Hints, Tips and Solutions

Q How do I convert ISE files into a Silvaco format?

A. Use the DBINTERNAL translate.ise command.

The various forms of this command are

1) TRANSLATE.ISE TONYPLOT
PLT.FILE=ise.plt
OUT.FILE=silvaco.log

This command converts the ISE file "ise.plt" into the SILVACO file "silvaco.log". The resultant "silvaco.log" is displayed in TonyPlot.

This form of the TRANSLATE.ISE command is used to convert 1D output files (such as IV curves and S-Parameters as a function of frequency).

2) TRANSLATE.ISE TONYPLOT
GRD.FILE=ise.grd DAT.FILE=ise.dat
OUT.FILE=silvaco.str

This command converts the ISE file pair "ise.grd" and "ise.dat" into the SILVACO file "silvaco.str". The resultant "silvaco.str" is displayed in TonyPlot.

This form of the TRANSLATE.ISE command is used to convert 2D output files. The "ise.grd" file contains the description of a mesh. The "ise.dat" file contains data (such as doping, potential, mobility) at the node points.

If the "ise.dat" file contains only doping information this pair of files corresponds to a device description before simulation (such as the output from MDraw). The resultant "silvaco.str" file could then be used normally in an ATLAS simulation, for example

```
go atlas
mesh infile=silvaco.str
```

3) TRANSLATE.ISE DEVEDIT
BND.FILE=mdraw.bnd CMD.FILE=mdraw.cmd
OUT.FILE=devedit.in

This command converts the MDraw file pair "mdraw.bnd" and "mdraw.cmd" into the DevEdit input deck "devedit.in". A child DeckBuild is spawned which runs the translated input deck.

If the OUT.FILE is not explicitly mentioned then DBInternal will automatically generate the name for it. This will be of the form (modeled on a standard ISE filename)

```
pp<#>_ded.cmd
```

"pp" indicates this is a post-processed file, the <#> is a node number (chosen by DBInternal to be 1 bigger than the biggest node that currently exists in the directory), "ded" indicates the program the file was translated for is DevEdit.

4) TRANSLATE.ISE ATLAS
CMD.FILE=dessis.cmd
OUT.FILE=atlas.in

This command converts the Dessis command file "dessis.cmd" into the ATLAS input deck "atlas.in". A child DeckBuild is spawned which runs the translated input deck.

If the OUT.FILE is not explicitly mentioned then DBInternal will automatically generate one. This will be of the form

```
pp<#>_atl.cmd
```

Identical to the filename generated by TRANSLATE.ISE DevEdit except that "ded" is replaced by "atl" (to indicate that the file was translated for ATLAS).

DBInternal understands the standard "plot" variables that can occur in the "dessis.cmd" file, e.g

```
plot {
   grid = @grid@
   doping = @doping@
   plot = @dat@
   current = @plot@
   log = @log@
}
```

Any other variables that are used in the command file, for example

```
#if @<"@SimType@" == "IV">@
```

must be defined with VARIABLE commands (one variable per command), e.g

```
variable name=SimType value=IV
translate.ise atlas cmd.file=dessis.cmd
    out.file=altas.in
```

In order to properly translate the Dessis input deck DBInternal will need to read the device or devices that the "dessis.cmd" deck is simulating. Thus the @grid@ and @doping@ files should exist when translating "dessis.cmd".

Summary

The general form of this command is

```
go internal
translate.ise <Silvaco product>
     <ISE files>
     [out.file=<filename>] [!execute]
```

The “Silvaco product” is the product that we are translating the files for. Products recognized at the moment are “tonyplot”, “devedit”, and “atlas”.

The “ISE files” are the alien files that we want to convert into a Silvaco format.

The “out.file” is the name of the file we save the translation to.

The “!execute” command stops DBINTERNAL from running the Silvaco product on the translated file. Normally the TRANSLATE.ISE command automatically runs either TonyPlot (to view a translated data file) or DeckBuild (to run a translated command file). If you just want to generate the translated file without doing anything else with it use !EXECUTE on the TRANSLATE.ISE command.

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