

iQuery Prompter

The need to occasionally prompt the end-user for information used in SQL statements can be an annoying challenge. Certainly, we learned from the CL Command Definition language that prompts are both important and a valuable tool to perform basic data validation. Unfortunately for RPG and SQL Developers, prompting meant starting up SDA or Edit Source and creating a DDS-based prompt then using it in an RPG or CL program to prompt and receive the end-user's input.

The new SQL iQuery Prompter solves this problem by providing a dynamic screen prompt and input validation options similar to both DDS and Command Definition Language. The user-input is returned to your SQL iQuery Script to be used however you see fit.

The iQuery Prompt has several commands that may be used to create custom prompts. These commands all use a keyword parameter syntax to provide custom settings for the command. Each keyword is separated by a comma and may contain various keyword values or attributes. When multiple attributes are specified for a parameter keyword, they are separated by a blank. For example:

```
DSPFIELD &REGION, row(4),col(3),dspatr(UL PC WHITE),prompt("Region code");
```

The following commands are supported:

- DSPWIN – Display Window. Defines the basic Window Properties
- DSPVAR or DSPFIELD – Display Field. Defines an input field to place onto the screen within the window defined with DSPWIN.
- DSPTEXT – Display Text. Writes text to the window defined with DSPWIN.
- DSPERR - Displays the provided text in the Error Message line of the DSPWIN panel.

DSPWIN - The Display Window (DSPWIN) Command

This command defines the attributes of the window that is displayed. The attributes include, initial size of the window, border attributes, window title and some default properties for fields. In addition, the Fn keys may be identified on this command.

DSPWIN Parameter Keyword	Attributes	Description
DSPATR	Color attributes, RED, GRN, BLU, YLW, WHT, TRQ	The display attributes for the Title text of the Window.
DSPMODE	*DS3, *DS4, <u>*SAME</u>	Use this keyword to change the display mode from wide to narrow or narrow to wide. The default is to use the display in the current mode.
CHGINPDFT or DFTDSPATR	Color attributes, RED, GRN, BLU, YLW, WHT, TRQ, also most other DDS Display Attributes are	Use this keyword to change the default display attribute for input fields defined with the DSPVAR command. The UL attribute is the

	supported, such as UC, RI, UL, etc.	default for input fields. Also note that unlike DDS, character input fields default to upper/lower case vs UPPER CASE in DDS. To make all input fields default to UPPER CASE specify DFTDSPATR(UPPER) on the DSPWIN keyword, or directly in the DSPATR keyword on the DSPVAR command.
TITLE or PROMPT	Title Text for the Window	<p>Sets the Title Text for the Window. If not specified, "iQuery Prompt" is used as the Title text.</p> <p>The following special values may be embedded within the Text passed to this parameter.</p> <p>*DATE – Inserts the job date in job date format.</p> <p>*USER – Inserts the User Profile of the User running the iQuery Prompter.</p> <p>*SYSNAME – Inserts the system name of the system on which iQuery is running. If connected to a remove partition, this value shows the original system's name, not that of the target system.</p>
FKEYS or CMDKEYS	The Function Key text to display near the bottom of the Window.	<p>The Fn key text provided is scanned for standard Fn key patterns. The 4 options are:</p> <ul style="list-style-type: none"> • Fn=task (equals sign) • Fn:task (colon) • Fn-task (the minus sign) • Fn task (blank) <p>iQuery uses the text to enable the specified Fn keys. It searches your text for each of the above patterns. For example:</p>

		<p>FKeys("F3=Exit F10=Confirm")</p> <p>This text is displayed and is searched for Fn keys. F3 and F10 are detected and enabled for the Prompt window. Note the ENTER key is always enabled.</p>
DATFMT, DATEFMT or DFTDATFMT DFTDATEFMT	<p>The date format for Date Input fields</p> <p>All standard date format, such as *JOB, *MDY, *DMY, *ISO, etc. are supported.</p>	<p>Specify the default input date format for input fields that appear in the Window. This is the same format that the validation date values (VALUES, RANGE, COMP keywords on the DSPFIELD command) must be in.</p> <p>If unspecified, *JOB date format is used. When *JOB date format is used, all validation dates must be in ISO format, however the end-user is required to enter a valid *JOB date format date.</p> <p>See the RTNDATFMT keyword to control how dates are returned to the SQL iQuery Script.</p>
MSGLINE	*YES *NO	<p>Controls whether to include the message line as the last line of the Window. This is similar to the *NOMSGLIN option of the WINDOW keyword in DDS.</p> <p>If unspecified, the message line is included.</p> <p>Alternatively, users may specify the keyword NOMSGLIN without parameters, instead of MSGLINE(*NO).</p>
DFRWRT or DEFER	<u>*YES</u> *NO	<p>Controls whether to delay writing the fields and other data to the screen until the EXFMT operation is performed. If unspecified the default is *YES.</p>

