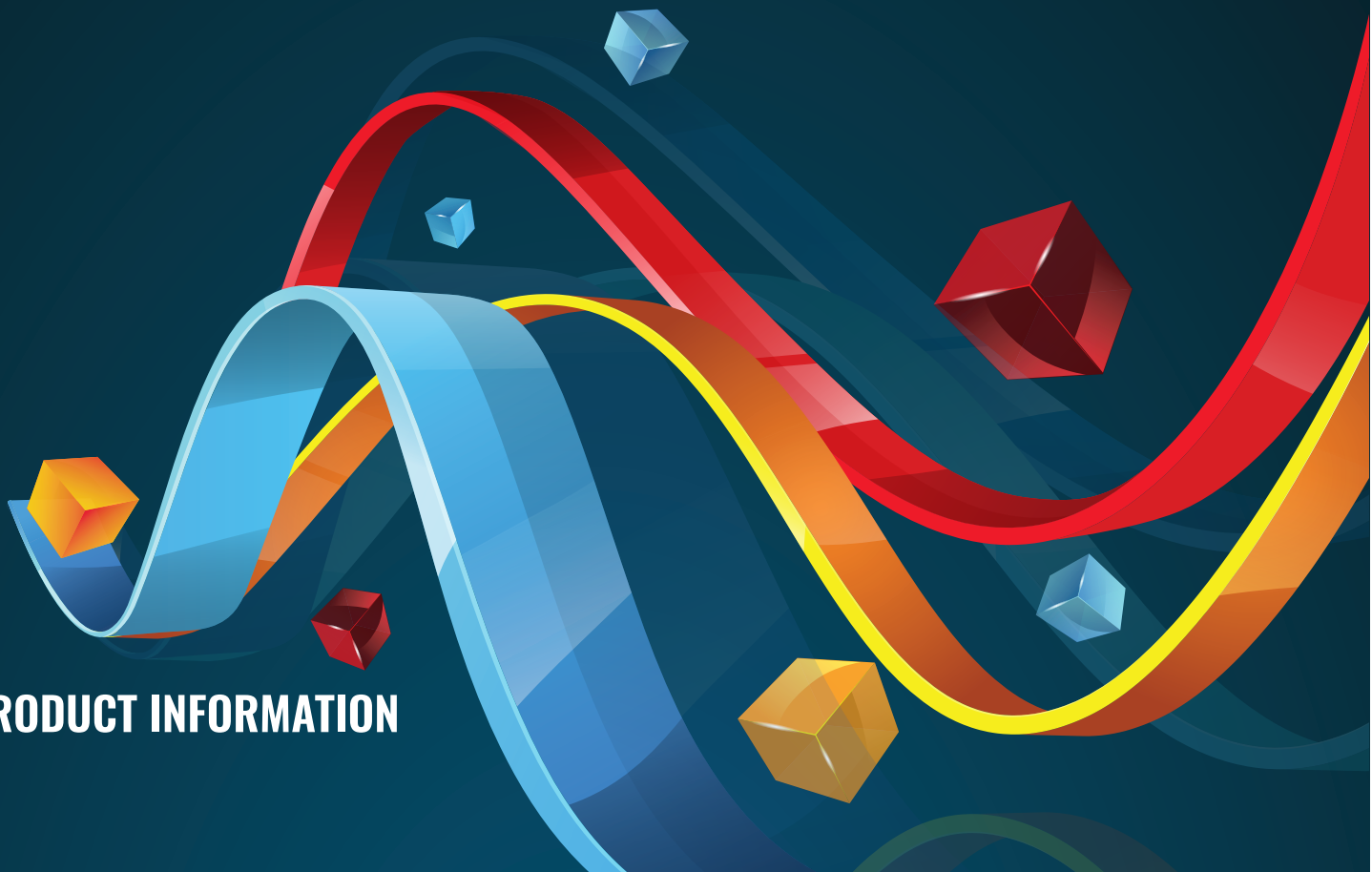




extendsim[®]

Power Tools for Simulation



PRODUCT INFORMATION



ExtendSim CP Continuous Process

A robust set of core features plus specialized constructs for modeling continuous processes.

Use this package to model any process where time advances in equal steps and values are recalculated at each periodic step. Graphically represent the dynamics of continuous processes, exchange information with other applications, manage big data using the internal relational database, perform analysis, and report results. For rapid model building, ExtendSim CP includes pre-built components that facilitate common modeling tasks as well as an equation editor to calculate values for, or perform operations in, models. It also has a full-featured IDE and sophisticated programming tools, so you can create custom components that are fully integrated, reusable, and fit any continuous process.

