Using Spectre save/restart feature with ADE XL sweep/corners

How To...

You are running a simulation that includes time-consuming initialization sequence, followed by applying the required stimuli and measuring parameters of interest. The circuit is final and will not change, so you would like to use the save/restart feature to run the initialization sequence only once, store the final state and recover from it in many subsequent simulations. All those simulations will start at the same condition but will apply different stimuli afterwards, i.e. no changes in the netlist.

All of the above simulations must be done over corners. You are facing the difficulty with storing the final point of the initialization sequence - if only a filename (no path) is given in "savefile" parameter, then separate files are stored under the "netlist" dir of each point of ADE XL corners/sweep run. However, there doesn't seem a way to Restart/Recover each corner's point from the corresponding saved file. How can this be achieved?
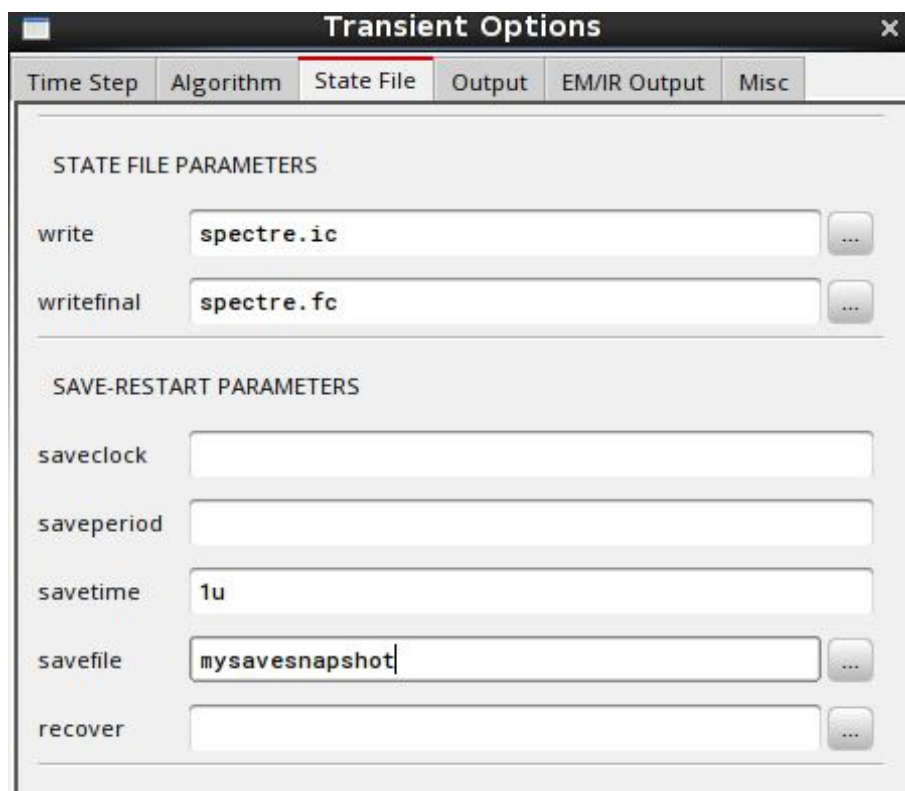
Answer

Please follow below steps:

1. First run the initial simulation where you would be saving the snapshot.

    In *Transient options* form, enter the *savetime* at which you need save the snapshot and file name.

    In this simulation, save snapshot in a central location which can be accessed by next corner simulations.
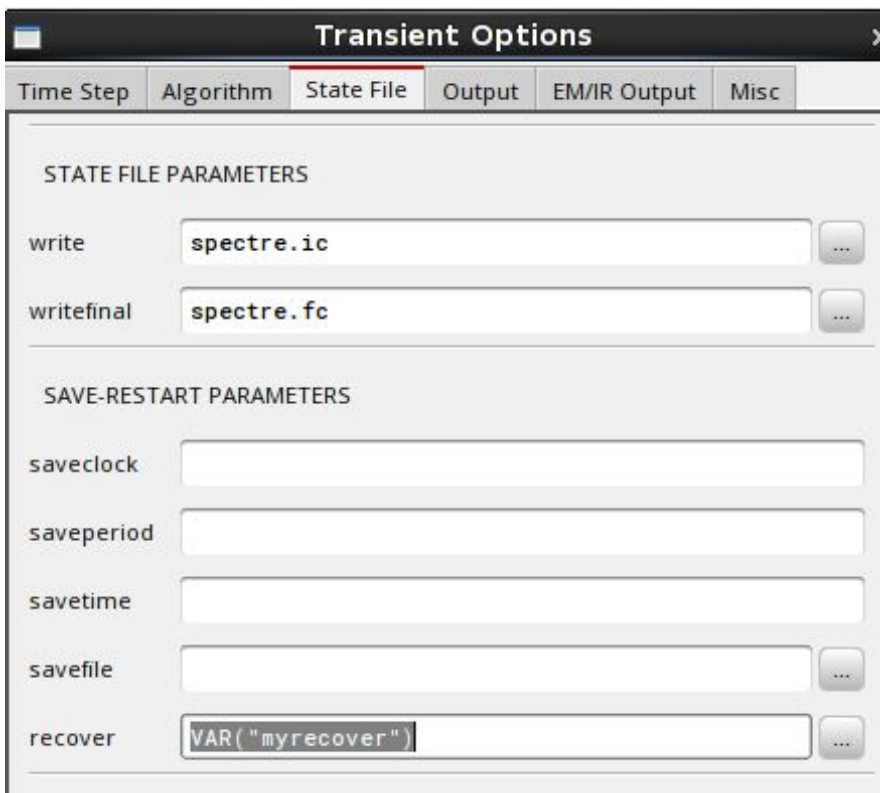

