

Xtend

editing software for Model204™



Features Document

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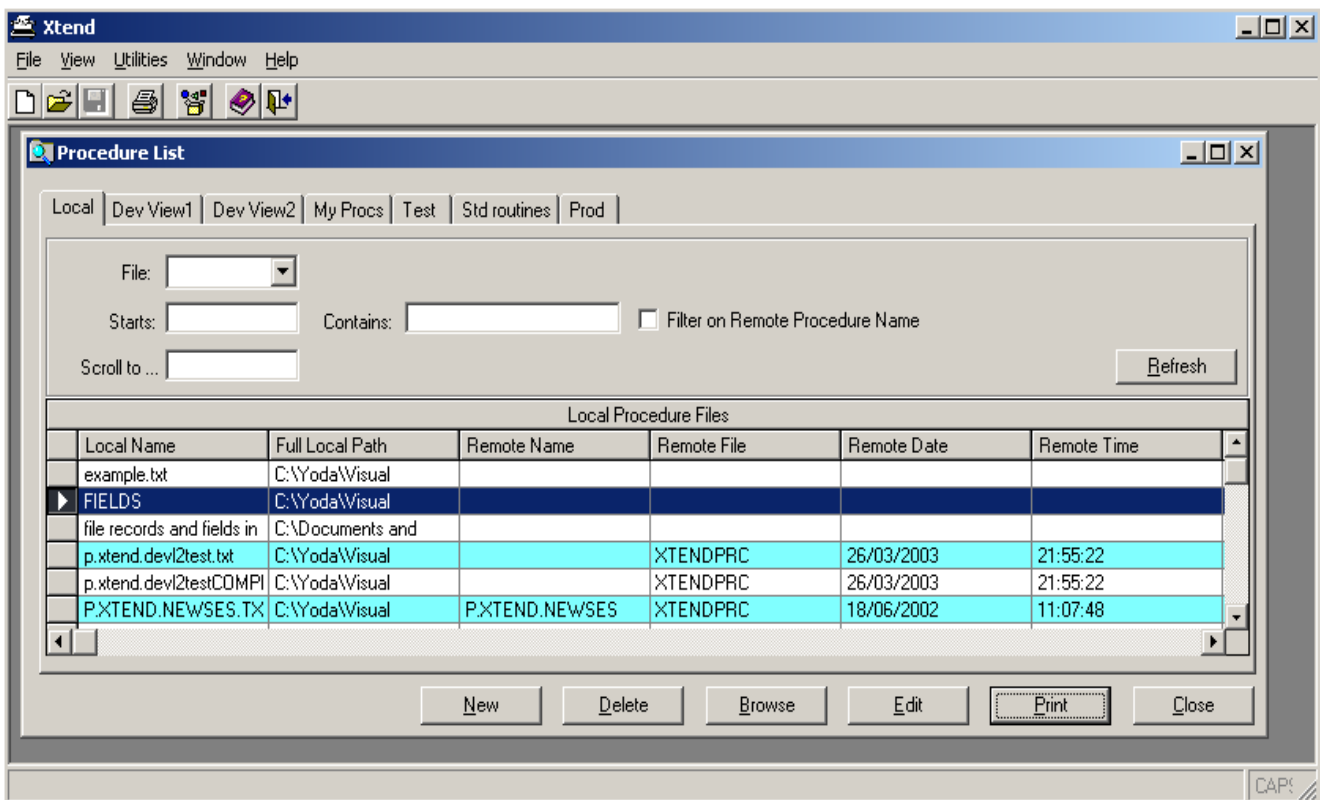
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Introduction

Overview

Xtend is a GUI based editor designed specifically to edit procedures written in Model204 User Language. By leveraging the power of the *Windows*[®] environment using colour and visual cues, *Xtend* allows for faster and more accurate development of Model204 procedure code.



Introduction

Key Features

- *Xtend* has a *Windows*[®] based look and feel allowing for a shorter learning curve.
- *Xtend* is Model204 aware, which provides excellent real time visual cues for new and experienced programmers alike.
- *Xtend* offers maximum flexibility to the programmer to tailor the product to suit their individual/company needs.
- *Xtend* allows for code to be developed independently from mainframe availability.
 - Less interaction with the mainframe means a decrease in CPU.
 - Programmers are less affected by mainframe down time.
 - Programmers are 'quarantined' from slow mainframe response times.
 - Allows programmers to work with locally saved procedures.