FEATURES

- Hierarchical model building for unlimited levels of submodels; Navigator for jumping through model structure
- Interactive dialogs, controls, and user prompts, even during the simulation run
- Internal relational database for managing data, providing a foundation for building complex, scalable models
- Import/export and dynamic linking between model data and internal and external data sources such as spreadsheets
- Authoring environment for creating customized interactive user interfaces including animation
- Scenario Manager for designing and running experiments; built-in Optimizer for determining optimum parameter values
- Equation blocks for entering logical statements, writing compound conditions, and specifying loops without programming

Santee River Basin model
continuous hydrologic model predicts how operational alternatives will affect hydropower generation, lake levels, in-stream flow, and water uses

Santee River Basin (JERC P-576)
Lake Murray (Hydrology) • Broad River

Santee River Basin (JERC P-576)
Lake Murray (Hydrology) • Broad River

Santee River Basin (JERC P-576)
Lake Murray (Hydrology) • Broad River

- A built-in IDE for creating custom components -- API, compiler, source code editor and debugger, dialog editor, graphical UI builder, include files, extensions, Active X controls, COM, and more
- Continuous Process, Monte Carlo, Agent Based, and State/Action modeling

TYPICAL USES

- CONTINUOUS PROCESSES
- Bioenergy
 - Biological
 - Chemical
 - Control Systems
 - Ecological
 - Economics
 - Electronics
 - Engineering
 - Environmental
 - Finance
 - Hydrological Processes
 - Mathematics and Physics
 - Mechanical Engineering
 - Medicine and Pharma
 - Scientific Systems
 - Sustainability
 - Water and Wastewater Management

ExtendSim DE Discrete Event

Adds a comprehensive, message-based discrete event architecture and capabilities to ExtendSim CP.

The essential tool for researching operational performance, ExtendSim DE is an integral part of Lean, Six Sigma, risk and throughput analysis, business reengineering, and capacity planning projects. Uniquely identify, track, and analyze the behavior of physical or logical entities when events cause them to change state or move through the system. Predict the behavior of complex and large-scale systems, explore the effects of variations, facilitate the management of resources, and optimize operations. Insure that the functioning of existing systems is well understood and that the design of new systems and processes is efficient and beneficial.

FEATURES

- Pre-built discrete event blocks represent entity creation, queues, activities, routing, and more
- Priorities, preemption, reneging, jockeying, blocking, and balking
- Robust message-based discrete event architecture for intuitive modeling
- Customizable attributes and rule-based routing
- Batch and unbatch items for processing
- Statistical analysis with confidence intervals
- Warm-up periods with statistical clearing
- Shifts for controlling resources and activities
- Resource pools for optimizing constraints
- Customizable queueing algorithms

Emergency Department
using analytics to influence the architectural, clinical, and operational design of an emergency department

RLJ healthcare
OHC
OMT Group

- Advanced Resource Management (ARM) for organization and allocation of resources
- Query Equation capability for ranking database records
- Discrete Event, Continuous Process, Monte Carlo, Agent Based, and State/Action modeling
- Plus all the features and capabilities of ExtendSim CP

DISCRETE EVENT

- Banking Systems
- Biomedical Research
- Business
- Call and Customer Contact Centers
- Communication Systems
- Healthcare
- Insurance and Financial Services
- Inventory
- Lean and Six Sigma
- Logistics and Scheduling
- Manufacturing
- Material Handling
- Pilot Studies
- Procedural Optimization
- Service and Retail Systems
- Supply Chain Dynamics

ExtendSim Pro Advanced Simulation Technologies

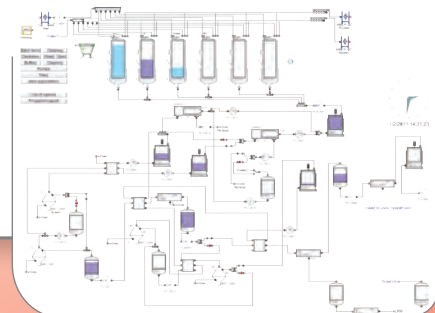
Adds advanced simulation capabilities for specialized industries to ExtendSim DE.

Use ExtendSim Pro's Discrete Rate module to simulate high-volume or bulk-flow processes, high-speed systems such as packaging lines, and any other rate-based process that can be described in terms of tanks, levels, and valves. In these systems the rates are recalculated when events occur, affecting how fast the product moves and what the yields will be given the model's constraints and configuration.

To analyze the impact of resource availability on system performance, use the RelySim module included with ExtendSim Pro. RelySim integrates reliability-block-diagramming (RBD) with ExtendSim simulation capabilities. Measure the impact of scheduled and unscheduled downtimes on process throughput and production costs. Explore the relationship between component reliability and component redundancy, spare parts inventory, resource management, and maintenance.

FEATURES

- Rate-based capability for modeling the storage and transfer of bulk flow "stuff" or high-speed/high-volume "things". Components for simulating the flow of bulk materials such as powders, fluids, minerals, and chemicals or the production, mixture, filling, and packaging of large quantities of things such as cereal, soap, cans, and bottles. Flow attributes for characterizing volumes or quantities of flow, indicators to report categories or ranges for flow levels, constraints and paths for routing the flow, and extensive rules for merging and diverging the flow.