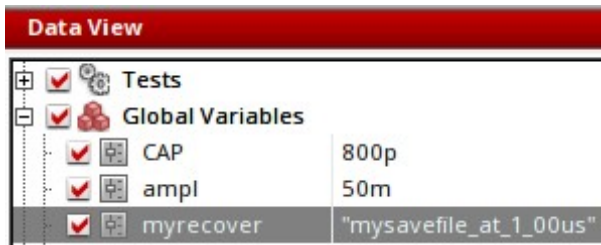2. The saved snapshot filename will have time value appended to it as *"mysavesnapshot_at_1.00us"*

    Rename this file to remove 'dot' character in the file name as *"mysavesnapshot_at_1_00us"*. ADE XL cannot parse string properly with dot character.

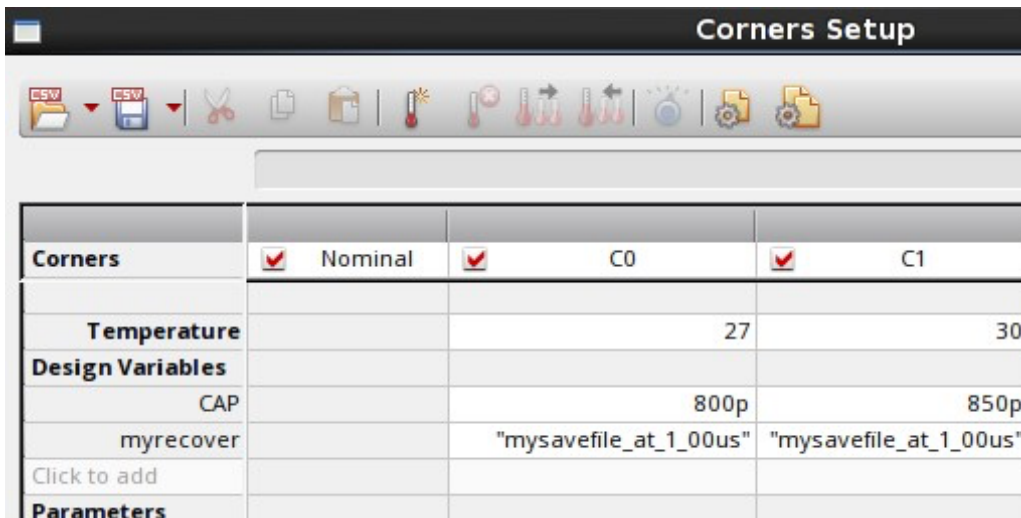3. Now setup the second test bench, set a transient analysis up to, say, 3u.

    In the *Transient Options* form, make recover a variable, say *"mysavesnapshot"* by using VAR syntax as *VAR("mysavesnapshot")*

4. In ADE XL, create a Global Variable called *myrecover*. (If it is not automatically created). Set the value to your saved snapshot file. Enter only the file name. For example *"mysavefile_at_1_00us"* (Use quotes with file name to parse it as string in ADE XL)

5. In Test Editor, *Setup → Simulation Files* and put the path to the directory where the above saved snapshot file is present in *"Include Path"*.
6. In Corners setup form, use snapshot file for each corner as below

Corners	☑ Nominal	☑ C0	☑ C1
Temperature		27	30
Design Variables			
CAP		800p	850p
myrecover		"mysavefile_at_1_00us"	"mysavefile_at_1_00us"
Click to add			
Parameters			

7. Run simulation.

In spectre.out, for every corner you can notice the simulation is restarted from the saved snapshot as below

```
*********************************************
Transient Analysis `tran': time = (0 s -> 3 us)
*********************************************
Recovering from save-restart file /net/vlno-praveena/export/home/praveena/VADE614/mysavefile_at_1_00us,
Restarting at time 1 us.
```