be allowed to use other functions as well.

The startup transaction is part of the security system and simplifies control over COM-PASS, Com-plete, and user functions. To take you to the main menu, the startup program is defined to be a special COM-PASS program called USTACK. For additional information on USTACK, see the section on the UM function in **UUTIL - Menu-driven Utility Functions**.

Mailboxes and Message Switching

COM-PASS also provides facilities for sending messages to a single user, a single terminal, a group of users, or a group of terminals. See the chapter *UM - Message Switching Utility* for more information.

The mailbox message system ensures that messages you cannot receive immediately are retained and will be delivered when you log on.

Entire Connection

If the appropriate version of ENTIRE CONNECTION is installed on a workstation, then COM-PASS supports the use of windows to display the current active and suspended programs. Please see the ENTIRE CONNECTION documentation for further details.

Mode Type

Within COM-PASS, you can define different modes. This means you can select one of three menus, each with a different layout and a different subset of available functions. Select a mode using the M=<type> command. Possible mode types are:

M=S	Standard mode. The COM-PASS Main Menu offering Com-plete services available to you.
M=E	Expert mode. Alternative to standard mode, making work easier for you if you use a certain subset of utilities frequently.
M=T	TPF mode. Reserved for users of ADABAS TPF.

The following sections describe the three available modes listed above in detail.

COM-PASS Standard Mode: The COM-PASS Menu

In standard mode, once you have logged on successfully, the COM-PASS Main Menu is displayed (if your startup program is set to USTACK). An example of a COM-PASS Main Menu is shown in the following figure.

16:58:06	TID	6	COM-5.1	User MBE	21.04.97
			-- COM-PASS --		USTS
Suspended Programs			Program Services		
-----	-----	-----	-----	-----	-----
Programs	Name	C Level	PF	Service Description	Programs ID PF
-----	-----	-----	---	-----	---
		1		Storage display	USTOR A
		2		PDS functions	UPDS B
		3		Online control	UCTRL C
		4		JES functions et al	UQ D
		5		THE Editor	UEDIT E
		6		Online dumps	UDUMP F
		7			
		8			
		9		Map definition	UMAP I
Enter Input:				HELP	?
-----	-----	-----	-----	-----	-----
LU Name: SHRDAEN	HC TID:		Recall: =	Language: 001	
Devtype: 3270 VS	Device:		Suspend: < PA1	Case : Upper	
Lines : 24	Key: PA2		Jump: NO NO		
Columns: 80					

The Main Menu is your personal view of Com-plete.

The fields pertaining to the suspended programs/transactions on the left side of this menu are explained in the following table:

Field	Meaning
PROGRAMS	Your installation's name for each suspended program.
NAME	The (optional) name you can supply for a suspended program. Note: The character string you use for the name must not start with a "-"; this would cause the program to be removed from the suspended program list. See the subsection Deleting a Suspended Transaction later in this section.
C	Case setting of the level (L=lower, U=upper). You can modify this.
LEVEL	The level number of the suspended programs. When you invoke the "LEVEL=" function, COM-PASS marks the level you select with "<", and the last suspended level with "*".
PF KEY	The Program Function (PF) key setting for the program. You can specify the PF Key setting either on this screen or on the User Profile definition screen (using function UM of UUTIL).

The right side of the COM-PASS screen lists a standard set of program services available to you. Note that the system administrator at your site defines the programs that you can use.

Field	Meaning
SERVICE DESCRIPTION	A description of the program/function.
PROGRAMS	The name of the program/function.
ID	A single character identifier for the program/function.
PF KEY	The optional PF key assigned to the program/function.

The terminal-specific information at the bottom of the COM-PASS Main Menu screen is summarized in the following table.