Minimum Requirements

Mainframe

- TCP/IP connectivity between mainframe and PC
- Model204 V4R2.1

Connect*

- Connect* decryption key
- Model204 V5R1.0 this version comes with 2 Connect* RCL threads

Janus Web

- Janus Web
- Sirius Mods 6.1

PC or Laptop

- Windows 95/98/NT4+/2000
- Connect* v5r1 (if connecting via Connect*)

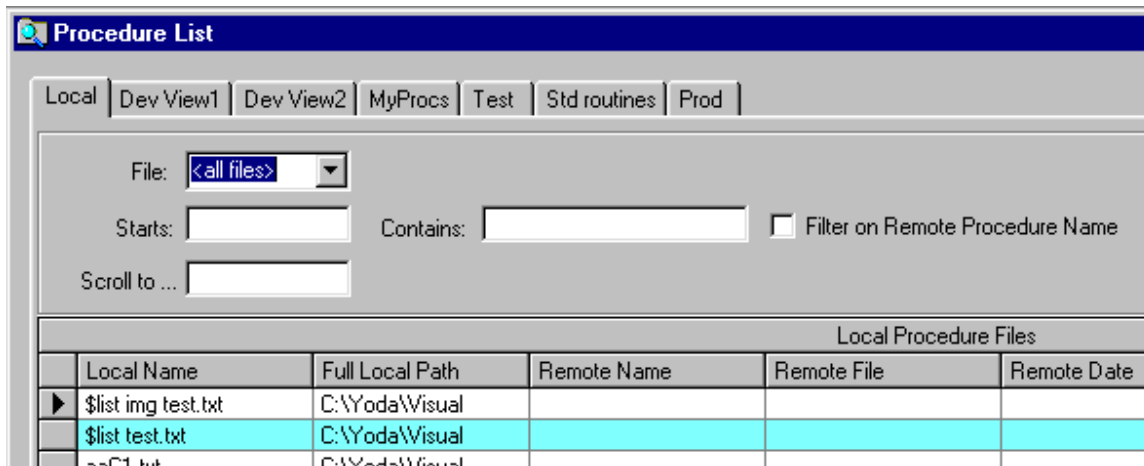
Procedure List

Connection Types

There are two modes of connecting to Model204. One or both can be used simultaneously by *Xtend* to send and receive data from multiple Remote Hosts.

- Connect*
- Janus Web

Procedure List Interface



- **Multiple views for Development/Test and Production**
A workspace can be set up with any number of remote views. A remote view is essentially the same as running another instance of a 3270 emulator application.
- **Views saved automatically on application exit**
Each remote view is saved on exit, unlike most current 3270 based editor set-ups where only the last view is saved.

Procedure List

Remote Setup

	Default	Caption	User ID	Comm Type	Host	Port	Use Secure Port
▶	<input type="checkbox"/>	Dev View1	yoda	JanusWeb	DOMAIN.COM.AU	7878	<input type="checkbox"/>
	<input type="checkbox"/>	Dev View2	yoda	RCL	DEV1		<input type="checkbox"/>
	<input type="checkbox"/>	Dev screens	yoda	JanusWeb	DOMAIN.COM.AU	7878	<input type="checkbox"/>
	<input type="checkbox"/>	Test1	yoda	RCL	TEST_B1		<input type="checkbox"/>
	<input type="checkbox"/>	Prod	yoda	JanusWeb	OTHERDOMAIN.COM.AU	7979	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	Test2	yoda	RCL	TEST_B2		<input type="checkbox"/>

The Remote TAB on the Options screen is used to add Remote Host entries into *Xtend*. These are used by *Xtend* to send and receive data from Model204.

