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TruckSim Model and License Options

This document summarizes model and license options for TruckSim 2025.0. Unless otherwise noted, all features are supported on all operating systems.

TruckSim for Windows

The basic TruckSim installer provides a database and browser with a user interface, plotter, animator, both 32-bit and 64-bit math model solver programs, extensive documentation, and many example vehicles, procedures, and simulations. Two versions of the browser, math model libraries, visualizer, and other tools are provided to work with 32-bit and 64-bit environments.

The TruckSim math model supports single-unit and combination vehicles. The TruckSim GUI supports a lead motor vehicle unit with up to five axles, semitrailers with up to four axles, and dollies with up to three axles. Suspensions can be generic/independent or solid axle. Advanced users can simulate more complex vehicles by using generic GUI screens: TruckSim supports up to 64 units, each with any number of axles in groups of 1, 2 (tandems), or 3 (tridems). The maximum number of axles allowed on a vehicle is 128.

The model works as-is and can optionally be extended with the built-in scripting language (VS Commands), embedded Python, Simulink, and LabVIEW. The math model can also be extended using external programs written in MATLAB, Visual Basic, C/C++, Python, and other languages that can interact with Windows DLLs. Up to 200 built-in moving objects can be controlled to simulate traffic and safety-related scenarios.

The 32-bit and 64-bit versions of the TruckSim math models run at the same speed, with the two versions being provided to support compatibility with third-party software. When TruckSim is used alone, there is a choice between 32- and 64-bit browsers (`TruckSim.exe` and `TruckSim_64.exe`); when used with third-party 64-bit software (e.g., 64-bit Simulink), the appropriate solver plugin library must be used.

TruckSim for Linux

TruckSim for Linux is identical to TruckSim for Windows with two major differences; it does not include the TruckSim browser, and the math model is 64-bit only.

TruckSim for Linux includes a database, visualizer (plotting and animation), math model solver library, extensive documentation, and many example vehicles, procedures, and simulations.

TruckSim for Linux is mostly used for automation for sites with many TruckSim installations.

TruckSim 2025.0 License Options

Starting in 2025.0, TruckSim license managers will only accept a limited number of new licenses. Each of these new licenses will have access to what previously would have required multiple

license checkouts. The intent is to streamline the licensing process by requiring only a single license checkout from the license manager. See below for the list of acceptable licenses in 2025.0 and newer license managers.

Table 1. New TruckSim Feature Codes in 2025.0

Feature Name	Feature Code	Includes
TruckSim Math Model Only	trucksim	TruckSim Math Model
TruckSim Base	trucksimbase	All standard functionality including VS Browser and TruckSim Math Model
TruckSim with Options	trucksimoptions	Everything in TruckSim Base as well as all add-on features in TruckSim (excluding Real-Time)
TruckSim Real-Time Base	trucksimbasert	Everything in TruckSim Base as well as access to all supported Real-Time Operating Systems
TruckSim Real-Time with Options	trucksimoptionsrt	Everything in TruckSim Real-Time Base as well as access to all add-on features in TruckSim
TruckSim Headless	trucksimheadless	All the functionality HPC licenses previously provided with the addition of access to all TruckSim add-on features

TruckSim Math Model Only

Grants access to basic solver functionality (no additional features), without access to the TruckSim VS Browser. The TruckSim solver supports all TruckSim vehicle configurations based on rigid sprung masses (no frame torsional flexibility). Since this license does not grant access to VS Browser, it is not available for checkout from the VS Browser license manager.

TruckSim Base

Grants access to basic solver functionality as well as TruckSim VS Browser.

TruckSim Base now also includes support for the Windows-based desktop driving simulator. Driving hardware is either a Logitech G29 or G920 steering wheel, shifter, and pedal set. Although no longer produced by Logitech, Mechanical Simulation maintains legacy support for the G27. The DS example datasets include software to support a single live connection between a vehicle math model and the VS Visualizer. Additional live animation licenses are provided in TruckSim with Options and TruckSim Real-Time with Options licensing.