Field	Meaning
LU Name	The user terminal name; if a VTAM network, the name of the VTAM device.
Device Type	The terminal classification as defined by Com-plete.
Upper/Lower Case	Indicates the default case; (you can modify this by using the UP and LOW commands). For additional information, see the section Direct Commands later in this chapter.
Lines	The number of addressable lines on your terminal.
Columns	The number of addressable columns on your terminal.
Suspend	The character you use to suspend one transaction and initiate another, and the key you can use to suspend the current transaction.
Hard Copy Device	The name of the hard copy device assigned in UUTIL.
Jump	The jump character and key used to suspend the current transaction and automatically move to the next.
HC TID	The TID of the hard copy device assigned in UUTIL.
Recall	The character you use to recall a suspended transaction and suspend your current transaction

COM-PASS Expert Mode

COM-PASS Expert Mode is an alternative way to work with COM-PASS. If you work within a subset of Com-plete utilities and use those utilities frequently, expert mode allows more complete tracking of utility usage.

Entering "MODE E", "M E", or "M=E" in the command line places you in this mode; entering "MODE S", "M=S", or "M S" takes you back to the standard COM-PASS Main Menu. The COM-PASS Expert Mode menu is shown in the following figure.

```

17:01:54      TID      6      COM-5.1      User MBE      21.04.97
                -- COM-PASS --                USTE
                001
Level          Suspended
Id            Programs  Last UEDIT    Last UQ       Last UPDS     Menu
-----
1
2
3
4
5
6
7
8
9
                I UMAP

Enter Input:                                HELP      ?

-----
LU Name: SHRDAEN      HC TID:          Recall: =      Language: 001
Devtype: 3270 VS     Device:         Suspend: < PA1  Case   : Upper
Lines  : 24          Key: PA2       Jump: NO NO
Columns: 80

```

In Expert Mode, the last used parameters of the UEDIT, UQ, and UPDS utilities are displayed for each level at which they were called.

Note that Expert Mode does not have all the features of the standard mode. If you need to use the standard mode features, simply change the mode back to standard (with the MODE S, M=S, or MS command). Note also, however, that when you switch between the two modes, no information is lost.

Last Default System

If you log off while in Expert Mode (using LOGOFF or *ULOG OFF), your last defaults (that is, the fields you marked in the Expert Mode menu) are automatically saved to a "last default" SD file. When you log on next time, you will still be in Expert Mode, and the defaults marked on the menu are still in place.

Note that you can force a reading of your last set of defaults while in Expert Mode by using the READ command, or force a saving of the defaults by using the SAVE command. For additional information on the READ and SAVE commands, see the section **Direct Commands**, later in this chapter.

Special Features

Expert Mode also gives you the ability to change the columns "LAST UEDIT", "LAST UQ", and "LAST UPDS".

If you place the cursor in one of these fields, and no program was suspended on that level, the corresponding utility will be started as follows:

UEDIT	as "UEDIT XX(YYYYYYYY)", when XX(YYYYYYYY) is specified in the column, where XX is the LIB ID and YYYYYYYY is the member.
UQ	as "UQ Q,JB=XX", when XX is specified in the field.
UPDS	as "UPDS L,XX", when XX is specified in the field, or: "UPDS D,XX(YYYYYYYY)", when XX(YYYYYYYY) is specified in the column, where XX is the LIB ID and YYYYYYYY is the member.

COM-PASS TPF Mode

COM-PASS TPF Mode is the mode reserved for ADABAS TPF users. The menu shows the PROGRAM SERVICES programs available to the user. Only the programs shown on the menu as it appears to you are available, for example:

```

17:05:32      TID      6          COM-5.1      User MBE      21.04.97
                -- COM-PASS --
                                USTT
                                001

      Service Description      Programs      ID      PF
      -----
      Storage display          USTOR        A
      PDS functions            UPDS         B
      Online control           UCTRL        C
      JES functions et al      UQ           D
      THE Editor               UEDIT        E
      Online dumps             UDUMP        F

      Map definition           UMAP         I

Enter Input:                                HELP      ?

-----
LU Name: SHRDAEN      HC TID:          Recall: =      Language: 001
Devtype: 3270 VS     Device:          Suspend: < PA1 Case   : Upper
Lines  : 24           Key: PA2        Jump: NO NO
Columns: 80

```

Working in TPF mode, certain restrictions apply:

- When you log on, you are presented with the TPF mode menu. You cannot change the mode or select any user-defined menu using the M= command. If you are in Standard or Expert mode, you can select TPF mode (M=T), but once in TPF mode, you cannot switch back, you must log off first.

