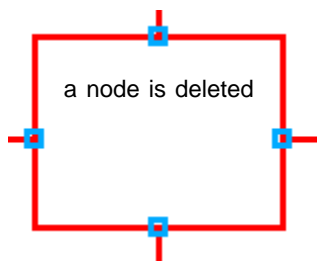# Convert Nodes to Point Elements

Vector topology creates a node at every intersection of line elements. Nodes serve an important topological function, but their existence depends on the line elements. Thus, as you delete adjoining line elements, the node may become an "excess node" and is subject to deletion by the Remove Excess Nodes filter. Likewise, if you delete all of the lines entering the node, the node will be deleted automatically.

If you want to protect a node from such automatic deletions, you can convert it to a point element. A point element is never automatically deleted, no matter what happens to the line elements around it.

The Convert Node to Point tool creates a point element from a node.
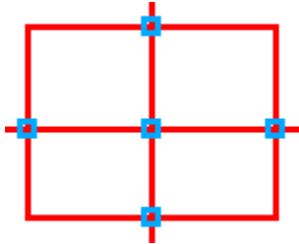
When four line elements intersect, a node element is automatically created to register the topology. The node element is dependant on the intersection. By contrast, point elements do not depend on associated line elements.
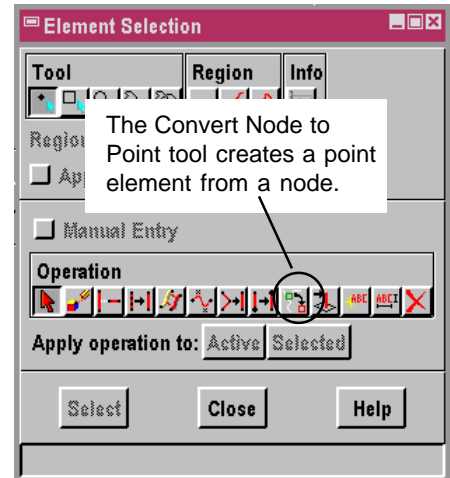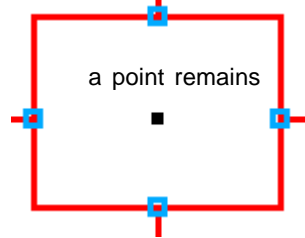
If all four line elements are deleted, the node element is also automatically deleted.

a node is deleted

In vector topology, a node element is always associated with at least one line element.

If you want to be sure the point of intersection remains even if the associated line elements are deleted, convert the node to a point element.
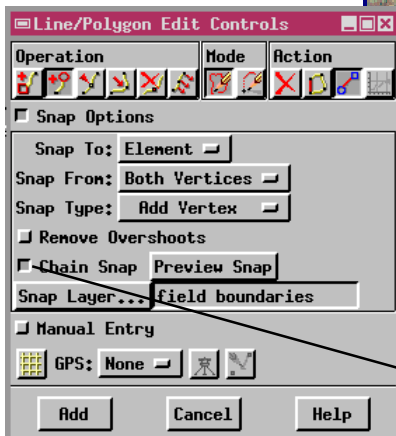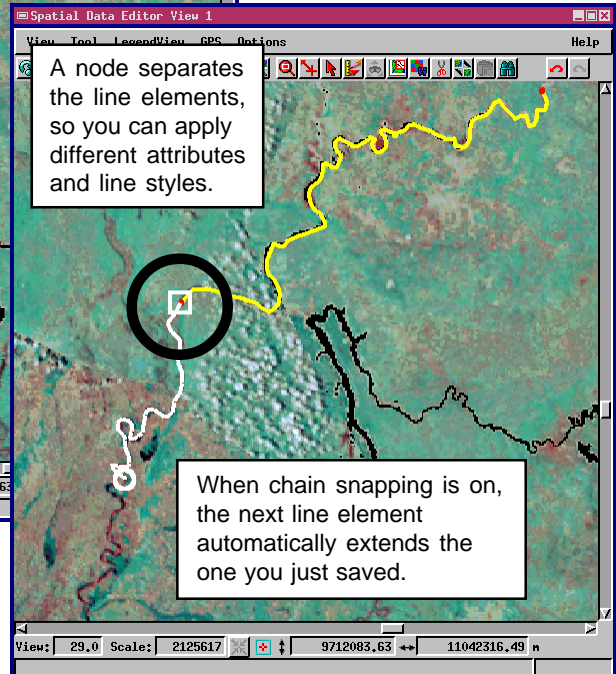
a point remains

Some node elements are converted to point elements even without use of the Convert Node to Point tool. For example, a Node survives automatic deletion if you have attached database attributes to it. Likewise, it survives Remove Excess Nodes if the adjoining line elements have different attributes.

Chain Snapping Extends Line Elements

The chain snapping feature in the spatial data editor lets you easily create a continuous line feature consisting of several discrete line elements. This is especially useful for linear features whose attributes change at identifiable points. For example, a road classification changes from four-lane highway to two-lane highway and then to urban street.

When you trace a complex feature, save your line element periodically.

As you draw and save each segment, the editor places a node at their junction so it is easy to change database attributes and line styles.

A node separates the line elements, so you can apply different attributes and line styles.

When chain snapping is on, the next line element automatically extends the one you just saved.

Turn on the Chain Snap toggle in the Snap Options panel of the Line/Polygon Edit Controls window.