RSTDSP or RESTORE	*YES <u>*NO</u>	When the iQuery Prompter is closed the saved image of the screen behind the window is restored immediately. RSTDSP(*NO) leaves the prompt window on the screen until the background app refreshes its screen. Normally, *NO is what users prefer, however if the background app does not refresh the screen and you need the iQuery prompt to be removed, specify RSTDSP(*YES).
FKEYLINE or CMDKEYLINE DFTFKEYLINE	<u>*YES</u> *NO	If the FKEYS or CMDKEYS keyword is NOT specified, iQuery Prompt inserts a Default F3=Exit F12=Cancel function key line. To omit this line, specify DFTFKEYLINE(*NO).
RTNDATFMT or RTNDATEFMT	Specifies the format that Date Input fields are converted to when returned to the iQuery Script. Any valid date format is supported. iQuery Prompter treats RTNDATFMT(*YMD) similar to *YMD0 in RPG IV where the date is returned in YMD format without a separator. However, *ISO, *USA, *JIS, and *EUR are always returned with a separator. To return a value of YMD, MDY, YMD with a separator specify those formats with the separator, such as *YMD/ The default is to return the date in the same format it was defined as (without the separator).	Specifies the format of Dates returned to the caller. When a user enters a date in the DATFMT format, it is converted into the format specified on the RTNDATFMT keyword before being stored in the returned session variable. For example, to have all input dates returned in CL date format, specify RTNDATFMT(*CYMD).
LABELWIDTH or LABEL-WIDTH	Width of Input Field Prompt Text Label, in characters.	iQuery Prompt DSPVAR commands allow users to specify prompt text that appears to the left of the input fields. By default,

		that area is 32-characters wide. In some situations where all prompt text is a lot shorter or a bit longer than 32 characters, users may decide to reduce or increase the prompt text length allocation. The Label-Width parameter of the DSPWIN command allows you to do that.
TOP	Starting (top) row for the window	Specify the top row for the window. If unspecified, TOP(5) is used.
LEFT	Starting (left) column for the window.	Specify the left-most column of the window. If unspecified, LEFT(3) is used.
ROWS	The height of the Window in rows.	Specifies the initial height of the Window. Normally this value is not specified because all iQuery Prompt windows are auto-expanded as needed.
COLS	The width of the Window in columns.	Specifies the initial width of the Window in columns. If unspecified, the default is 68 columns for *DS3 mode and 120 columns for *DS4 mode.
MSGID	Message ID	A message ID of the message written to the Message Line when the Window first appears. If this keyword is specified, the MSGFILE keyword should also be specified to identify the message file where the msgid text is retrieved. NOTE: If no MSGID or MSGFILE keywords are used, then then msgid(QIQ0000) MSGFILE(COZLANGEN) is used to set the window prompt title text.
MSGFILE	message-file-library/message-file	The qualified message file that contains the message ID specified on the MSGID parameter. This

		message file may be qualified or just the message file name itself. If unspecified QCPFMSG is used.
MSGTEXT	Message Line Text	The text that appears on the Message Line when the Window is displayed. Use this keyword for ad-hoc message line text instead of the MSGID/MSGFILE keywords.
WDWBORDER or BORDER	Window-Border-Pattern <i>display attributes</i>	<p>The window border characters and optional display attributes. The border pattern is an 8-character pattern.</p> <p>1223 4 5 6778</p> <p>Where the number in the above pattern, corresponds to the border pattern character. Special values *DOT, *DASH, *LINE, *BLANKS and *GUI are supported. *GUI is the default unless the emulation session does not support ENPTUI display mode, then *DOT is the default.</p> <p>The optional second parameter applies to character (non-GUI) borders. It can be a list of attributes, such as color and/or RI (reverse image). All values after the border pattern are considered border display attributes.</p> <p>For example:</p> <p>WDWBORDER(*BLANKS RI)</p> <p>This creates a border with no characters (blanks) that is set to reverse image.</p>
DISABLE	Function key to disable.	By default, the ENTER key and F3 key are enabled for all Prompt

