CHAPTER 4

Customizing the Topology

Overview

This chapter provides a tutorial on using the Connectivity Tools topology drawing capabilities to customize your topology layout.

The following tasks are performed and described in this tutorial:

- LAN segment icons and router icons are moved to new locations in the Topology window
- a campus is renamed
- a campus is removed
- a router from one campus is moved into another campus
- a campus is moved and resized
- a new campus is created.

Tutorial

Having proceeded through the steps of creating and opening the *tutorial_baseline* baseline, as described in the first tutorial, the Connectivity Tools window, shown in Figure 4-1, is displayed. See "Creating and Opening a Baseline" for information on how to create and open a baseline.

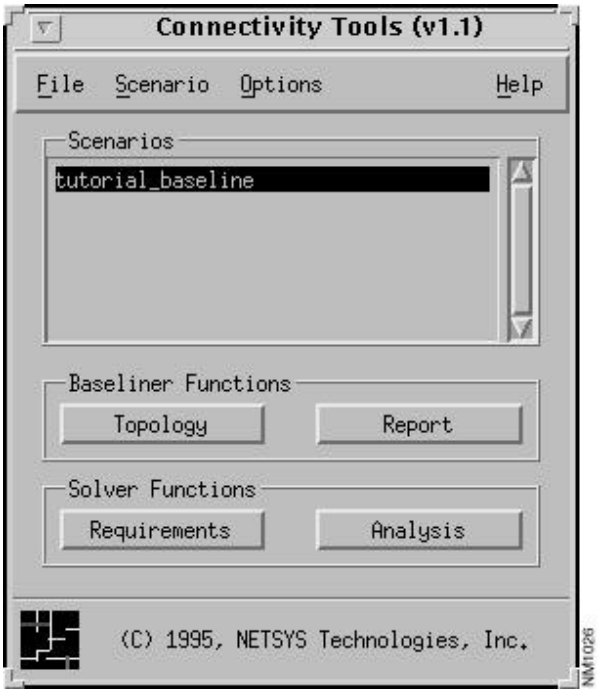

Figure 4-1 Connectivity Tools Window (Solver): Baseline Scenario Created

Step 1 Click on the **Topology** button in the Connectivity Tools window.

By default, the baseline topology is displayed as a campus view in the Topology window, as shown in Figure 4-2.

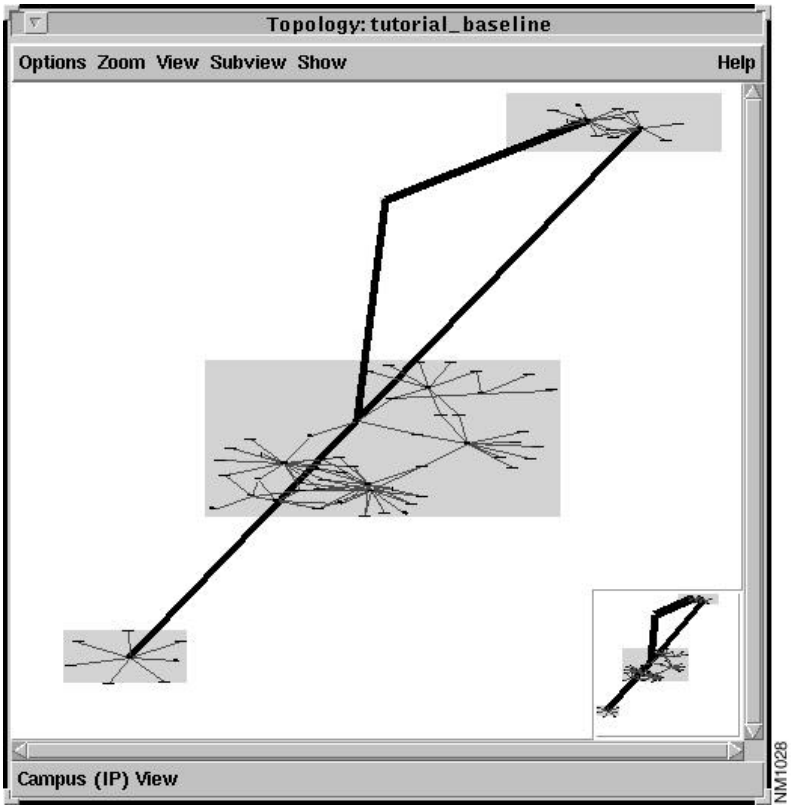

Figure 4-2 Topology Window: Campus View

Step 2 Zoom in on the campus in the upper-right corner of the Topology window by dragging a bounding box around it.

