

Addendum to the Sketch manual

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This document describes the extensions and differences between the latest Sketch and the one documented in the ISL report and the Interlisp-D library documentation (koto release).

Misc new features:

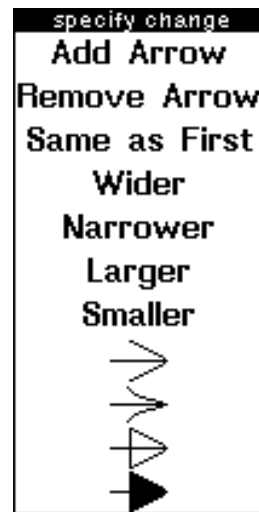
Individual control points can now be added to and deleted from wires and curves. **Add point** now appears as a command in the menu that appears when the **Change** command is applied to a wire or curve. **Delete point** is now a subcommand to the **Delete** command.

Sketch provides better feedback when entering circles, ellipses and wires. You are now prompted with an image of what the figure will look like if you release the button. You can get the old feedback behavior (for example, if this is too slow) by selecting the **Feedback** subcommand from the **Defaults** submenu, then selecting the **Points only** subcommand from its submenu.

A curved arrowhead shape was added and is now the default. The figure below shows the new default arrowhead. Also a command was added to the menu of arrowhead change operations that implements "look same" for arrowheads. To make the arrowheads on a collection of elements look the same: select **Change**; then, when prompted to select the elements to change, first select the element that has the desired arrowhead, then, in the same selection, add the elements that you want to look like the first one; then select the item **Arrowheads**, then the item **Both**, then the item **Same as First**.



New default Arrowhead



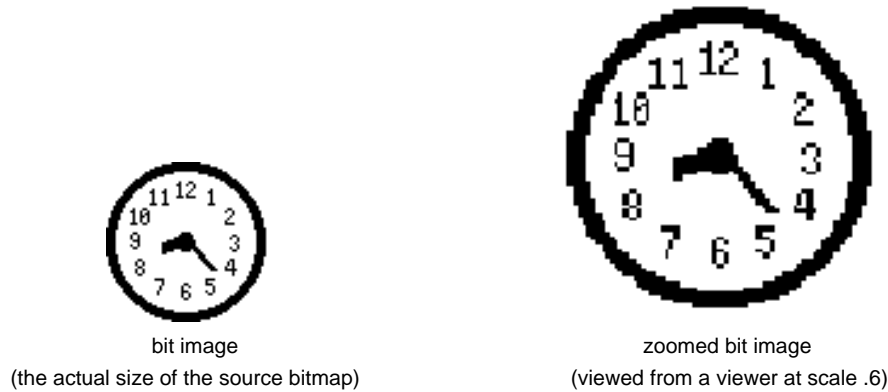
Menu of Arrowhead change operations.

Character edits are now undoable and the same character that undoes edits in TEdit (often the undo key) will undo events in Sketch (though NOT just character events).

This version supports a programmer's interface to Sketch which allows sketches to be created by programs. This interface is described in a separate document (The Sketch Programmer's Interface.)

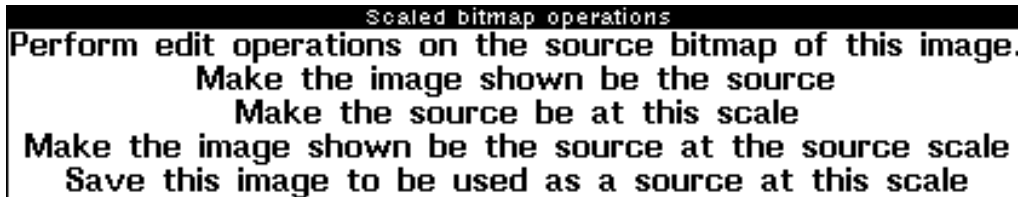
How to zoom bitmaps

The bit image element provides a bitmap that zooms. Selecting the new item **Bit image** from the command menu will prompt you for a region of the screen that will be inserted as a bit image into the sketch. The bit image is different from a bitmap image object (that results from copy selecting a bitmap into a sketch) in that the bit image will zoom when the sketch is zoomed.



Example of enlarging a bit image.

When you apply a **Change** command to a bit image that it is being viewed at actual size, you will be prompted with the same menu as a bitmap image object. If the image is being displayed at other than original scale, you will be given the menu shown below.



Menu of command offer when the CHANGE command
is applied to a bit image that is not at original scale.