		Windows. Other keys are specified on the FKeys() parameter. To disable any key, such as the ENTER or F3 key, specify that key for the DISABLE parameter. For example, to disable the ENTER key, specify DISABLE("ENTER")
ENABLE	Function key to enable.	Use this parameter keyword to enable specific function keys. For example, enable("F10") enables Function Key 10.
FULLSCREEN	*YES <u>*NO</u>	FULLSCREEN(*YES) forces the prompt to be full-screen instead of in a window. The default is FULLSCREEN(*NO)

Example Use of DSPWIN Command

The following are examples of setting up/initializing the SQL iQuery Prompt window.

```
DSPWIN dspatr(wht), title("Cozzi Productions, Inc. - *sysname");
```

```
DSPWIN fkeys("F10=Confirm. F12=Cancel"), "Product Inquiry - *USER";
```

```
DSPWIN rtndatfmt(*YMD), dfrwrt(*NO), chginpdft(RI UPPER), prompt("IBM Corp.");
```

You'll note from the above examples that the Prompt Window Text may be specified on the TITLE or PROMPT keywords, or it may appear as simple quoted text as the last entry on the DSPWIN command.

DSPFLD/DSPFIELD - The Display Field (DSPFLD or DSPFIELD) Command

DSPVAR - The Display Variable (DSPVAR) Command

The DSPVAR command has 2 aliases: DSPFLD and DSPFIELD. They are synonyms and may be used interchangeably. The DSPVAR command is used to display an SQL iQuery Session Variable on the screen and to define the attributes of the variable for the screen. The definition syntax is similar to DDS, however it more closely resembles CL Command Definition statements.

```
DSPVAR &var,row,column, optional keywords, prompt-text;
```

The first parameter must be the name of a Session Variable whose data is being displayed. If this variable has already been defined, its current value is used as the Initial value for the input field. If it has not previously been defined, no initial value is shown to the end-user unless the INZ keyword also appears. The INZ keyword overrides any existing value in the variable at the time the DSPVAR is run.

The second and third parameters are the location for the field within the Window. No keywords are needed if the row and column locations are specified immediately following the session variable name. However, the ROW() and COL() keywords may be specified instead of the positional values. When ROW and COL are used, they do not need to be the 2nd and 3rd parameters. If no row and column are specified, the iQuery Prompter will "auto layout" the fields based on the context of the statement and the last used positions.

Following the Session Variable name and the optional row and column locations, a set of parameter keywords that define the field being displayed are specified. Typically, the data type and length are specified along with optional keywords. For example:

```
dspvar &CustNo,4,3,dec(7),inz(1001), comp(ge 1000),prompt("Customer number");
```

The above DSPVAR statement defines a field named CUSTNO that is 7-digits long, has an initial value of 1001 and restricts the user entry to 1000 or more.

Parameter Keyword	Attributes	Description
ROW	row, *SAME, or *NEXT or unspecified.	<p>Specify the row within the window where this field shall appear. If unspecified or *NEXT is specified, then the next row in the window will be used. If the special value *SAME is specified, the current line is used for the list field.</p> <p>See notes regarding "auto positioning" when multiple fields are being displayed.</p>
COL	Column or *NEXT	<p>Specify the column within the window where this field shall appear. If unspecified or *NEXT is specified, the following occurs:</p> <p>If a ROW(*NEXT) is specified or no ROW keyword is specified, the new field is placed immediately following the prior field (on the same line). If a ROW is specified, the field is placed on that row but in the next available column based on the prior column's end position.</p>
POS or LOC	Position or Location keywords may be used in place of ROW and COL. Specify the Row and Column within the POS(r c) or LOC(r c) keywords.	<p>Specify the field's location within the window. Use POS or LOC (they are synonyms) instead of the ROW/COL keywords. For example:</p> <p>ROW(6), COL(7) is the same as: POS(6 7) or LOC(6 7)</p>

DSPATR	RI UL HI WHT YLW BLU RED GRN TRQ, ME, LC UC UPPER LOWER PC PR	The display attribute(s) for this field. If more than one is specified, the attributes must be separated by one or more blanks. Note that <u>by default Lower Case is enabled</u> for all character input fields. To make something all upper case specify UP, UPPER or UC, UPPERCASE, or CAPSLOCK on the DSPATR keyword.
DATFMT or DATEFMT	Most date formats are supported, MDY, YMD, DMY, ISO, USA, EUR, JIS, and JOB or LOCAL.	The format that the end-user must type in the date for DATE input fields. All standard formats are supported. Users may enter the date with or without separators. The JOB and LOCAL formats use the job format.
RTNDATEFMT or RTNDATEFMT	<p>Most date formats are supported.</p> <ul style="list-style-type: none"> • *CL • *CYMD • *CYM • *DMY • *MDY • *YMD • *JOB • *ISO • *USA • *JIS • *EUR 	<p>The format that this field's date value is returned to the iQuery variable. For example, RTNDATEFMT(*CYMD) returns the date in CYYMMDD format. By default, *MDY, *DMY, *YMD and *JOB date formats do NOT include the separators in the return value. Thus, *MDY is the same as *MDY0</p> <p>If no RTNDATEFMT is specified, the date is returned in the format specified on the RTNDATEFMT specified on the DSPWIN command. If no RTNDATEFMT keyword is specified for DSPWIN, then the date is returned in the same format as DATE keyword for the field.</p>

