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1. Overview of CLIM 2.0

CLIM 2.0 is a new release of CLIM whose primary goal is to provide support for toolkit-style programming in CLIM. To this end, CLIM 2.0 implements a large amount of new support for window and event management, and also includes a portable interface to a set of gadgets, including scroll bars, push buttons, toggle buttons, radio and check boxes, sliders, list and option panes, and text editing panes.

CLIM 2.0 also includes hundreds of bugfixes, many customer-requested enhancements, and is more robust than CLIM 1.1.

2. Installing CLIM 2.0

Note: You cannot load CLIM 2.0 into a world that has a previous version of CLIM (such as CLIM 1.1) loaded.

The CLIM 2.0 system is distributed on the Genera 8.3 CD-ROM (with the exception of some 3600-family only sites, with the CLIM 2.0 on the Genera 8.3 source tapes.)

To install CLIM into a Genera world, do the following:

1. Boot a world that does not include CLIM 1.0 or CLIM 1.1. Use `Restore Distribution` to restore the following CLIM systems from the distribution tape, if you have not done so already:

    ```
    CLIM
    Genera-CLIM
    CLX-CLIM
    PostScript-CLIM
    CLIM-Demo
    ```

2. Load the restored systems:

    ```
    Load System CLIM
    Load System Genera-CLIM
    Load System CLX-CLIM          [if you want the CLX port loaded]
    Load System PostScript-CLIM   [if you want the PostScript port loaded]
    Load System CLIM-Demo         [if you want the CLIM demos loaded]
    ```

3. Save a world with the CLIM 2.0 systems loaded.

3. New Features in CLIM 2.0

The main new feature in CLIM is the integrated support for gadgets and event management. Refer to *Common Lisp Interface Manager (CLIM): Release 2.0* for more information about gadgets and event management. Some of the new features of CLIM 2.0 include the following:

- A new window and event management model that supports use of standard user interface toolkits when running on standard platforms, such as Motif under Allegro Common Lisp. Since Genera does not support toolkits like Motif, CLIM 2.0 includes a set of gadgets, including scroll bars, push buttons, toggle buttons, radio and check boxes, pull-down menus, sliders, text editing panes, and list and option panes.

- Integration between CLIM's gadgets and **clim:accepting-values**.

- The completion presentation types now support **:printer** and **:highlighter** options.

- A set of drawing functions that draw multiple graphics, for example, **clim:draw-lines*** and **clim:draw-rectangles***.

- CLIM 2.0 supports use of pixmaps, and has **clim:with-output-to-pixmap** and **clim:copy-area** functions. This can be used to cache portions of a display that needs to be rapidly, repeatedly drawn.

- Functions to read X11 bitmap files and convert them to CLIM patterns, such as **clim:make-pattern-from-bitmap-file**.

- The input editor has a much richer set of editing commands. Type control-Help to see the entire set of commands.

- The appearance of the mouse cursor can be changed, either directly by calling **setf** on **clim:pointer-cursor**, or by changing the cursor associated with a CLIM sheet by calling **setf** on **clim:sheet-pointer-cursor**.

- Command tables may now inherit menu items from superior command tables.

- The command processor now tells you what the defaults are for keyword arguments when you type Help while reading a command.

- Keyboard gestures are now specified in a more portable fashion. For example, what would have been #\control-X in CLIM 1.1 is now specified as (:x :control). This allows greater portability, but it is an incompatible change from CLIM 1.1.

- A new form for defining drag-and-drop translators, called **clim:define-drag-and-drop-translator**.

- **clim:surrounding-output-with-border** now takes drawing options.

- The graph formatter is now more sophisticated.

- A number of new demos, including a ''color chooser'', a simple bitmap editor, a simple graphical editor, a Peek-like utility, a data plotting program, and a graphical browser. Note that these are demo programs; they are not intended to be of product quality, but are meant to be instructive in the use of CLIM 2.0. The CLIM Lisp Listener is particularly useful when you are debugging fragments of CLIM code; type `Select Lambda (symbol-shift-L)` to use it.

- The new **clim-sys** package contains a number of generally useful utilities.