TruckSim with Options

Grants access to all functionality provided in TruckSim Base with the addition of all add-on features (excluding Run-Time features). Additional add-on features provided include:

ADAS Sensors

Allows activation of up to 99 built-in range and tracking sensors to sense moving objects (up to 200). Calculated sensor detection variables can be sent to external controller models in Simulink, LabVIEW, or other environments.

Frame Twist and Suspended Cab

Allows use of models with frame twist degrees of freedom (DOF) that represent the distribution of torsional compliance along the length of the Sprung Mass body and therefore affect the load transfer to the tires. When enabled, the Frame Twist option affects the motor vehicle and a trailer, if linked.

The lead unit with frame twist also has a suspended cab with three additional DOF.

TruckSim Real-Time Base

Grants access to all functionality provided in TruckSim Base with the additional ability to run on all supported Real-Time Operating Systems.

TruckSim Real-Time with Options

Grants access to all functionality provided in TruckSim with Options with the additional ability to run on all supported Real-Time Operating Systems.

TruckSim Headless

This license allows additional process instances to simultaneously run TruckSim simulations on a targeted machine (process-level parallelism). When distributed from a license server, it provides a lightweight licensing mechanism well-suited for High-Performance computing. Headless licensing is best suited for large scale deployments where no single external simulation master is in control and when several (up to thousands) of simultaneous simulations are needed. While this license provides similar functionality to the HPC license formerly used in TruckSim, a key difference is the Headless license also includes the ability to run simulations utilizing all add-on features provided in TruckSim with Options. This license can only be checked out from the CLI license manager (cs-lm-cli).

Third-Party Tire Models (Siemens and COSIN)

The TruckSim Windows installation includes interfaces for tire models from Siemens (MF-Tyre/MF-Swift) and COSIN (FTire). Example datasets are included for each of these tire model options. The three license options are:

1. Siemens MF-Tyre v2212 natively connected with TruckSim runs under any TruckSim license together with all options -except the **Enveloping contact**, **Rigid-ring**, **Turnslip,** and **Temperature Model** options that run under Windows and Linux OS.

2. Siemens MF-Tyre v2212 connected with TruckSim on Simulink requires an optional paid license from Siemens in addition to a basic TruckSim license that runs under Windows OS.
3. Siemens MF-Swift v2212 (including **Enveloping contact**, **Rigid-ring**, **Turnslip,** and **Temperature Model** option) requires an optional paid license from Siemens in addition to a basic TruckSim license. With this license the MF-Tyre/MF-Swift model will work together with all options that run under Windows and Linux OS.
4. COSIN FTire requires an optional paid license from COSIN in addition to a basic TruckSim license. With this license the FTire model will work together with all options that run under Windows OS. Any version older than FTire 2021-3 is not supported.

These external tire models support 32-bit and 64-bit versions of their respective solvers.

TruckSim Real-Time

RT Platforms

The TruckSim installer for Windows includes support for seven Real-Time platforms:

1. dSPACE DS1006/DS6001 and SCALEXIO
2. National Instruments LabVIEW RT/VeriStand (ETS OS and Linux RT OS)
3. Opal RT-LAB (QNX RT OS and Linux RT OS)
4. Concurrent Real Time System
5. A&D Technology
6. MathWorks Speedgoat
7. Vector CANoe

Either a TruckSim Real-Time Base or TruckSim Real-Time with Options license is needed to run on any of the above systems.

The TruckSim RT solvers do not work with the external component models from Siemens, COSIN, or AVL.

Extra Live Animations

Included in TruckSim Base and TruckSim Real-Time Base licenses is support for a single connection between the math model and VS Visualizer. If more instances of VS Visualizer are required on the same or across multiple machines, TruckSim with Options or TruckSim Real-Time with Options both support up to eight such connections for all systems except dSPACE 1006.

Login with ADP

Users can now login with Applied Intuition username and password.