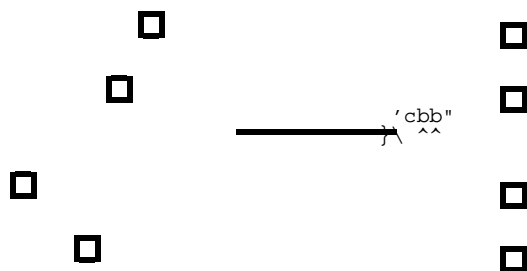
(Note: The following descriptions may be difficult to follow. If you want to manipulate bit images at different scales, it is recommended that you try these commands in a sketch window on a test bit image while you are reading this and observe their effects.) **Perform edit operations on the source bitmap of this image** will get the normal bitmap edit menu. **Make the image shown be the source** will cause the displayed image to be the source bitmap for the element but at the current scale, not at the scale that of the original source. Thus, if you return to viewing from the original scale, the bit image will be the same size but will be computed by scaling the now displayed image. **Make the source be at this scale** will cause the scale of the bit image to change such that the current view shows the bitmap at exact size. Thus, if you return to viewing from the original scale, the bit image will be larger or smaller. **Make the image shown be the source at the source scale** will cause the displayed image to be the source bitmap for the element at the scale of the original source. This provides a way of changing the size of a bit image: Zoom the viewer until the displayed image is the size you want, then select the **Change** command, select the control point of the bit image, then select this command. **Save this image to be used as a source at this scale** will cache the displayed image and it will be used as the source for scales that are close to this one. After having applied this command, applying the **Change** command again will offer you the normal bitmap edit menu but you will be editing a bitmap of the currently displayed image. Any changes you make will be reflected when the sketch is viewed as a scale close to this one. This provides a way of having a bit image element have different bitmaps at different scales and allows bit images to look good through a large range of zooming.

How to "freeze" elements

It is now possible to freeze elements, that is to make them unaffected by edit changes. Frozen elements will not have their control points high lighted (and hence cannot be selected) after an edit command has been selected. This provides a way to keep part of the figure fixed while editing on an overlapping part. It also reduces the number of control points. The **Freeze** command is a subcommand to the **Group** command. It will prompt you for a collection of elements that will then be frozen. Elements can be unfrozen by the **UnFreeze** command that is a subcommand to the **UnGroup** command.

How to align sketch elements

Sketch contains a set of commands to align elements. The main menu command **Align** prompts for a collection of control points and moves them so that they all line up with the leftmost one.



Effects of Align command.

There are subitems to the **Align** command that will align a collection of points at the right, top and bottom.



Subcommands to the Align command.

The subcommands **Space evenly in X** will prompt for a collection of points and move them so that the distance between them is evenly divided between the leftmost and the rightmost points. This will not necessarily leave points on grid points. If you want them on grid points, you can use the **Move onto grid** subcommand after the **Space evenly in X** command to move the points to the nearest grid point.

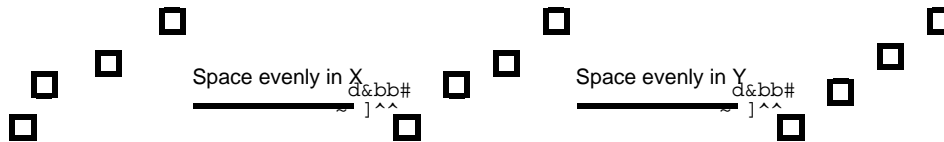


Effects of Space evenly in X command.

The command **Space evenly in Y** is similar but moves the points vertically rather than horizontally.

How to Align things evenly along a line

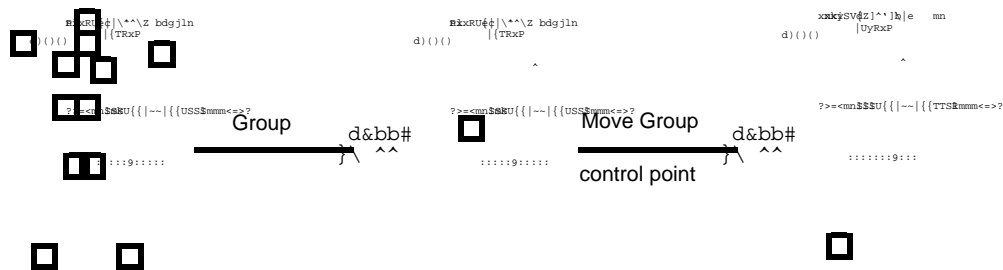
By applying the **Space evenly in X** and the **Space evenly in Y** commands in succession, you can arrange control points evenly along a line. Before applying the command, move the points so that one end of the line is occupied by the leftmost, bottommost point and the other end is occupied by the topmost, rightmost point.



Effects of Space evenly in X command followed by a Space evenly in Y command.

How to change the alignment point of an element

When aligning figures it is often useful to align different places in the figures. To do this, the figures should first be grouped by using the **Group** command. The group can contain a single element. If the control point for the group is not in the correct place, it can be moved using the **Move group control point** subcommand to the **Group** command.



Example of grouping a collection of elements and moving the control point of the group.