

64-BIT NATIVE APPLICATION

BEGINNER PROFILE

Starting from now, all our EDA solutions will only be available in 64-bit versions for x86_64 platforms with Microsoft Windows Vista/7/8/10 or with RedHat Enterprise Linux 6 (RHEL6) and compatible Linux distributions.

Native 64-bit applications allow to overcome the limitations of 32-bit versions, such as loading large designs and simplifying installations on a 64-bit Linux OS.

SMASH 7.0 introduces a **profile concept** that is particularly useful for users who are not familiar with the product.

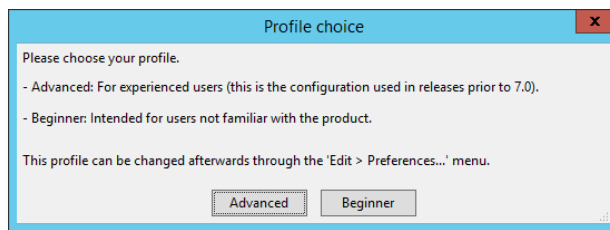
At first use, SMASH prompts the user to select a profile – Beginner or Advanced (it can be changed later with the preferences menu). Beginner profile implicitly saves all signals during simulation so that waveforms can be easily plotted later.

AC/NOISE DURING TRANSIENT OR DC

SMASH 7.0 provides an efficient way of detecting events or dynamic conditions to automatically launch small signal or noise analysis during a transient or a DC analysis.

The small signal or noise analysis can be dynamically triggered on time, current(s) or voltage(s) events thanks to 2 new directives:

- > **.RUNAC** directive to launch **small signal** analysis during a transient or a DC analysis.
- > **.RUNNOISE** directive to launch **noise** analysis during a transient or a DC analysis.

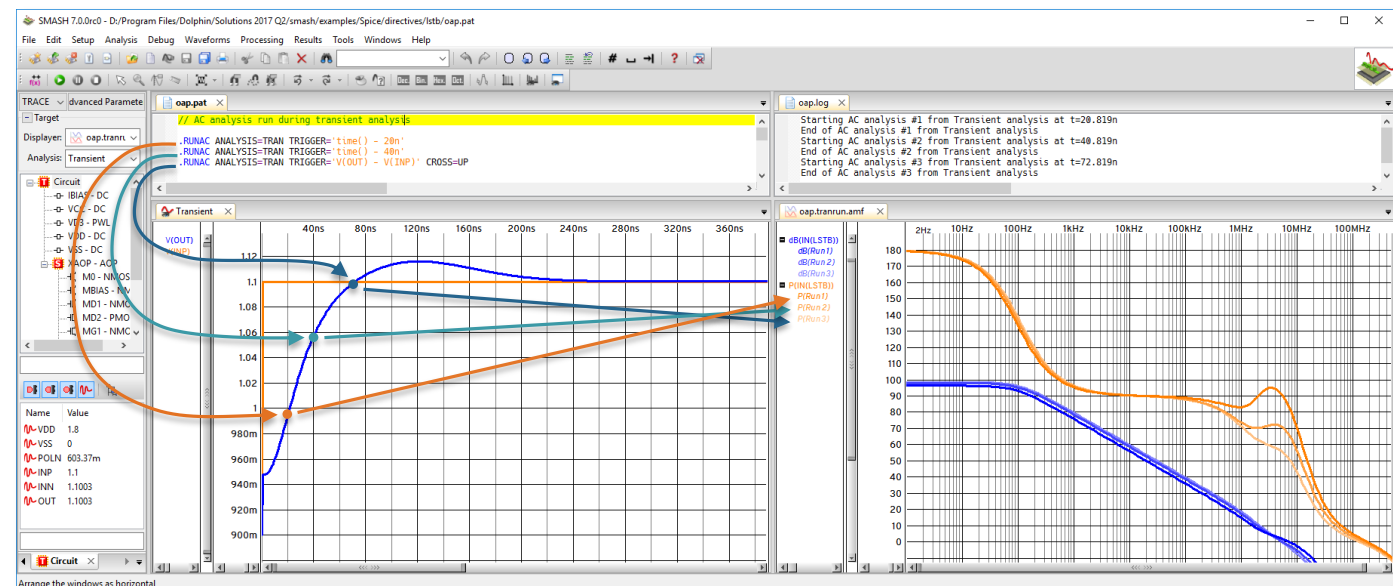


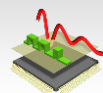
SLED EXTENSIONS

For having a centralized access of all the views of a project, SLED 3.0 allows to invoke an external executable to open a complementary file of a SLED's project. To do this, it is now possible to associate a user command line with any document extension.