Press on the right mouse button while dragging the cursor around the campus, then release. The bounding box drawn around the campus you want to zoom in on is shown in Figure 4-3.

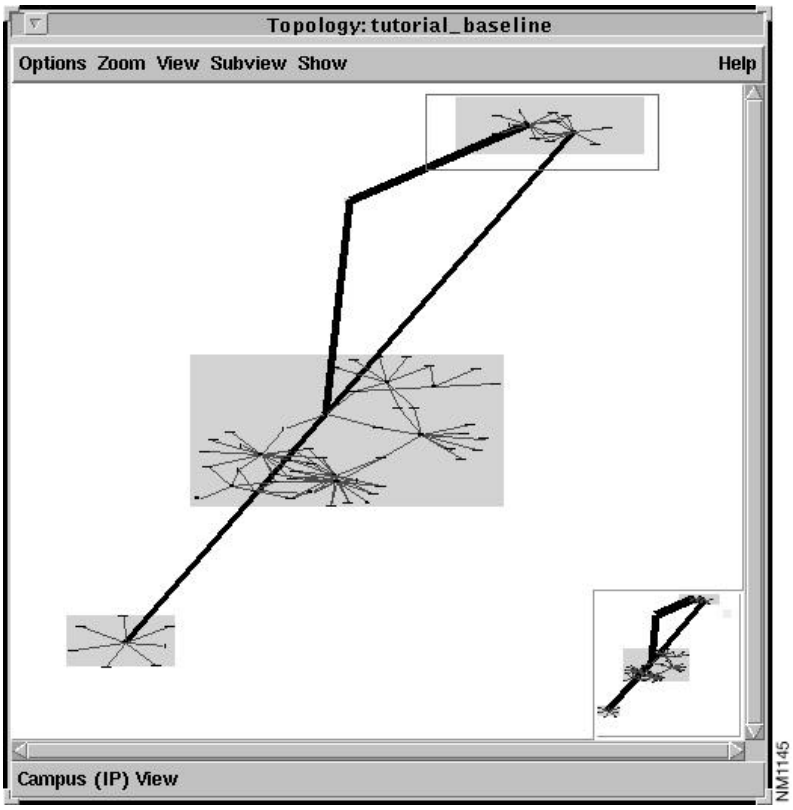

Figure 4-3 Topology Zoom Region

The Topology window now displays an enlarged view of the selected campus (**C1_net**), approximating the view shown in Figure 4-4.

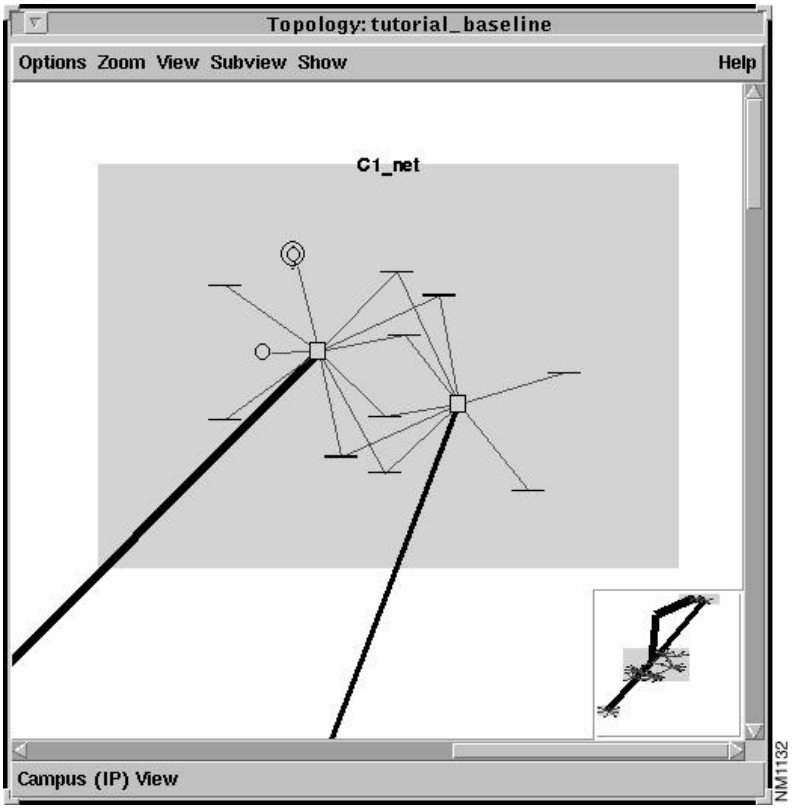

Figure 4-4 Topology: Zoomed View of Selected C1_net Campus

Step 3 Move the Ethernet LAN segment icons between the two displayed routers.