4. Enhancements and Bugfixes in CLIM 2.0

In many respects, CLIM 2.0 is a more robust release than CLIM 1.1. However, as this is a new major release with much new functionality, some bugs in the new code are to be expected. Some of the bugs that have been fixed since CLIM 1.1 are listed as follows:

- **clim:accept-from-string** and **clim:present-to-string** work much better.

- The **:allow-sensitive-inferiors** argument to **clim:present** and **clim:with-output-as-presentation** now works.

- The highlighting of multi-line text output records is now better.

- The problems with completion over **or** types have been fixed.

- A bug in **clim:identity-translator-applicable-p** has been fixed that makes presentations with type parameters behave correctly.

- Clipping regions for output records now work correctly.

- The problem where the input editor would blow out after you cleared the input buffer and then clicked on something has been fixed.

- Typeout from the input editor no longer scribbles over the user's typein.

- Own-window dialogs now have their own help window.

- The command processor tries to insert a delimiter between arguments as you click on them, if it can. This allows mixed-mode interfaces to be much more streamlined.

- Textual output is faster. Furthermore, diacritic characters (such as acute accents) are now handled properly.

- Some long-standing problems in coordinate sorted sets have been ameliorated, but not completely fixed.

- Some problems in incremental redisplay have been fixed. This includes bugs in redisplay of **clim:formatting-table** and **clim:format-graph-from-roots**, and problems redisplaying overlapping output records.

- **clim:filling-output** much faster when you use **write-string**.

- **clim:tracking-pointer** handles mouse button-up events properly.

- Successive calls **clim:surrounding-output-with-border** now line up correctly.

- Some problems in **clim:make-design-from-output-record** have been fixed.

- Suspend and meta-Suspend now work much better in Genera CLIM applications.

- The PostScript back-end now works much better. For example, the font metrics are now computed correctly.

5. Functions Incompatibly Changed From CLIM 1.1

The following functions were incompatibly changed from CLIM 1.1 to CLIM 2.0. You can use Zmacs's Conversion Tools (m-X Convert Functions ...) to automate much of the conversion process; use the "CLIM 1.1 to CLIM 2.0" conversions.

- The **:panes** and **:layouts** clauses to **clim:define-application-frame** are now completely different. No conversions have been provided, since it is not clear what should be done in many cases.

- **clim:set-frame-layout** has been removed in favor of using **setf** on **clim:frame-current-layout**.

- **clim:frame-top-level-window** is now called **clim:frame-top-level-sheet**.

- **clim:command-enabled-p** is now called **clim:command-enabled**.

- **clim:disable-command** and **clim:enable-command** have been removed in favor of using **setf** on **clim:command-enabled**.

- **clim:run-frame-top-level** now takes keyword arguments. You must include **&key** in your methods for this function.

- **clim:open-root-window** has been removed. Its closest replacement is **clim:find-port**, although you may find that you rarely need to explicitly specify a port.

- The **:stream**, **:object**, and **:type** keyword arguments to **clim:with-output-as-presentation** are now required arguments, since it was always necessary to supply these arguments.

- **clim:+background+** is now called **clim:+background-ink+**, and **clim:+foreground+** is now called **clim:+foreground-ink+**. This was done to be consistent with **clim:+flipping-ink+**.

- **clim:make-color-rgb** is now called **clim:make-rgb-color**, and **clim:make-color-ihs** is now called **clim:make-ihs-color**.

- **clim:draw-character**, **clim:draw-character***, **clim:draw-string**, and **clim:draw-string*** have all been removed in favor of using **clim:draw-text** and **clim:draw-text***.

- **clim:draw-icon** and **clim:draw-icon*** are now called **clim:draw-pattern***.

- The argument order to **clim:with-text-style**, **clim:with-text-family**, **clim:with-text-face**, and **clim:with-text-size** has been changed so that the stream argument is first.

- **clim:add-text-style-mapping** has been removed in favor of using **setf** on **clim:text-style-mapping**.