- Graphical interface for building reliability block diagrams (RBD's) and determining resource availability. Captures reliability behavior and assists in defining repair policies. Illustrates how each component's availability status impacts the status of surrounding components and the status of the system as a whole. Stores time-between-failure and time-to-repair random distribution definitions, associates any number of failures, shifts, and maintenance events with a particular component for accurate availability modeling.
- Data exchange between Oracle database and ExtendSim
- Add-In for creating an ExtendSim database in Excel
- Stat::Fit® (from Geer Mountain) for distribution fitting

PRO

- Airplane and Automotive
- Bottling Plants
- Call Centers (high volume)
- Chemical Processes
- Distribution Logistics
- Food Processing
- Mining
- Networks
- Oil and Gas
- Packaging Lines
- Paper Flow
- Pit-to-Port and Ship-to-Shore Modeling
- Production Lines
- Rate-Based Systems
- Reliability Engineering
- Security
- Service Centers
- Transportation and Traffic Systems

PRODUCT COMPARISON

	ExtendSim Pro \$4,995*	ExtendSim DE \$3,495*	ExtendSim CP \$995*
EXTENSIBLE MODULAR DESIGN			
· Pre-built libraries of blocks for modeling tasks and continuous processes	●	●	●
· Create custom blocks and components, save in libraries for reuse	●	●	●
· Message-based Item library for discrete event modeling	●	●	●
· ExtendSim DB Add-In for creating ExtendSim databases in Excel	●	●	●
· Integrated Stat::Fit application - fit data to a distribution	●	●	●
· Rate module for simulating high-speed or large-volume bulk flow systems	●	●	●
· RelySim module that integrates RBD with process flow simulation	●	●	●
GRAPHICAL MODEL BUILDING & SIMULATION FRAMEWORK			
· Right-Click to automatically add and connect blocks on worksheet	●	●	●
· Unlimited hierarchical layers and submodels; save Hblocks in libraries	●	●	●
· Authoring environment for creating custom interactive model interfaces	●	●	●
· Clone parameters, tables, and charts to worksheet and Notebooks	●	●	●
· Change parameters and interact with model during simulation run	●	●	●
· On-screen results, graphs, reports, and integrated animation	●	●	●
· Full-featured equation editor for compiled logical statements and mini-programs	●	●	●
· Numerous tools and methods for monitoring and verifying results	●	●	●
· 35 built-in distributions, plus create your own	●	●	●
· 64-bit scalability - build, view, and run models of any size	●	●	●
· Advanced Resource Mngt for complex resource requirements and allocation rules	●	●	●
· Template library with pre-fabricated model segments	●	●	●
· Identify system entities using string, value, and database attributes	●	●	●
· Simulate rate-based flows of material - tanks, levels, valves, and storage	●	●	●
· Identify and organize quantities of flow using layer and string layer attributes	●	●	●
· Graphically define reliability relationships between system components	●	●	●
EXPERIMENTATION, OPTIMIZATION, & STATISTICAL ANALYSIS			
· Scenario Manager with export of analysis to JMP and Minitab	●	●	●
· Evolutionary Optimizer - open source and fully integrated	●	●	●
· Sensitivity analysis for exploring alternatives	●	●	●
· Quantile and interval statistical analysis with confidence intervals	●	●	●
· Dynamically export data to Excel for analysis	●	●	●
· Warm-up periods with statistical clearing	●	●	●
· Activity Based Costing for assessing financial outcomes	●	●	●
· Automatic summary statistics for queues, activities, and resources	●	●	●
· Import data-fitted distributions from Stat::Fit	●	●	●
DATA MANAGEMENT & EXCHANGE, REPORTS, CONNECTIVITY			
· Internal relational databases provide a robust foundation for scalable models	●	●	●
· Dynamically link model data and tables with internal database tables	●	●	●
· Import/Export model data using Excel, most databases, and XML or FTP files	●	●	●
· Multiple Notebooks per model, for documentation and inputs/outputs	●	●	●
· Interactive read/write to exchange data with Excel	●	●	●
· Reports Manager with multiple customizable filters	●	●	●
· Customizable Scatter, Line, Histogram, Gantt, and DB Line Chart blocks	●	●	●
· Automated reports on component reliability, down events, TBF, TTR, and more	●	●	●
· Exchange model data with Oracle database	●	●	●
DEVELOPER POWER			
· Integrated development environment optimized for simulation	●	●	●
· Create reusable blocks and components in any field; save in libraries	●	●	●
· Graphical UI builder for custom block dialogs and icons	●	●	●
· Blocks are compiled to machine code for speed	●	●	●
· Rich API with thousands of built-in functions	●	●	●
· Interactive source code debugger with conditional breakpoints	●	●	●
· Profiler for optimizing block performance	●	●	●
· Create wizards for tasks or to interact with users	●	●	●
· Call DLLs and Shared Libraries for additional capabilities	●	●	●
· Control of and by other applications using COM/ActiveX	●	●	●
· Exposed database API including database event messages	●	●	●
· Open source discrete event technology	●	●	●
· Open source rate-based technology	●	●	●
· Advanced LP solver technology	●	●	●

* Pricing is per Individual license. Call or email for pricing of other license types.

www.ExtendSim.com

Imagine That Inc.
6830 Via Del Oro, Suite 230
San Jose, CA 95119 USA

408.365.0305
info@ExtendSim.com

