Hints, Tips and Solutions

Galina Makovsky, Applications and Support Engineer

Q:I have some trouble counting the number of instances in a layout using Expert. I have tried to use the Chip Rover feature, but it does not give the right answer. I have the same cell instanced repeatedly in an array. What is the procedure for counting the number of occurrences of an instance in a top cell?

A: The Chip Rover>>Active Cell Tree shows the number of instances and arrays in the current cell. To see the number of instances in each array, expand the tree as in Figure 1. If there are arrays in it, multiply number of rows by number of columns to get cell count within the array.

The Edit>>Search command allows to find all cell instances and arrays in the Cell Hierarchy. To calculate the number of instance's occurring in a cell, check the number of rows and columns for each found object.

For complex cell hierarchy or if this operation is frequently performed, it would be more efficient to use LISA script to automate the routine as shown below:

```
-------------------------
listCells = "";
aCellNames = get_cell_list("");
nCountCells = aCellNames.size;
i = 1;
LOOP BEGIN
  IF (i GTR nCountCells) THEN (LEAVE LOOP);
  $$objs = (find objects (SEARCH_INSTANCE)
          /criteria = ({search_criterion_create(OA_
   CELL, aCellNames[i], EQ)})
          /visible);
  IF ($$objs.size GTR 0) THEN BEGIN
    IF (listCells EQL "") THEN ( listCells =
   (aCellNames[i]) )
    ELSE ( listCells = listCells & "\t" &
   (aCellNames[i]) );
  END;
```

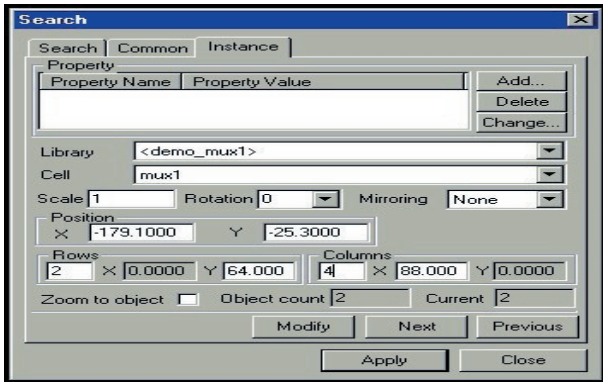

Figure 2. Counting the number of instances, using Search

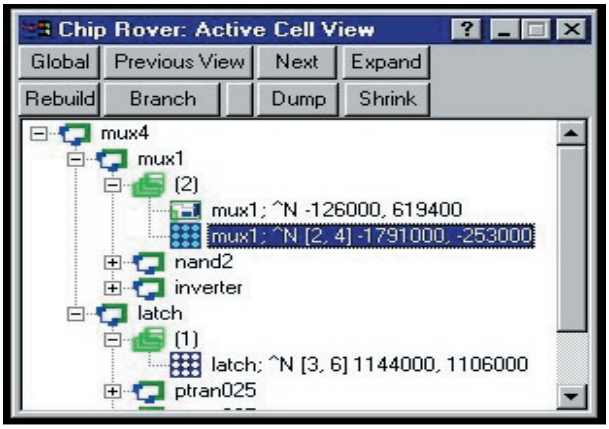

Figure 1. There are 9 instances of mux1 in the current cell ([2,4] = 8 instances)

```
  i = i + 1;
END;
varparams = {{listCells, "Instance of cell"}};
dlgparams = {"Instance count"};
vars = form_create(varparams, dlgparams);
if (vars.size GTR 0) THEN BEGIN
  display(vars[1]);
  $$objs = (find objects (SEARCH_INSTANCE)
          /criteria = ({search_criterion_create(OA_
   CELL, vars[1], EQ)})
          /visible);
  len = $$objs.size;
  display(len);
  $$cur_obj = $$objs.first;
 count = 0;
 LOOP BEGIN
  IF ($$cur_obj EQL nil) THEN (LEAVE LOOP);
    display($$cur_obj.shape & "("&&$$cur_obj.cols &
   ", " & $$cur_obj.rows&")");
    count = count + $$cur_obj.cols * $$cur_obj.rows;
    $$cur_obj = $$objs.next;
  END;
    display(count); ! Display count or write to file

END;
------------------------------
```

Call for Questions

If you have hints, tips, solutions or questions to contribute, please contact our Applications and Support Department

Phone: (408) 567-1000 Fax: (408) 496-6080

e-mail: support@silvaco.com

Hints, Tips and Solutions Archive

Check our our Web Page to see more details of this example plus an archive of previous Hints, Tips, and Solutions

www.silvaco.com