# NanoYield

PRIMARIUS

High-Sigma Yield Analysis Solution

Introduction

NanoYield is a yield oriented design platform for analysis and optimization of circuit yield in memory, digital and analog circuits. Based on Primarius' unique technology of statistical modeling and high-sigma analysis algorithms, NanoYield performs circuit statistical simulation with non-destructive precision, as well as acceleration through efficient algorithms and parallelization.

NanoYield improves designer productivity with the user-friendly GUI-based DFY (design for yield) environment called NDE (Nano Design Environment). Based on the design goals, NDE allows users to run variation analysis, predict yield, access the effectiveness of yield and circuit optimization efforts, and improve product competitiveness.

Distributed (on server farm) & Parallel Processing
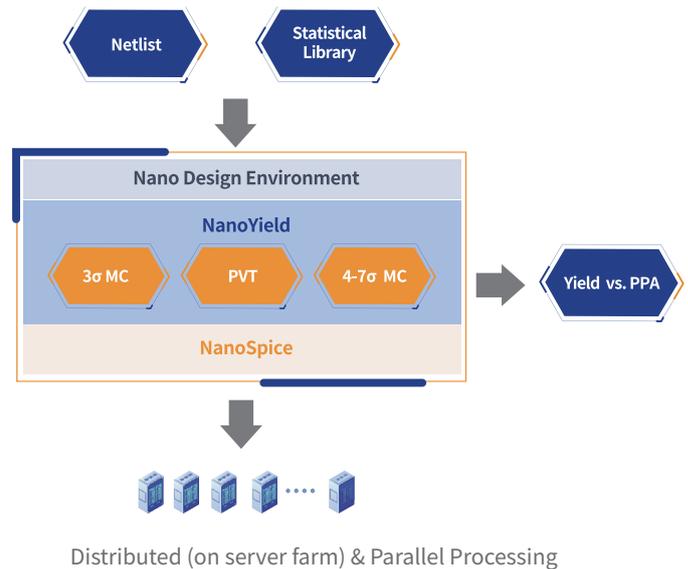
Key Advantages

- **Full integration**
  Built-in SPICE engine and high efficiency statistical algorithms
- **Superior performance**
  Fast PVT/Monte Carlo/Advanced high-sigma analysis
- **Scalable parallelization**
  Near-linear scaling on computer farm or public clouds
- **Validated accuracy**
  Silicon validation in 40/28/14/7/5/3nm
- **Simplified licensing**
  Most cost-effective parallelization licensing model

Specifications

- Monte Carlo analysis
- Full SPICE model supports
- Full SPICE analysis features
- Full PVT and fast PVT analysis
- High-sigma analysis (4-7σ+): 100K+ variables
- Supports HSPICE and Spectre netlist formats
- System high-sigma analysis for full chip yield analysis
- Powerful GUI-based circuit analysis features through NDE
- Rich yield prediction and statistical circuit analysis functions, e.g., sensitivity analysis, parameter sweeping

Applications

- High-sigma yield analysis for memory and standard cell designs
- Yield prediction and optimization for analog and digital block designs
- Foundries/IDMs technology development for SRAM yield IMPROVEMENT

Fast-PVT and high-sigma Analysis Examples