Editor Interface

Moving around the editor interface

Moving around the editing interface can be done in a number of ways:

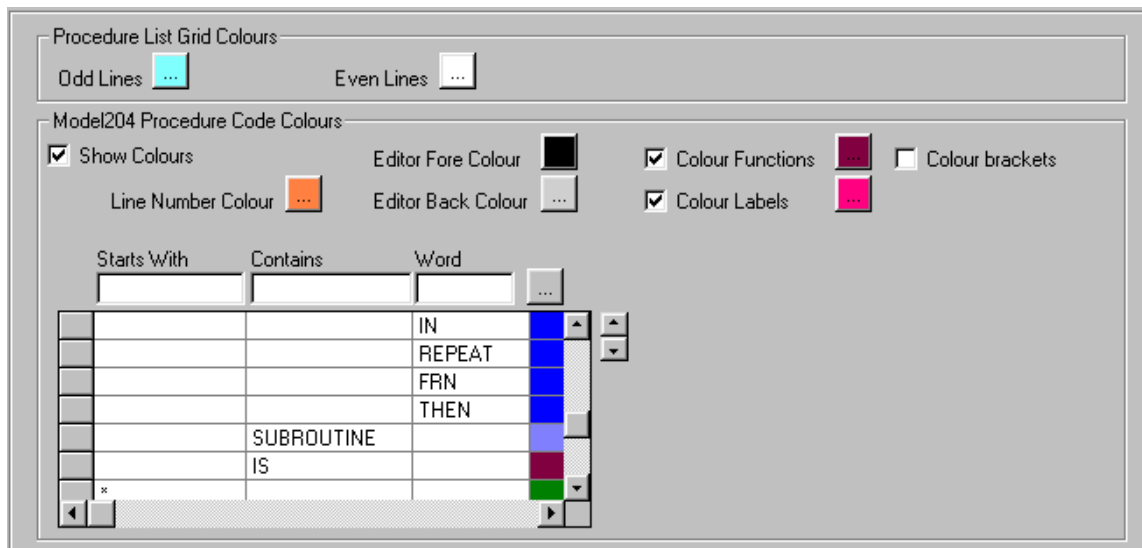
- Page Up/Down keys
- Arrow keys
- Scroll Bar
- Home and End keys
- Standard Windows[®] keystroke combinations (eg:CTRL + HOME)
- F7 and F8 to move through a Model204 'block'

```
146
147 *... read screen
148 READER:
149 IF NOT $CHKTAG('SCR1') THEN
150     READ SCREEN SCR1
151 ELSE
152     REREAD SCREEN SCR1 WITH CURSOR
153 END IF
154
155 IF %SCR1:PFKEY NE '3' THEN
156     %S2 = %SCR1:DATEIN
157     CALL CHECKINPUT(%S2, %S1)
158     IF %S1 NE '' THEN
159         TAG %SCR:DATEIN BRIGHT
160         %SCR1:MESSAGE = %S1
161         JUMP TO READER
162     ELSE
163         %ABC:ITEM1 = %S2
164         %C=$DATECNV('YYYYMMDD', 'DD MON YYYY', %S2)
```

None of these involves any interaction with the Remote Host. The only equivalent <ENTER> keys are for the initial Edit and when a Save is processed. This allows the programmer to be effectively quarantined from a slow development machine.

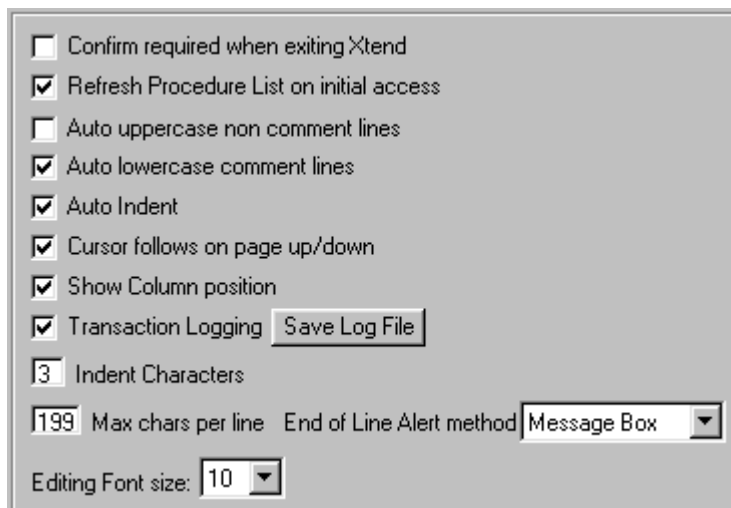
Editor Interface

Colouring text



The Colour Options screen allows individual tailoring of the editing interface, making for more readable and thus easier to understand Model204 User Language code

Procedure Code Display Options



Editor Interface

Tool tips

These features can save an enormous amount of time (and frustration) when writing User Language code. Each \$function is also detailed in the *Xtend* Help file and is accessed simply by placing the cursor on the \$function and pressing the F1 key.