For instance, you can associate GDSII files with a layout viewer. Once the preference is set, a double-click on a GDSII file item in the project manager will launch the layout viewer.

Coupled with post-processing directives like **.MEASURE** or **.FFT**, scheduling small signal or noise analysis by detecting events during a transient or a DC analysis is an efficient way to improve the productivity of the design characterization.





QUANTILES IN MONTE CARLO

For helping analysis of Monte-Carlo results, SMASH 7.0 adds the **computation of quantiles**. Quantiles are particularly useful as they are less susceptible than means or other moment-related statistics to long-tailed distributions and outliers.

Depending on the number of runs, results of quantiles include:

- quartiles 25%, 50%, 75%.
- percentiles 1%, 5%, 95%, 99%, etc...
- percentiles equivalent sigma $-i \cdot \sigma$ and $+i \cdot \sigma$ (for $I = 1$ to 6).

Confidence intervals are provided for these quartiles and percentiles.

```
Quantiles : -1.119678e+00 CI [ 2.5% ; 97.5% ]
PERCENTILE_1 : -1.119678e+00 [ -1.917737e+00; -8.889613e-01]
-SIGMA2 (PERCENTILE_2.27501319481792) : -8.889613e-01 [ -1.917737e+00; -5.650425e-01]
PERCENTILE_5 : -5.279711e-01 [ -1.093021e+00; 2.211921e-01]
-SIGMA1 (PERCENTILE_15.8655253931457) : 1.066438e+00 [ 5.630866e-01; 1.403150e+00]
PERCENTILE_25 : 1.680886e+00 [ 1.148333e+00; 1.893162e+00]
PERCENTILE_75 : 4.264001e+00 [ 3.844831e+00; 4.566909e+00]
+SIGMA1 (PERCENTILE_84.1344746068543) : 4.798589e+00 [ 4.459590e+00; 5.242173e+00]
PERCENTILE_95 : 5.864183e+00 [ 5.408692e+00; 6.676971e+00]
+SIGMA2 (PERCENTILE_97.7249868051821) : 6.665956e+00 [ 5.943906e+00; 7.341821e+00]
PERCENTILE_99 : 6.801962e+00 [ 6.649488e+00; 7.341821e+00]
```

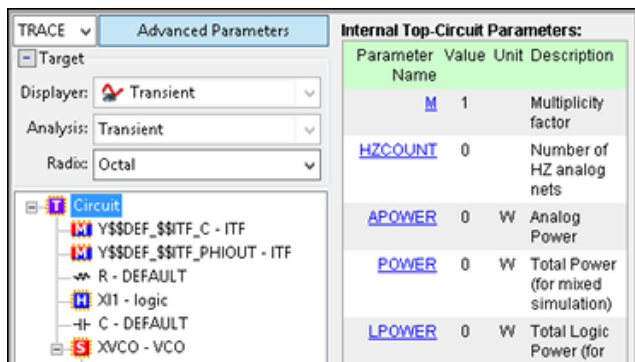
ADD TRACES AND PRINTS

To be more user-friendly, the **user's interface for adding traces and prints** has been re-designed in SMASH 7.0.

On top of the circuit hierarchy panel, a frame dedicated to trace/print configuration has been added.

This frame includes:

- a TRACE/PRINT toggle button to switch between both modes,
- a Displayer field that specifies the waveform viewer to which traces will be added,
- an Analysis field that specifies for which analysis traces will be generated,
- an Advanced Parameters button to access parameters or commands related to the selected circuit instance or to the selected signal/net/port.



Once the displayer and the analysis type have been selected, double-clicking on a signal/net/port will add it to the corresponding waveform viewer.

Traces can also be added using Drag & Drop.

When "PRINT" is selected, `.[L]Print` directives for the selected signals are added to the circuit's control file instead of adding them as traces to a waveform viewer.

PERFORMANCE IMPROVEMENT

SMASH 7.0 brings several optimizations such as:

- loading time of circuits using sub-micron processes,
- loading time of netlist containing many `.MEASURE` directives,
- Monte Carlo operating point searching,
- compilation speed of Verilog modules with large quantity of continuous assignments.

YOUR FEEDBACK MATTERS

SMASH is known as one of the best high speed mixed-signal simulators. To contribute suggestions and requests, please provide feedback on your user experience to support@dolphin-integration.com.