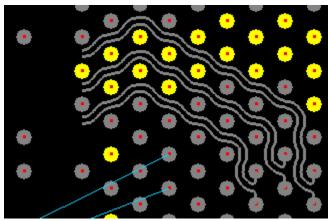
Snake Router Command

Snake is intended to create breakout clines for pins (or vias) having a hexagon-style pitch-pattern, and where 2 lines are allowed between pads. The breakout clines are created using Arcs, since 45-degree straight segments do not fit using typical width/spacing values. Snake is optimized for circular pad shapes.



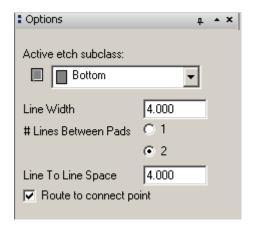
3 diff-pairs are shown, added by Snake command.

To enable the command: Setup > User Preferences, Unsupported_utilities, enable check button Show Route Unsupported Utils Menu.

To run the command: Route > Unsupported Utilities > Snake Router.

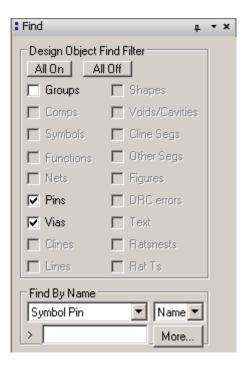
Functional Specification

Options tab:



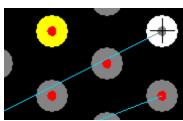
- Active etch subclass. Clines are created on the active subclass.
- Line-Width and Line-To-Line-Space must be entered, and are not derived from constraints.
- # Lines Between Pads. Set this value to 2. ("1" is not yet supported).
- Route to connect point. If enabled, this causes the clines to be routed back to the selected vias/pins, using a hard-coded gathering pattern. If disabled, the clines will be left dangling.
- There is no option for via/pin pitch. The command tries to figure it out.

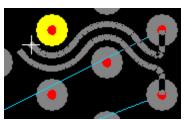
Find Filter: Vias and Pins are enabled.



There are 3 ways to Pick:

1) Pick a single pin (or via) of a diff-pair. Two clines will be created: one at the pin/via, and the other at the pin/via of the diff-pair mate.

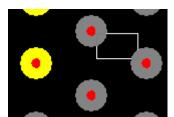




Select diff-pair (white) pin.

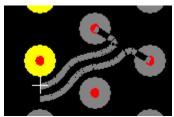
Move cursor through desired channels.

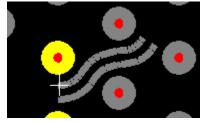
2) Window-pick 2 adjacent pins (or 2 adjacent vias). Two clines will be created.



Window-pick.

Functional Specification



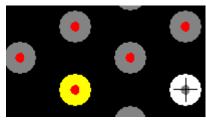


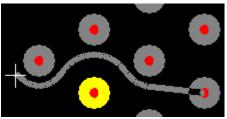
"Route to connect point" enabled.

"Route to connect point" disabled.

3) Pick a single pin (or via) of a non-diff-pair. One cline will be created, starting at the selected pin/via. Route-to-connect-point is ignored in this case, and the cline will always start at the pin/via.

Then move the cursor around, and the arcs will follow the cursor. A single-line will follow either the "left lane" or the "right lane" within a channel. The other "lane" remains available for a future route.

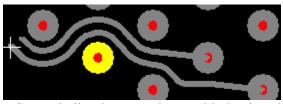




Pick non-diff-pair (white) pin.

Single cline is intentionally not centered.

Use single-pick to drop the cline(s), for example, to change directions. Two single picks at the same spot (or RMB Next) will end the clines.



Second cline has now been added using the lane above the yellow pad.

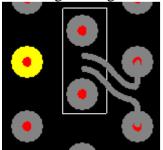
During dynamics, if the command cannot figure out which channel to take around a via/pin, it may be necessary to add in extra picks to help guide it along.

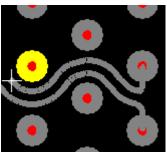
Use "RMB Switch Lanes" to switch the lane of a single-line being routed.



Functional Specification

A pair of dangling arcs can be extended by picking the two vias/pins at the channel where the clines end. The command recognizes that the existing clines exist, and will extend off them, rather than gathering back to the vias/pins.

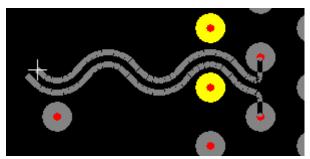




Pick vias/pins where clines end.

Existing clines will be extended.

During the dynamics, the arc creation continues even if the cursor is moved where vias/pins are missing in the pattern, using the pattern established by the selected vias/pins as a guide. Ending a cline by picking in black space causes the cline to stop.



Arc pattern can extend into space where there are no pads.