Note:

To log off from TPF mode, use the LOGOFF command; ULOG OFF is not available.

- No suspended programs appear on the TPF mode menu, as you cannot suspend programs in TPF mode and return to the TPF mode menu, but you can use the Jump feature to move among programs listed in the menu. The Suspend and Recall characters should therefore not be set and used, as they may lead to unpredictable results.

Parallel Transaction Handling

As a COM-PASS user, you can carry out the following operations from any COM-PASS, Com-plete, or user function (but note the restrictions for TPF mode users mentioned above):

- Start a transaction from the COM-PASS Main Menu;
- Start a transaction from another transaction, automatically suspending the current transaction;
- Suspend a transaction and return to the COM-PASS Main Menu;*
- End a transaction and return to the COM-PASS Main Menu;
- Restart a suspended transaction from the COM-PASS Main Menu;*
- Restart a suspended transaction from another transaction;
- Delete a suspended transaction;*
- Temporarily deactivate COM-PASS.*

* Not available in TPF mode.

Note:

When you are using UEDIT or UED on several levels, COM-PASS ensures that you can recover the edit files on each level (including the level on which you are working) after a system failure. For additional information, see the section **COM-PASS Logon Procedure** in **ULOG - LOGON/LOGOFF Utility**.

Note that in this section, the term "transaction" refers to any utility, program, or function.

Starting a Transaction from the COM-PASS Main Menu

COM-PASS now makes up to 27 menu programs available for each user under the heading "Program Services" on the Main Menu. If you have more than nine programs, COM-PASS displays the current page and the total number of pages just to the right of "Program Services". For example, "1/3" means that you are on page one of three.

Note:

In TPF mode, only those program services displayed on the menu are available to you.

Provided that your User Profile permits the use of the transaction, there are five ways to start a transaction from the COM-PASS Main Menu:

1. Enter "*XXXXXX YYYYYY" on the command line under the *Enter Input* prompt. For the result, see the section **Direct Commands** later in this chapter;
2. Enter "n=XXXXXX YYYYYY" on the command line (not available in TPF mode). For the result, see the section **Direct Commands**;
3. Enter one of the characters from the "ID" column of "Program Services" on the command line. This starts the program whose name is to the left of that letter;

4. Press one of the PF Keys listed in the "PF" column under "Suspended Programs". This starts the program whose name is defined in that line;
5. Place the cursor in a field in the "Service Description" or "Programs" column of "Program Services", which contains a transaction you want to initiate, and press ENTER. This starts the program that is defined in that line.

Starting a Transaction from a Transaction

You can invoke a transaction and automatically suspend your current transaction using one of the following three methods:

Suspend *	Suspend Operation - To suspend (and save) the current transaction and invoke a new transaction, enter "<name", where "name" represents the transaction you wish to invoke. Note that if you do not supply a valid name, the current program will be restarted.
Recall *	Recall Operation - To suspend the current transaction and restart a suspended transaction, enter "=name", where "name" is either a level number (1 through 9), a name assigned to the level number, or a transaction name.
Jump	Jump Operation - to jump from the current transaction to the next transaction, enter ">" (jump char) or press the jump key. In mode S and E, jumping is only possible from one suspended transaction to the next suspended transaction. In mode T, jumping is possible from one program service to the next. The transaction from where you jumped to the next transaction is suspended internally, so every information will be available, if you jump in next time.

* Not available in TPF mode.

Note that using the suspend and recall operations differs from invoking another transaction by utility name (for example, invoking *ULIB while in UEDIT). Invoking a utility in this way *will not* suspend/save the current transaction; instead, the new transaction will overwrite the current transaction.

Suspending a Transaction and Returning to the COM-PASS Main Menu

Not available in TPF mode, but see the description of the Jump feature above.

To suspend a transaction and return to the Main Menu, press the SUSPEND key (PA1 or TRQ), or enter the SUSPEND ONLY command. Note that you can restart the suspended program at any time (see the subsection **Restarting a Suspended Transaction from the COM-PASS Main Menu** below).

You can also suspend the transaction at a specific level by assigning the transaction to a level before you start the transaction using the "LEVEL=x" special command (see the section **Direct Commands** later in this chapter).

