Many earthquake forecast models assume that large earthquakes occur on fault segments whose boundaries are effective in stopping or impeding rupture. A corollary is that the end points of rupture should lie “at” the segment boundaries. Here I propose a test that segment boundaries do in fact affect earthquake rupture. The test requires that faults and segment boundaries be defined in advance by map polygons, and that an objective procedure be specified for defining the end points of a future earthquake rupture. A segmentation model will then be judged successful to the extent that rupture termini fall into the boundary polygons in greater proportion than their relative area. Polygons are required in order to judge whether rupture ends “at” a boundary, and the polygons’ sizes should reflect the uncertainties of the estimated boundary locations. Retrospective testing is useful but will not be definitive because it requires arbitrary a-posteriori data selection. Prospective testing is a challenge because it requires precise definitions and rules for selecting data for future earthquakes. Some seismic hazard models, such as those prepared by the Working Group on California Earthquake Probabilities, imply the rate at which rupture termini should land in prescribed segment boundary zones. A simple null hypothesis is that rupture termini occur with equal probability anywhere on a fault.