Mouse Over

```
GE = %S1  
D %S1 IS STRING LEN 78
```

floating position

```
63 %THIS.STRING =  
%THIS.STRING IS STRING LEN 78
```

status line position

\$Function parameters

```
IF $SUBSTR(%STRING.VAR,1,2) = 'AB' THEN  
P $SUBSTR(string, position [, length])  
PRINT %P
```

floating position

```
= $SUBSTR(%THIS.STRING,1,4) = '1999'  
$SUBSTR(string, position [, length])
```

status line position

Subroutine parameters

```
CALL CHECKINPUT(%S2, %S1)  
IF %S1 NE CHECKINPUT(%IN.DATE IS STRING LEN 8 INPUT,  
TAG %S  
%SCR1:MESSAGE %S1
```

Variable Drop-down box

```
58 %  
59 I %ABC (IMAGE) E  
60 %ADDR.LINE A  
61 %ARR.XYZ U  
62 %BAR.CODE T  
63 %CHARACTERS.ON T
```

Image/Screen Drop-down box

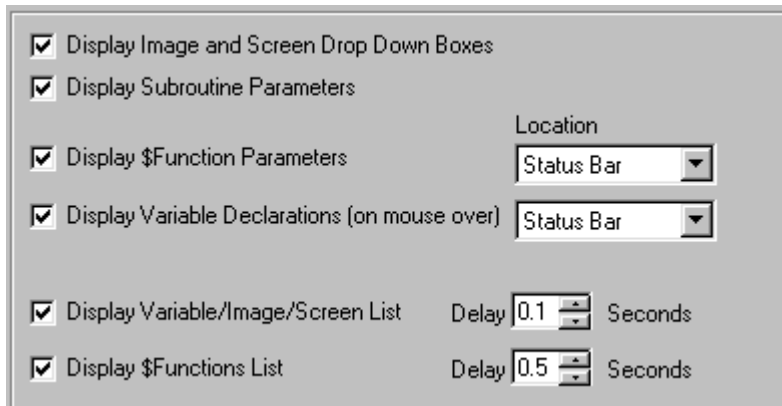
```
58 %ABC:  
59 IF %ITEM1  
60 %ITEM2 E  
61 C ITEM3 (S  
62 IF %S1 NE '' THEN
```

\$Function Drop-down box

```
= $  
%SCR1 $LOWCASE  
%2 = $LSTPROC  
%LL $MAX  
%S $MIN  
%S $MOD
```

Editor Interface

Tool tip Display Options



The screenshot shows a dialog box titled "Tool tip Display Options" with a light gray background. It contains several options, each with a checked checkbox. The options are: "Display Image and Screen Drop Down Boxes", "Display Subroutine Parameters", "Display \$Function Parameters" (with a "Location" dropdown menu set to "Status Bar"), "Display Variable Declarations (on mouse over)" (with a "Location" dropdown menu set to "Status Bar"), "Display Variable/Image/Screen List" (with a "Delay" spinner set to "0.1" and "Seconds" next to it), and "Display \$Functions List" (with a "Delay" spinner set to "0.5" and "Seconds" next to it).

Display Image and Screen Drop Down Boxes

This option provides selection of image or screen items from a drop down box when the “.” key is pressed on a valid image or screen name. Pressing the TAB key will select the highlighted item

Display Subroutine Parameters

This option provides a pop-up dialog showing the parameters of a complex subroutine

Display \$Function Parameters

This option provides a display showing the syntax of a Model204 \$Function. The display can be in a pop-up dialog or in the status bar

Display Variable Declarations (on mouse over)

This option provides a display showing the variable declaration. The display can be in a pop-up dialog or in the status bar

Display Variable/Image/Screen List

This option provides selection of defined variables, images or screens from a drop down box when the “%” key is pressed. Pressing the TAB key will select the highlighted item. The drop down box appears after the delay specified in seconds if no other key is pressed.

Display \$Functions List

This option provides selection of \$Functions from a drop down box when the “\$” key is pressed. Pressing the TAB key will select the highlighted item. The drop down box appears after the delay specified in seconds if no other key is pressed.