This is accomplished by pressing over an icon with the left mouse button and then dragging the cursor to the new desired location. Notice the **move** cursor (cross-hair with arrows) that is displayed when an object is selected for movement. Move each of the Ethernet LAN segment icons so they appear as shown in Figure 4-5.

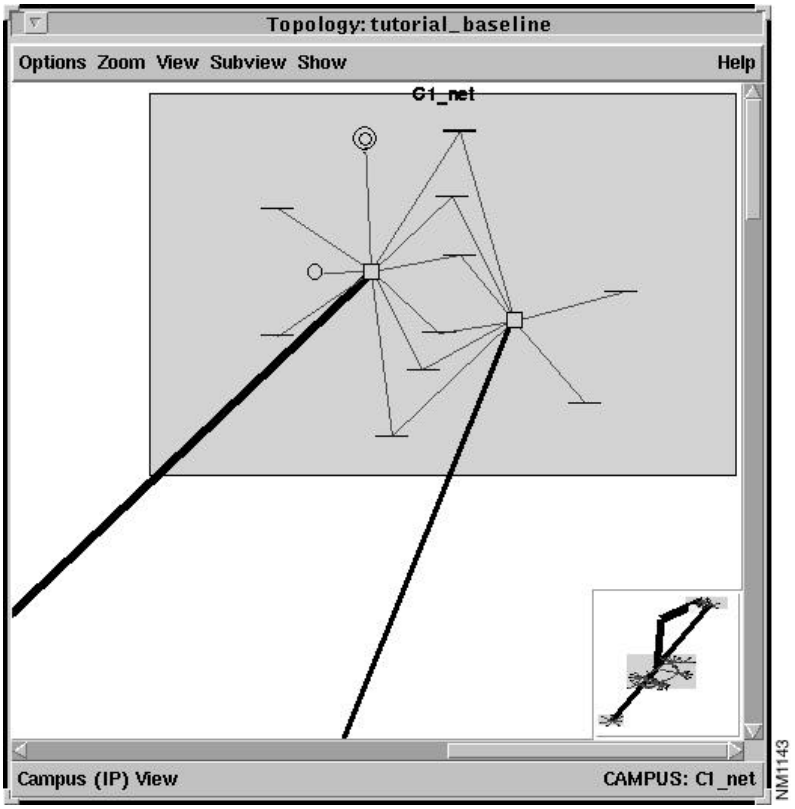

Figure 4-5 Topology: Moved LAN Segment Icons

Step 4 Move the right-most router icon further to the right.

Select and drag the router icon as shown in Figure 4-6. Notice the blue (logical link) and black (serial link) lines stretch to the router's new location.

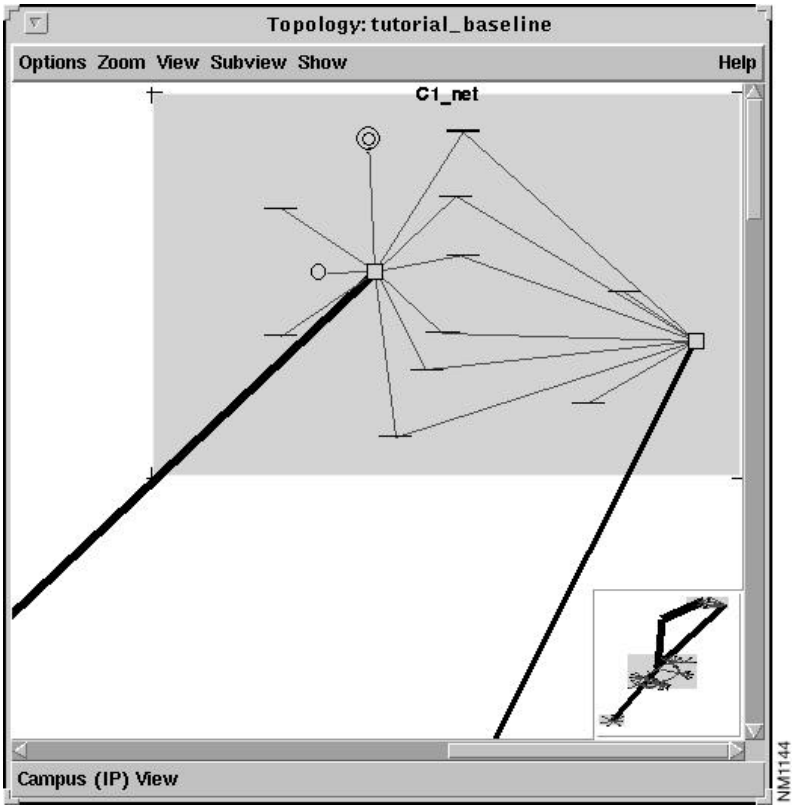

Figure 4-6 Topology: Moved Router Icon

LAN segment and router icons can be moved individually in this manner to reduce clutter or arrange a topology into a custom layout.