Ending a Transaction and Returning to the COM-PASS Main Menu

Provided that USTACK is the startup transaction defined for you, you may end most transactions and return to the Main Menu by pressing the CLEAR key or entering "*EOJ" in the command line. If you are in NATURAL, enter "FIN" at any "MORE" or "NEXT" prompt .

Restarting a Suspended Transaction from the COM-PASS Main Menu

Not available in TPF mode, but see the description of the Jump feature above.

Suspended transactions are shown on the left half of the COM-PASS Main Menu. You can restart any one of them using one of the following three methods:

1. Enter one of the level numbers from the "Level" column of "Program Services" on the command line under the *Enter Input* prompt. This restarts the transaction whose name is in that line;
2. Press one of the PF Keys listed in the "PF" Column under "Suspended Programs". This restarts the transaction whose name is defined in that line;
3. Place the cursor in a non-empty field in the "Program" or "Name" column under "Suspended Programs", and press ENTER. This restarts the transaction whose name is defined in that line.

In TPF mode, use the Jump feature to return to an internally suspended program service from another.

In Standard and Expert mode, you can also restart (recall) a suspended transaction while in another transaction by using the convention "=name", where "=" is the default recall character. Note that "name" can be either:

- A level number;
- A name assigned to a number;
- A transaction name.

If no program is located that corresponds to "=name", COM-PASS interprets the command as "<name" (that is, SUSPEND command), and the last suspended program is restarted.

For additional information on the RECALL and SUSPEND commands, see the section **SUSPEND/RECALL/JUMP Commands** later in this chapter.

Deleting a Suspended Transaction

Not available in TPF mode.

To delete a suspended transaction displayed on the COM-PASS screen, simply type a "-" over the first character of the suspended transaction name.

Deactivating/Activating COM-PASS

Not available in TPF mode.

To temporarily deactivate COM-PASS, enter the "DISABLE" command on the COM-PASS Main Menu.

Note:

You can only use the DISABLE command if there are no programs suspended.

- To reactivate COM-PASS, enter "*USTACK".

COM-PASS Commands

There are three types of COM-PASS commands:

1. SUSPEND/RECALL/JUMP commands;
2. Direct commands;
3. Immediate commands.

The COM-PASS commands are discussed in the following sections.

SUSPEND/RECALL/JUMP Commands

The SUSPEND and RECALL commands are used during parallel transaction handling to suspend the current transaction and either invoke a new transaction (SUSPEND) or restart another suspended transaction (RECALL). These commands are discussed in the following table.

Command	Meaning
RECALL	Suspends the current transaction and invokes a suspended transaction.
	Consists of the recall character ("=" is the default) optionally followed by either:
	<ul style="list-style-type: none"> a. A level number, indicating that the transaction on that level is to be restarted. b. A user-defined name, indicating that the transaction associated with this name is to be restarted. c. A utility name, indicating that the transaction identified by the utility name is to be restarted.
	<p>Note: If you only enter "RECALL" on the COM-PASS Main Menu, the last suspended transaction will be restarted.</p> <p>Note that if the transaction cannot be identified, the RECALL command will have the same effect as the SUSPEND command. (See below.)</p>
RECALL LAST	Suspends the current transaction and recalls the last suspended transaction.
	Consists of the recall character entered twice, e.g., "==".
	Note that repeated use of the RECALL LAST command toggles between the two last-suspended transactions.
SUSPEND	Results in the saving/suspension of the present transaction and the execution of the remainder of the data supplied (for example, "<UQ Q" results in suspension of the present transaction and execution of the utility UQ with the argument Q).
	Consists of the suspend character ("<" is the default) followed by any named Com-plete transaction call (that is "*utility argument(s)").
SUSPEND ONLY	Suspends and temporarily saves the present transaction, and starts the COM-PASS startup transaction (the default is USTACK).
	Consists of the suspend character entered twice: "<<".
SUSPEND KEY	Pressing the SUSPEND key (either PA1 or TRQ) is equivalent to entering the "SUSPEND ONLY" command. (See above.)
JUMP CHARACTER	Results in saving/suspending of the present transaction and the execution of the next suspended transaction. (for mode TPF in execution of the next transaction from the "program services".)
JUMP KEY	Pressing the JUMP KEY is equivalent to entering the "SUSPEND CHARACTER". (See above.)