Editor Interface

Features

Find & Replace

Activated by CTRL+F, this is similar to the Find & Replace found in word processors (eg *Microsoft® Word*).

Fast Find

By placing the cursor on a word and pressing CTRL+F3, the cursor will jump to the next occurrence of that word. Pressing CTRL+SHIFT+F3 will show the previous occurrence.

Cut/Copy & Paste

Highlighted text can be cut, copied and pasted using the standard *Windows®* CTRL+C, CTRL+X, CTRL+V. CTRL+C when no text is highlighted, will copy the line the cursor is on.

Upper/Lower case conversion

Highlighted text can be converted to upper/lower case using CTRL+U or CTRL+L. When no text is highlighted, the current line is converted.

Non-consecutive line copying

To copy non-consecutive lines, select the line by clicking the line numbers to the left of the code and then use CTRL+C, CTRL+X or the toolbar buttons or menu options.

Automatic Line indentation

When ENTER is pressed, the cursor is automatically indented to line up with the text on the previous line. This option is set in the procedure code display options.

Tabbing (single/multiple line)

When the TAB key is pressed the cursor will move a set number of spaces to the right. (SHIFT + TAB moves to the left). The same action can be performed on highlighted text which also allows the use of the left and right arrow keys to move the text 1 space. The set number of spaces can be set in the procedure code display options.

Comment/uncomment multiple lines in a single action

To comment out multiple lines of text, simply highlight the text required and press CTRL+8. Using CTRL+SHIFT+8 will uncomment the lines.

Auto lowercase comment lines

To automatically lower case comment lines, set the 'Auto lowercase comment lines' option in the procedure code display options.

Auto uppercase non-comment lines

To automatically uppercase non-comment lines, set the 'Auto uppercase non comment lines' option in the procedure code display options.

Suppress lines

This feature allows the suppression of code that does not contain a certain string or combination of strings. Use the toolbar button or menu option to activate. Highlighted text can also be suppressed using CTRL+H.

Editor Interface

Features Continued

Templates

Comment blocks, subroutine definitions or any piece of code can be set-up as a template.

GO!

Procedures can be run using the GO button or the file Go menu option. The results are displayed in a separate window.

Fast browse (Shift F2)

Place the cursor over a procedure name in an INCLUDE statement and press SHIFT+F2 to display a dialog to confirm the online, procedure file and name (any of which can be changed), press enter to browse the procedure.

Line wrap

Lines that do not fit on the editing window can wrap around to the next line. Wrap mode is toggled on and off from the toolbar.

Line Length

Maximum line length can be set between 60 to 255 and is set in the procedure code display options.

Scroll through a Model204 block

To 'jump' through Model204 blocks of code such as 'IF/THEN/ELSE' or 'FOR' blocks of code, place the cursor on the 'IF, ELSE, END IF, FOR, END FOR' and press F7 to move forward or F8 to move backwards.

Undo and Redo

Use CTRL+Z to undo the last change(s) or use the edit menu or toolbar buttons to re-do the last change(s).

Syntax checking

Xtend has a simple inbuilt syntax checker. Select Syntax check from the Edit menu.

Define/Redefine variables

To define or redefine a variable, place the cursor on the variable and press SHIFT+F4. A dialog will appear showing the variable definition allowing it to be added or changed. Pressing enter adds or changes the variable declaration. Press ESC to cancel.

Jump to variable definition

To move to a variable, image item or screen item definition, simply place the cursor on the item and press F4. To return to the previous position in the code, press F6 (bookmark).

Bookmarks

To bookmark a position in the code, place the cursor at the required position and press SHIFT+F6. Up to 5 bookmarks are allowed. Pressing F6 will return to the previous position(s). An automatic bookmark is created on actions such as CTRL+F (find & replace) and F4 (variable declaration).

Fast Word Copy

Press CTRL and click the *right* mouse button to copy the word under the mouse to the current insertion point.

Editor Interface

Blocking Mode Features

A severe limitation to a 3270 emulator is the functions available when working with a block of code, especially if that block is more than a page in length and/or there are extended lines involved. Block mode features overcome these limitations.