Step 5 Double-click on the right mouse button or select the **Zoom> All to Fit** menu option to view the entire topology again.

Step 6 Click on the right mouse button somewhere within the grey region that makes up the central (large) campus. Select the **Rename** menu option from the pop-up menu.

The Rename Window, shown in Figure 4-7, is displayed. Replace the current name, **C3_net**, with the new name: **Main_Campus**.

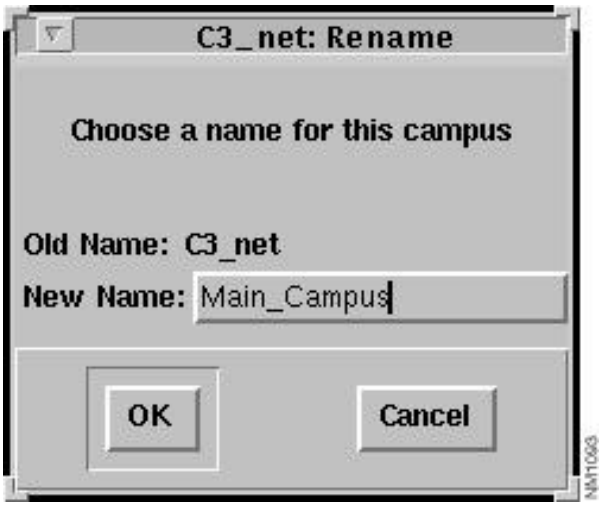

Figure 4-7 Rename Campus Window

Step 7 Select the **Show>Campus Labels** menu option and confirm that the new campus name is displayed.

Step 8 Zoom in on the campus **C4_net** by dragging a bounding box around it.

The zoom region is shown in Figure 4-8.

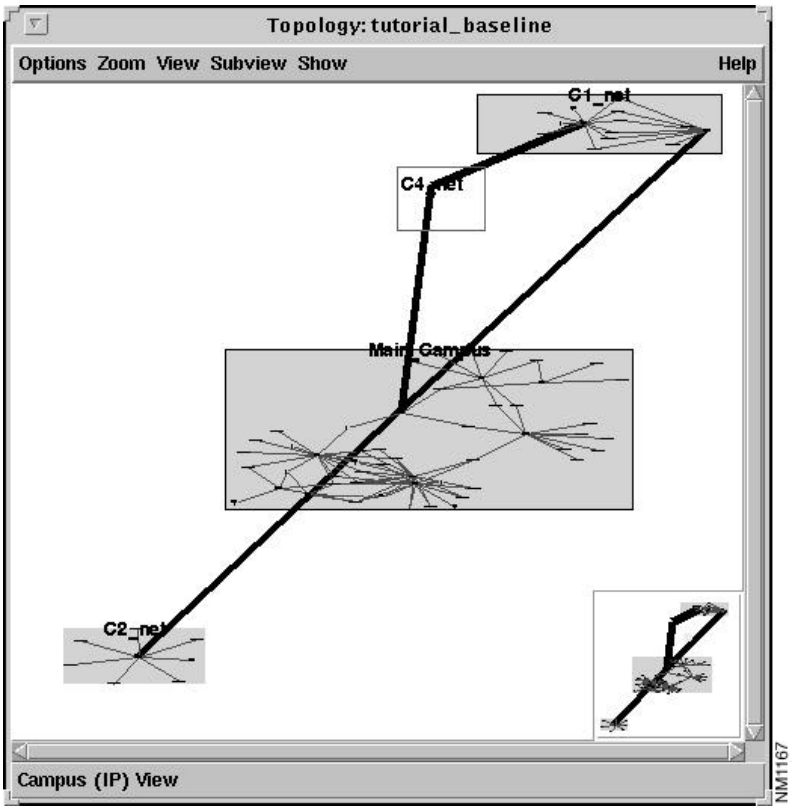

Figure 4-8 Topology Zoom Region

The Topology Window now displays an enlarged view of the **C4_net** campus, approximating the view shown in Figure 4-9. Notice the campus contains only one router, and no LAN segments.