Note:

The RECALL and SUSPEND commands are not available in TPF mode.

For additional information on these functions, see the section **Parallel Transaction Handling** earlier in this chapter.

Direct Commands

On the COM-PASS Main Menu, you can enter direct commands on the COM-PASS command line under "Enter Input:". Note that you need not be concerned with case here, because COM-PASS transforms all input on the command line to upper case.

Note:

You can always omit the "=" between the keyword and parameter or replace it by a blank, if the keyword can be uniquely identified.

The following table contains all the available COM-PASS direct commands. The column headed Mode indicates for which mode type the command is available: S (Standard), E (Expert) and/or T (TPF).

Command	Mode	Description
ENTER-key	S,E,T	Moves one page of Suspended Programs forward (if you have more than nine programs suspended). Note: If the STAY mode is on, you will remain on the same page. (The STAY mode is indicated by a "*" before the page number, e.g., *1/3.) See the STAY command later in this table.
*XXXXXX YYYYYY	S,E,T	Starts the program XXXXXX on the first free level and (optionally) passes the parameter(s) YYYYYY to it.
A YYYYYY -	S,E,T	Starts the program marked with a character I YYYYYY A through I in the "ID" column on the right side of the COM-PASS Main Menu and (optionally) passes the parameter(s) YYYYYY to it.
1 - 9	S,E	Recalls the program marked with a number 1 through 9 in the "Level" column on the left side of the COM-PASS Main Menu. Note: In Expert Mode, if no program is suspended on that level, but the "Last Parameters" field on that line contains parameter information, the appropriate utility is started using that parameter.
1=XXXXXX YYYYYY	S,E	Starts program XXXXXX on a free level (1 9) that you assign it, and (optionally) passes parameter(s) YYYYYY to it.
9=XXXXXX YYYYYY		
+ or ENTER-key	S,E	Moves one page of Suspended Programs forward (if you have more than nine programs suspended). Note that this command also works in STAY mode.

Command	Mode	Description
+nnn	S,E	Moves nnn page(s) of Suspended Programs forward (if you have more than nine programs suspended).
-	S,E	Moves one page of Suspended Programs backward (if you have more than nine programs suspended).
-nnn	S,E	Moves nnn page(s) of Suspended Programs backward (if you have more than nine programs suspended).
CONTROL or CTRL	S,E,T	Starts the control facility *UCTRL.
DISABLE	S	Disables the stacking of programs. Note: This is only possible if no program is suspended. when you use this command, the COM-PASS screen disappears. To enable stacking again, enter "*USTACK".
HC=XXXXXX	S,E,T	Sets the hard copy device for this session. Note that XXXXXX can be either the hard copy device name or its TID number.
HC ?	S,E,T	Calls *USCHC, which enables you to choose a hard copy device from a list.
HC OFF	S,E,T	Removes the hard copy setting.
LEVEL=n	S,E	Sets the current suspend level to n (a number 1 through 9). COM-PASS marks this level with "<=" in the "Level" column. The next program is started on that level.
LOGON	S,E	Performs a Com-plete logon to the XXXXXX,YYYYYY userid XXXXXX. YYYYYY is the password and can be omitted. If so, you will be prompted for a password by *ULOG.  Warning: This command ends the session you are currently in.
LOGOFF	S,E,T	Performs a Com-plete logoff (*ULOG OFF).
LANG=nnn	S,E,T	Sets the national language to be used for COM-PASS menu and messages. Valid values are 1-225.
LOW	S,E,T	Sets the terminal to lower case.
UP	S,E,T	Sets the terminal to upper case.
MODE E, M=E, M E	S	Invokes COM-PASS Expert Mode.