Block mode

To activate block mode, press CTRL+B. Click the left mouse button at the start point of the block. **RELEASE the left mouse button.** Drag the mouse to the required end point of the block and click the left mouse button again. The block can be drawn over one page.

Cut (leaving or removing spaces)

After the block has been defined, use the menu edit -> block -> cut. The *leave spaces* menu item returns blank space in the block.

Copy

The contents of the block are automatically copied into memory once the block has been defined.

Paste (overwrite or insert)

The block of code can be pasted in insert mode or overwrite mode.

Sort

The contents of the block is sorted alphabetically.

Align

The block is aligned on a word.

Flip

The text in the block is swapped either side of the equals sign.

Fill

This option can only be used when the first element in the block is a number. The rest of the block is then incremented/decremented by a number specified (eg: a screen that has 20 postcodes, type POSTCODE1, duplicate it 20 times, then use the block fill to update the screen items 2 to 20).

Replace

This will replace the contents of the block with a specified string.

Model204 Aware Formatting

The *Sort*, *Align* and *Flip* under the menu *Format* option are Model204 aware functions. Continuation lines are taken into account with these options. The menu *Format* options are used with normal highlighted text

Editor Interface

Printing Options

An optional banner page can be printed, along with page header details.

Font size can also be changed for printing.

The screenshot shows a dialog box with the following options:

- Print banner page
- Banner page text: [Two empty text input fields]
- Print page header
- Print Font: [Change Print Font button] [Sample: ABC abc 123]
- Selected font: **Courier New, 10**

Select the printer and printer paper size

Styles for printing

- Landscape
- Portrait
- Two-sided printing
- Copies

Highlighted text within the editor interface can be printed.

The screenshot shows a dialog box titled "Print Options" with the following options:

- Printer Name: Canon Bubble-Jet BJC-4200SP
- Paper Size: A4, 210 x 297 mm
- Orientation: Portrait, Landscape
- Two Sided Printing: None, Book, Tablet
- Selection Only
- Copies: 1
- Buttons: OK, Cancel

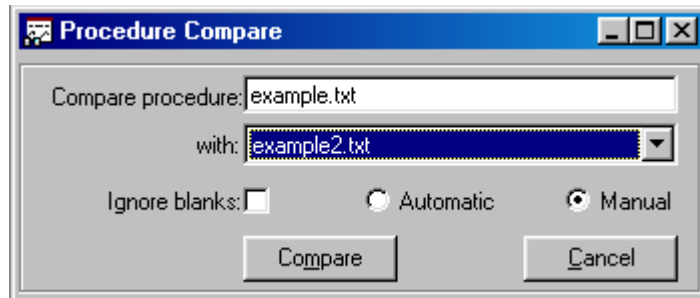
Multiple Windows

- **Tile many windows** -*Xtend* allows multiple windows to be tiled without compromising legibility.
- **Drag & drop lines of code between windows** -With multiple windows opened, copying code between them is simple.
- **Compare procedures** - *Xtend* has a procedure compare facility that can be used to highlight the differences between two procedures. It can also be used to compare procedure output. (eg: PAI dumps).

Other Features

Procedure Compare

This feature allows for the comparison of 2 procedures or output windows. This option is located under the 'File' menu.



The compare can run in 2 modes:

- 1. Automatic**

This option will run a compare algorithm that will display the compare results.

- 2. Manual**

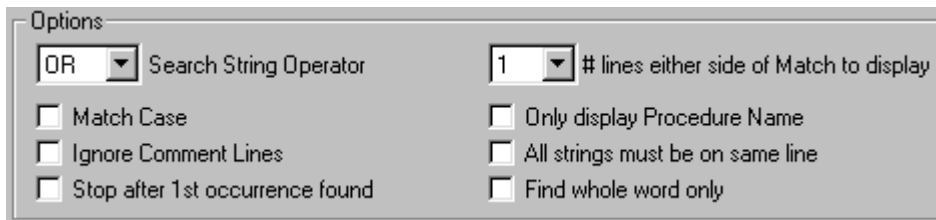
This option will display the 2 procedures being compared and scroll through them until a difference is discovered. At this point it will stop, show the differences and allow the repositioning of the compare points before continuing.