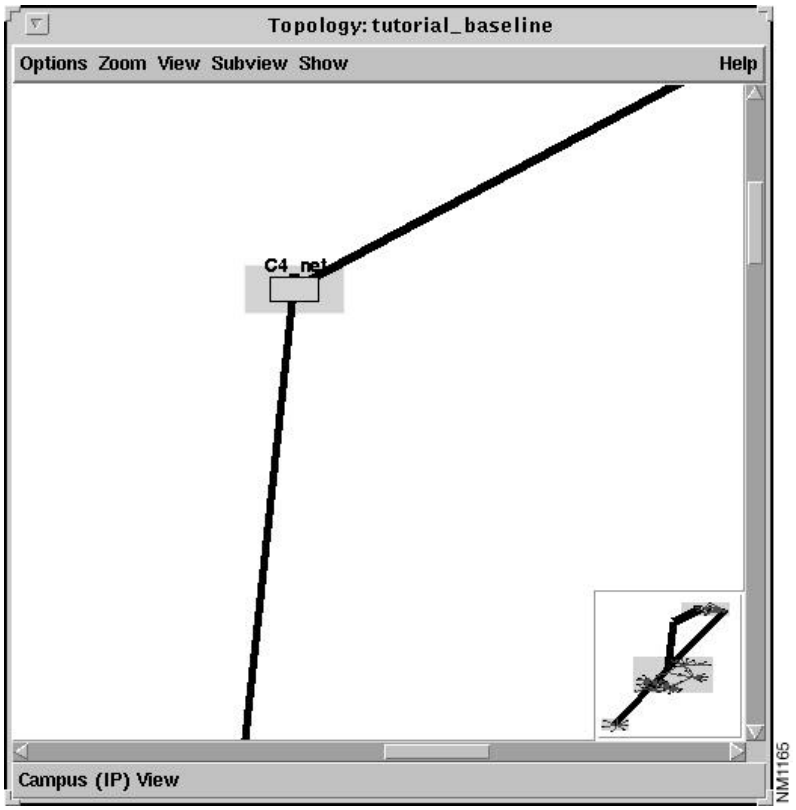

Figure 4-9 Topology: Zoomed In View of C4_net Campus

The default campus view is arranged such that serial links separate campuses. In the case of the **C4_net** campus, the single router displayed does not have any LAN interfaces. It only has serial interfaces and thus is placed in its own campus.

In customizing a topology, it may be useful to show this router belonging to a specific campus or physical location. For example, in this baseline, it may be useful to represent the **netsys9c** router in the **C4_net** campus as residing within the **C1_net** campus. This is done in the following steps.

Step 9 Click on the right mouse button in the grey area defining the **C4_net** campus, being careful not to click over the **netsys9c** router icon.

Step 10 Select the **Remove Campus** option from the pop-up menu.

The grey campus box vanishes, leaving just the **netsys9c** router icon, as shown in Figure 4-10.

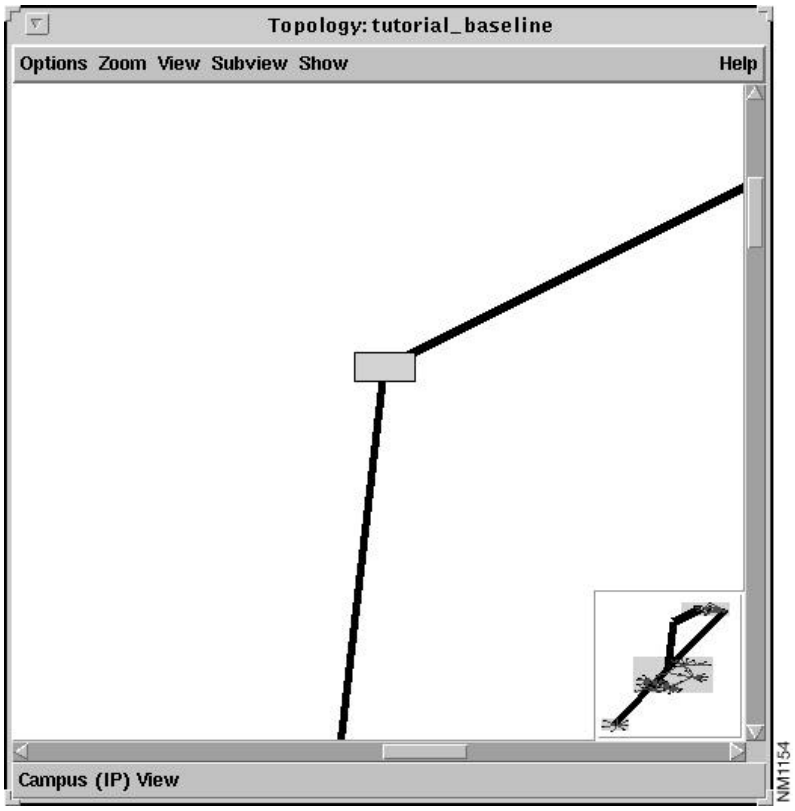

Figure 4-10 Topology: Campus Removed

Step 11 Click on the middle mouse button or select the **Zoom>Out** menu option until the campus in the upper-right corner of the window is visible.