- **clim:stream-cursor-position*** is now called **clim:stream-cursor-position**, **clim:stream-set-cursor-position*** is now called **clim:stream-set-cursor-position**, and **clim:stream-increment-cursor-position*** is now called **clim:stream-increment-cursor-position**.

- **clim:cursor-position*** is now called **clim:cursor-position**, and **clim:cursor-set-position*** is now called **clim:cursor-set-position**.

- **clim:stream-vsp** is now called **clim:stream-vertical-spacing**.

- The argument order to **clim:with-end-of-line-action** and **clim:with-end-of-page-action** has been changed so that the stream argument is first.

- **clim:stream-pointer-position*** is now called **clim:stream-pointer-position**, and **clim:stream-set-pointer-position*** is now called **clim:stream-set-pointer-position**.

- **clim:pointer-position*** is now called **clim:pointer-position**, and **clim:pointer-set-position*** is now called **clim:pointer-set-position**.

- **clim:event-window** is now called **clim:event-sheet**.

- **clim:pointer-event-shift-mask** is now called **clim:event-modifier-state**.

- The **:inter-column-spacing**, **:inter-row-spacing**, and **:multiple-columns-inter-column-spacing** keyword arguments to **clim:formatting-table** have been renamed to **:x-spacing**, **:y-spacing**, and **:multiple-columns-x-spacing**.

- The **:minimum-width** and **:minimum-height** keyword arguments to **clim:formatting-cell** have been renamed to **:min-width** and **:min-height**.

- The **:inter-column-spacing**, **:inter-row-spacing**, and **:no-initial-spacing** keyword arguments to **clim:formatting-item-list** and **clim:format-items** have been renamed to **:x-spacing**, **:y-spacing**, and **:initial-spacing**.

- The **:inter-column-spacing** and **:inter-row-spacing** keyword arguments to **clim:menu-choose** and **clim:draw-standard-menu** have been renamed to **:x-spacing** and **:y-spacing**.

- The **:draw-p** and **:record-p** keyword arguments to **clim:with-output-recording-options** have been renamed to **:draw** and **:record**.

- **clim:*unsupplied-argument*** is now called **clim:*unsupplied-argument-marker***.

- The **:inter-column-spacing** and **:inter-row-spacing** keyword arguments to **clim:display-command-table-menu** has been renamed to **:x-spacing** and **:y-spacing**.

- The **:test** keyword argument has been removed from **clim:add-command-to-command-table**, **clim:add-keystroke-to-command-table**, and **clim:remove-keystroke-from-command-table**.

- The **:keystroke-test** keyword argument has been removed from **clim:read-command** and **clim:read-command-using-keystrokes**.

- **clim:window-viewport-position*** is now called **clim:window-viewport-position**, and **clim:window-set-viewport-position*** is now called **clim:window-set-viewport-position**.

- **clim:position-window-near-carefully** is now called **clim:position-sheet-carefully**.

- **clim:position-window-near-pointer** is now called **clim:position-sheet-near-pointer**.

- **clim:size-menu-appropriately** is now called **clim:size-frame-from-contents**.

- **clim:stream-draw-p** is now called **clim:stream-drawing-p**, and **clim:stream-record-p** is now called **clim:stream-recording-p**.

- **clim:output-record-position*** is now called **clim:output-record-position**, and **clim:output-record-set-position*** is now called **clim:output-record-set-position**.

- **clim:output-record-start-position*** is now called **clim:output-record-start-cursor-position**, and **clim:output-record-end-position*** is now called **clim:output-record-end-cursor-position**.

- **clim:output-record-set-start-position*** is now called **clim:output-record-set-start-cursor-position**, and **clim:output-record-set-end-position*** is now called **clim:output-record-set-end-cursor-position**.

- **clim:output-record-element-count** is now called **clim:output-record-count**.

- **clim:output-record-elements** is now called **clim:output-record-children**.

- **clim:replay-1** is now called **clim:replay-output-record**.

- **clim:output-record-refined-sensitivity-test** is now called **clim:output-record-refined-position-test**.

- **clim:output-recording-stream-output-record** is now called **clim:stream-output-history**.

- **clim:output-recording-stream-current-output-record-stack** is now called **clim:stream-current-output-record**.