Dump To Local

The Dump to Local feature allows the 'downloading' of multiple procedures from the mainframe to the PC/Laptop allowing for offline work

Other Features

Search On Local



The screenshot shows a dialog box titled "Options" with the following controls:

- A dropdown menu set to "OR" labeled "Search String Operator".
- A dropdown menu set to "1" labeled "# lines either side of Match to display".
- Four checkboxes:
 - Match Case
 - Ignore Comment Lines
 - Stop after 1st occurrence found
 - Only display Procedure Name
 - All strings must be on same line
 - Find whole word only

Any procedures that have been saved locally (including those via the *Dump to Local* feature) can be included in the local search facility.

The search results are displayed in a NEW procedure window. This allows easy saving or printing of the output. The procedure found in the search can be edited locally using the *Fast Edit* feature by placing the cursor on the remote name in the search output, and pressing <SHIFT> and <F2>.

Recovery

In the event of a PC crash, *Xtend* has a built in recovery system that will ensure that no more than 15 seconds of editing can be lost. When invoking *Xtend* after a crash, all procedures that were being edited will be automatically displayed, the cursor will be placed back to the exact position before the crash.

Shortcut Keys

Xtend Shortcut Keys

Xtend has a number of features that can be easily accessed with a couple of key strokes. Some are unique to this application while others are standard Windows® functions. In the list below the key strokes are represented within the angled brackets.

Table1.1

Shortcut Keys - All of the following require the CTRL key *plus* a shortcut Key

Shortcut Key	Description
<C>	copy highlighted text (if no highlighted text, then current line copied)
<X>	cut highlighted text
<V>	paste text previously copied/cut
<F>	invoke the Find & Replace dialog
<S>	save the procedure
<D>	delete the current line (note: the line is copied to memory and can be pasted elsewhere)
<^>	duplicate the current line
<Z>	undo the last processed action
<8>	add the comment character '*', at the start of each line of highlighted text
<SHIFT> +<8>	remove the comment character '*', at the start of each line of highlighted text (if there is one)
	initiate Block Mode
<L>	converts highlighted text to lowercase (if no highlighted text, then current line)
<U>	converts highlighted text to uppercase (if no highlighted text, then current line)
<I>	use within a subroutine call or \$function statement to invoke the ToolTip help
<A>	select all
<E>	erase to end of line
<H>	'hide' highlighted text
<G>	run the procedure being edited. (you will need to have sourced the procedure from the remote)
<=>	will 'flip' 2 strings on either side of an 'equals' sign (if no highlighted text, then current line)

Shortcut Keys

< left arrow >	move the cursor a word at a time to the left.
< right arrow >	move the cursor a word at a time to the right. Note: The \$,comma, colon, equal/plus signs and brackets are considered as ' <i>end of word</i> ' markers.
< up arrow >	move up to the next editor form (as listed in the 'Window' menu)
< down arrow >	move down to the next editor form (as listed in the 'Window' menu)
<F3>	find the next word equal to the one the cursor is currently over (or the text that is highlighted) - searching forward
<SHIFT> + <F3>	find the next word equal to the one the cursor is currently over (or the text that is highlighted) - searching backward.
<F4>	close current window.
<F5>	suppress all lines that do not contain the word the cursor is currently over.
< <i>right</i> Mouse click>	Move your mouse to be over the word that you want inserted, then press the CTRL key and click the <i>right</i> mouse button. The word under the mouse will have been copied to where you were typing.

Table1.2

Shortcut Keys - Other Short Cuts (that do not require CTRL key)

Shortcut Key	Description
<SHIFT> + <F2>	browse the procedure that the cursor is currently over
<F4>	jump to field definition or label
<SHIFT> + <F4>	define or redefine a variable
<F6>	goto last saved Bookmark
<SHIFT> + <F6>	create Bookmark at current cursor position
<F7>	if cursor is on an m204 'block' statement, the cursor will move to the previous 'block' statement
<F8>	if cursor is on an m204 'block' statement, the cursor will move to the next 'block' statement
<ESC>	cancels Block Mode, Non-consecutive line copy mode, Suppress mode, closes Find/Replace screen, cancels Field Redefine.

Example

For example, to convert some text from UPPER to lower case: highlight the required text, press the CTRL key and the L key, the highlighted text is converted to lowercase. This sequence of keys is represented as: <CTRL> + <L> = converts highlighted text to lowercase (if no highlighted text, then current line).

Proprietary Notices

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