Step 12 Move the **netsys9c** router icon into the upper right campus (**C1_net**). Double click on the right mouse button or select the **Zoom>All to Fit** menu option.

All of the topology is now displayed within the Topology window as shown in Figure 4-11.

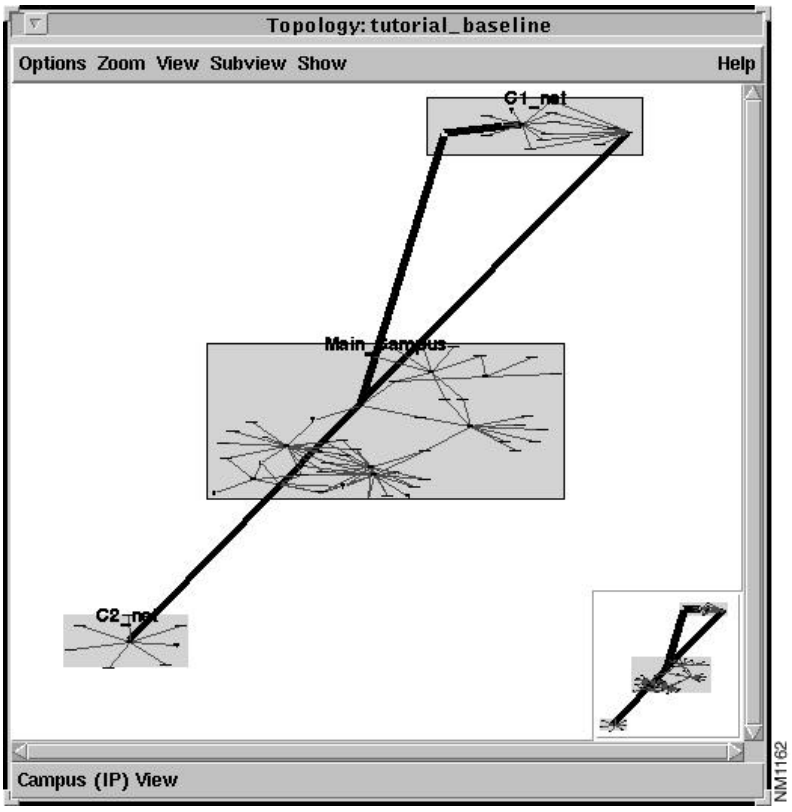

Figure 4-11 Topology: Moved netsys9c Router

Step 13 Move the **C1_net** campus to the left.

Position the cursor within the grey region defining the **C1_net** campus, without contacting any of the router or LAN icons. Press on the left mouse button, then move the entire campus to a position as shown in Figure 4-12. Notice all routers and LAN segments within the campus move with it, and the serial links are stretched to the new campus location.