- **clim:output-recording-stream-replay** is now called **clim:stream-replay**.

- **clim:add-output-record** is now called **clim:stream-add-output-record**.

- **clim:add-output-record-element** is now called **clim:add-output-record**, and **clim:delete-output-record-element** is now called **clim:delete-output-record**.

- **clim:map-over-output-record-elements** is now called **clim:map-over-output-records**, **clim:map-over-output-record-elements-containing-point*** is now called **clim:map-over-output-records-containing-position**, and **clim:map-over-output-record-elements-overlapping-region** is now called **clim:map-over-output-records-overlapping-region**.

- **clim:redisplay-1** is now called **clim:redisplay-output-record**.

- **clim:dragging-output-record** is now called **clim:drag-output-record**.

- The *frame* argument to **clim:find-presentation-translators** is now a *command-table* argument.

- The **:shift-mask** keyword argument to **clim:test-presentation-translator**, **clim:find-applicable-translators**, **clim:presentation-matches-context-type**, and **clim:find-innermost-applicable-presentation** is now a **:modifier-state** argument.

- **clim:define-gesture-name** uses a completely different syntax for specifying the gesture, and **clim:add-pointer-gesture-name** has been replace by **clim:add-gesture-name**.

- **clim:remove-pointer-gesture-name** is now called **clim:delete-gesture-name**.

- **clim:dialog-view** is now called **clim:textual-dialog-view**, and **clim:+dialog-view+** is now called **clim:+textual-dialog-view+**.

- **clim:menu-view** is now called **clim:textual-menu-view**, and **clim:+menu-view+** is now called **clim:+textual-menu-view+**.

- **clim:call-presentation-generic-function** has been replaced by a pair of functions, **clim:apply-presentation-generic-function** and **clim:funcall-presentation-generic-function**.

- The **:activation-characters**, **:additional-activation-characters**, **:blip-characters**, and **:additional-blip-characters** to **clim:accept** are now called **:activation-gestures**, **:additional-activation-gestures**, **:delimiter-gestures**, and **:additional-delimiter-gestures**.

- **clim:*activation-characters*** is now called **clim:*activation-gestures***, and **clim:*standard-activation-characters*** is now called **clim:*standard-activation-gestures***.

- **clim:*blip-characters*** is now called **clim:*delimiter-gestures***.

- **clim:activation-character-p** is now called **clim:activation-gesture-p**, **clim:blip-character-p** is now called **clim:delimiter-gesture-p**.

- **clim:with-activation-characters** is now called **clim:with-activation-gestures**, and **clim:with-blip-characters** is now called **clim:with-delimiter-gestures**.

- **clim:*abort-characters*** is now called **clim:*abort-gestures***.

- **clim:*complete-characters*** is now called **clim:*completion-gestures***, **clim:*help-characters*** is now called **clim:*help-gestures***, and **clim:*possibilities-characters*** is now called **clim:*possibilities-gestures***.

- **clim:input-position** is now called **clim:stream-scan-pointer**, and **clim:insertion-pointer** is now called **clim:stream-insertion-pointer**, and **clim:rescanning-p** is now called **clim:stream-rescanning-p**.

- The *right* and *bottom* arguments to **clim:with-bounding-rectangle*** are now required.

- **clim:point-position*** is now called **clim:point-position**.

- **clim:region-contains-point*-p** is now called **clim:region-contains-position-p**.

- **clim:bounding-rectangle-position*** is now called **clim:bounding-rectangle-position**, and **clim:bounding-rectangle-set-position*** is now called **clim:bounding-rectangle-set-position**.

- The argument order to **clim:make-3-point-transformation** and **clim:make-3-point-transformation*** has been changed.

- **clim:compose-rotation-transformation** is now called **clim:compose-rotation-with-transformation**, **clim:compose-scaling-transformation** is now called **clim:compose-scaling-with-transformation**, and **clim:compose-translation-transformation** is now called **clim:compose-translation-with-transformation**.

- **clim:transform-point*** is now called **clim:transform-position**, and **clim:untransform-point*** is now called **clim:untransform-position**.

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