Command	Mode	Description
MODE S, M=S, M S	E	Invokes the COM-PASS standard mode. Note: When you switch modes between E and S, all stacking information remains as it was. The only thing that changes is the map layout.
MODE T, M=T, M T	S,E	Invokes COM-PASS TPF Mode. Note: When you switch to mode T you cannot switch back to any other mode until you log off.
PAGE=n or P=n	S,E	Sets the page number of Suspended Programs to the number "n" (if you have more than nine programs suspended).
READ	E	Reads the last defaults for the Expert Mode menu from the last defaults SD file.
RECALL	S	Recalls the last suspended program.
SAVE	E	Saves the last defaults from the Expert Mode menu into the last defaults SD file.
STAY or STAY ON	S,E	Disables the automatic scrolling of pages of Suspended Programs. When STAY is on, a "*" will appear before the page number, e.g., *1/3.
STAY OFF	S,E	Enables the automatic scrolling of pages of Suspended Programs.
ALT	S,E,T	Sets the terminal to alternate screen size (if defined).
NALT	S,E,T	Reset the terminal to non-alternate screen size (if defined).
NTCMW ON/NTCMW=ON	S,E,T	Sets NATURAL Workstation Communication mode.
NTCMW OFF/NTCMW=OFF	S,E,T	Resets NATURAL Workstation Communication mode.
SETnn -	S,E,T	Terminates the indicated (nn) suspend level. This is equivalent to typing a "-" over the first character of the suspended program.

Immediate Commands

Com-plete also provides a series of utility functions that you can execute at any time. You can type in these immediate commands either while on the COM-PASS Main Menu, or while a utility program is in operation. Note that each function executes only once, so when you press the ENTER key a second time, you are returned to the processing environment that was previously active, that is, to the COM-PASS Main Menu or the utility program.

Each immediate command has the following format:

***command.parameter**

where *command* is a single letter that represents the command to be executed. Valid commands are described below.

The command identifier is followed by a period (.), which is followed by a parameter. The form of the parameter depends on the command used. Each parameter is defined in the following sections with its corresponding command.

C Command

The C command should be followed by a two- or four-hexadecimal digit parameter. The digits are interpreted as an IBM System/370 Operation Code and the following information is displayed:

- The name of the command;
- The command mnemonic;
- The hexadecimal operation code;
- The command format (RR, RX, RS, SE, S, or SS);
- The operand format [R1, D1 (L,B1), D2 (X2,B2), etc.];
- Attributes.

Note that this information is displayed using the conventions from the *IBM System/370 Principles of Operation documentation*.

Command letter:	C
Parameter:	A two- or four-digit hexadecimal number
Example:	*C.1A
Output:	NAME: ADD REGISTER MNEMONIC: AR OPCODE: 1A FORMAT: RR OPERANDS: R1, R2 ATTRIB: CONDITION CODE IS SET

Note:

The RRE and SSE instruction formats are not supported.

In the case of S-format instructions, you should input a four-digit op-code. In all other cases, a two-digit op-code is required.

E Command

The E command displays the hexadecimal digits that denote the EBCDIC values of the characters in the parameter string.

Command letter:	E
Parameter:	From 1 to 40 printable characters
Example:	*E.ABCXYZ
Output:	C1C2C3E7E8E9

Note:

The system may change letters from lower to upper case.

N Command

The N command displays the hexadecimal equivalent of the decimal number given as parameter.

Command letter:	N
Parameter:	An unsigned decimal number from 0 to 2147483647
Example:	*N.667646
Output:	A2FFE

Note that the parameter must not be longer than 31 bits.

P Command

The P command displays the PF key assignments (if any) for the level on which it is issued.

Command letter:	P
Parameter:	ALL (optional)
Examples:	*P.ALL *P.
Output:	PF01/D = LR=LAST-10 PF02/D = LR=FIRST PF03 = DS=1 PF04 = SI=CC ... PF24/D = Q,JB=_____

Notes:

1. A "/D" following a PF key name indicates that this key's data is displayed on the terminal before execution. The data can be modified, and the command is executed when ENTER is pressed.
2. When a PF key with the display option contains underscores (see the PF24 key in the above example output), the cursor is automatically positioned to the first underscore when the data is written to your terminal.
3. If the system defaults set by the system administrator have not been overridden

using the FK function of UUTIL, the system defaults are displayed.