char(<i>length</i>)	Length	<p>Defines a character input field. Specify the length of the CHARACTER field being defined. If no length is specified, a default length of 10 is used.</p> <p>If the length extends beyond the right border of the prompt window, it is truncated. Tip: You can reduce the default prompt text width using the LABELWIDTH parameter on the DSPWIN command. For example:</p> <p>DSPWIN ... , labelwidth(16);</p> <p>This causes the text that appears to the left of the input fields to be no more than 16 characters. The system default is set to 32.</p>
DEC(<i>length decimals</i>)	Length and optional decimal positions.	<p>Specify the length of the decimal (numeric) input field being defined. The length is used to define the input field's length. The decimal positions are currently ignored by iQuery Prompter, but may be entered and are used when returning the value to the iQuery Script.</p>
INT(<i>length</i>)	Length	<p>Specify the length of the input field that is defined as an integer (whole number). Decimal positions are not allowed in INT (integer) fields.</p>
ZONED or SIGNED(<i>length</i>)	Length	<p>Specify the length of the input field that is being defined as a numeric-only input value but supports the Field Minus key to exit the field.</p>

DATE(<i>date-format</i>)	Date Format	Defines the input field as a DATE entry field and validates the input based on the optional date-format parameter. The date format may be specified with the DATE() keyword, or on the DATFMT keyword on this same input field definition.
NAME	Name of the field	By default, the Session Variable name is assigned as the Field name. You may set a different name using this keyword. The ALIAS keyword also performs this function and may be used instead of the NAME() keyword.
PROMPT, TEXT, or LABEL	Field prompt text	The optional text to be displayed to the left of the input field. The input field is placed immediately following the prompt text. All prompt text uses fixed-length space on the screen. Therefore, all input fields are left-aligned in a column. If no prompt text is specified, then the input field is placed at the Row and Column location within the window.
INZ or INIT	Initial Value	Specifies the initial value to be written to the input field when initially displayed. If this value is not specified, the value currently stored in the Session Variable (if any) is displayed.
VALUES(list of values)	List of input values	Specifies a list of input values to restricts user input to. Each value must be separated by at least one space and be in the desired upper/lower case value.

<p>COMP(boolean comp-value)</p> <p>or</p> <p>REL(boolean comp-value)</p>	<p>GT LT GE LE EQ NE</p> <p>Compare-value</p>	<p>The first parameter of the COMP keyword is the boolean comparison operator. The input value is compared using this boolean operator to the second parameter, the compare value. A message is returned to the user if the comparison fails. For example: COMP(GT 100) if the user enters 99 an error is generated.</p>
<p>RANGE(low high)</p>	<p>Lower and Upper limit</p>	<p>Specifies the lower and upper limit for the input field. For example, RANGE(0 100) restricts the input that may be entered into this field to 0 through 100. Values outside of that range generate an error.</p> <p>For Date fields, the special values may be used:</p> <p>*JOB or *CURRENT – The Job Date is represented</p> <p>*MONTHSTR – The first of the month is represented</p> <p>*MONTHEND – The last date in the month is represented.</p>
<p>ALIAS</p>	<p>Variable name</p>	<p>Specify a name to use for validity checking messages. If not specified, the Variable name is used as the name.</p>

Note that for DATE input values, the special VALUES, COMP and RANGE value of *JOB or *CURRENT may be specified for the current job date. The values *MONTHSTR and *MONTHEND may be used to insert the First of the Month and the End of Month dates, respectively.

Example

Suppose you have an Excel report that is generated based on a date range. The standard date selection should be from the first of the month through the current date. This means your user needs to be prompted for two date values. The Starting Date and Ending Date for the Excel report.

```
DSPVAR &BEGINDATE,4,5, datfmt(*JOB), range(*monthstart *current), prompt('Starting date');
```

```
DSPVAR &ENDDATE,5,5 datfmt(*job), range(*monthstart *monthend),inz(*current), prompt('Ending Date');
```

DSPTEXT – Display Text in the Window

The DSPTEXT command allows you to write text to the screen.