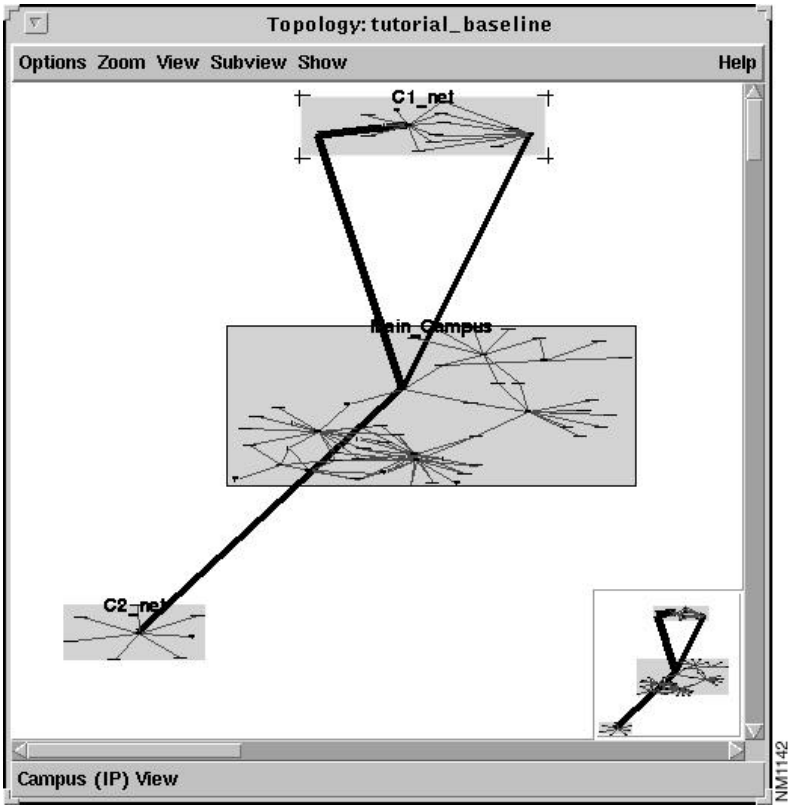

Figure 4-12 Topology: Moved C1_net Campus

Step 14 Resize the **C1_net** campus.

Select the **C1_net** campus by clicking on the right mouse button with the cursor within the grey region defining the campus. Notice the resize brackets that appear at the campus corners. Move the cursor towards one of the lower corners of the campus until it changes into the resize (angle bracket) cursor. Press on the left mouse button, then drag to a new position to resize the campus, as shown in Figure 4-13.

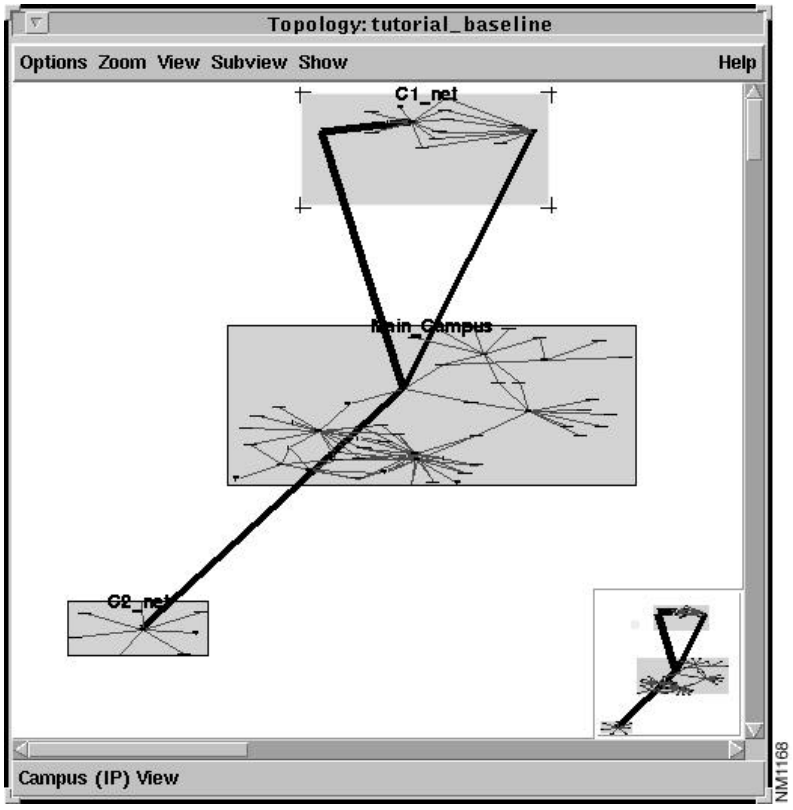

Figure 4-13 Topology: Resize C1_net Campus

Resizing a campus is useful for clearing clutter in a topology, or expanding to make room for additional or existing devices. For example, the **Main_Campus** campus might be resized and the devices within it distributed further apart for clarification (although this tutorial does not go through such an exercise.)

Step 15 Create a new campus.

Click on the right mouse button in the empty area in the upper left corner of the Topology window. Select **New Campus** from the pop-up menu. An empty campus is displayed, as shown in Figure 4-14.

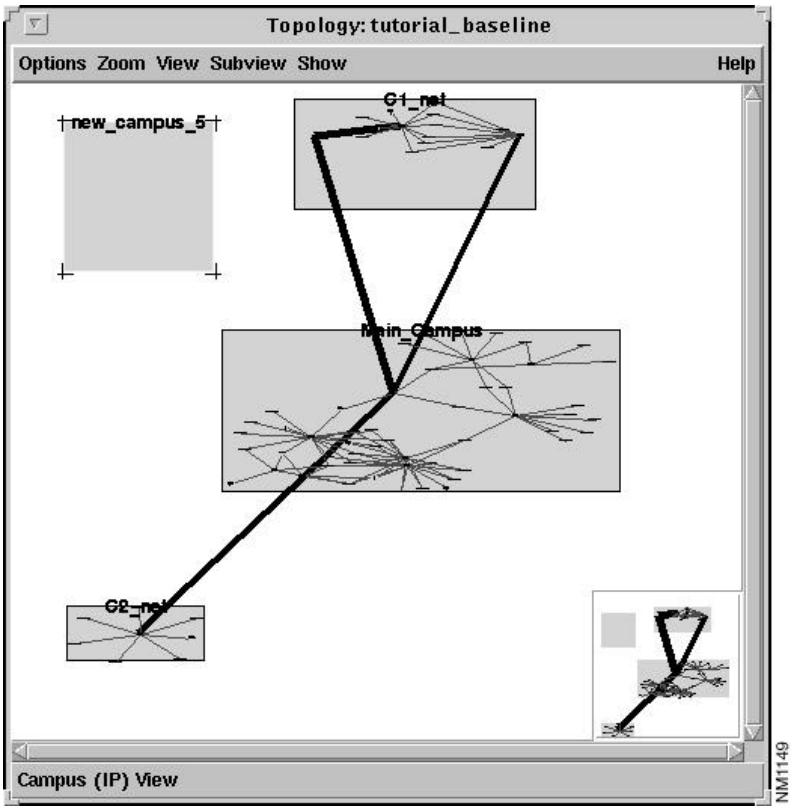

Figure 4-14 Topology: New Campus

As mentioned previously, the default campus view creates a campus for routers separated by a serial link. To clarify a topology, it may be useful to further separate routers and devices so they better approximate an enterprise's actual physical network layout. A new campus might be added to represent a unique site, and the routers belonging to that site moved into the new campus.

In this tutorial, the **netsys9c** router is moved into a newly created campus.

Step 16 Locate router **netsys9c** in the topology (the router that was moved into the **C1_net** campus previously.) Move it into the new campus.

The topology is now displayed as shown in Figure 4-15.

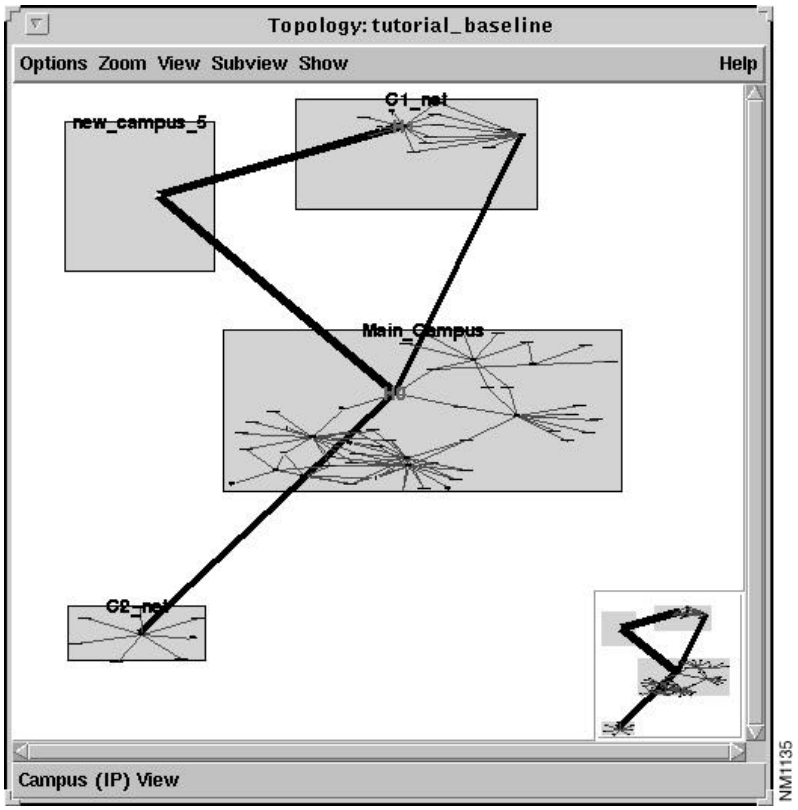

Figure 4-15 Topology: Moved netsys9c Router

Step 17 Select the **Options>Save Layout** menu option.

Subsequent uses of this *tutorial_baseline* will display the newly modified topology. To remove the changes you have made to the topology you can:

- not save the modified topology layout upon exiting this baseline, or
- select the **Options>Recalculate Layout** menu option.

  This causes the topology to revert to the original layout created when the *tutorial_baseline* initially was opened.