

VehicleSim System Requirements & Software Compatibility

VehicleSim Products

- CarSim, TruckSim, BikeSim, and SuspensionSim
- Version 2020.1

Windows Operating Systems

- Windows 8 (32-bit and 64-bit)
- Windows 10 (32-bit and 64-bit)

Linux Operating Systems (CarSim and TruckSim only)

- Red Hat Enterprise Linux 7.2 (64-bit)
- CentOS 7 (64-bit)
- SUSE Linux Enterprise Server 12 (64-bit)
- openSUSE 42.3 Leap (64-bit)
- Ubuntu 14.04.3 LTS, 16.04.1, and 18.04.0 LTS (64-bit)

Minimum Hardware Specifications

- Hard Drive: 8 GB free disk space
- Memory: 4 GB RAM
- CPU: 2 GHz Intel® Core or equivalent
- Graphic processing unit (GPU): OpenGL 2.1 hardware support with 512 MB video memory (NVIDIA, AMD, or similar)

The software may run on a lower specification, but these numbers represent what we consider to be the lower bound of acceptable user experience.

Recommended Hardware Specifications (Required for DS)

- Hard Drive: 10 GB free disk space
- Memory: 4 GB RAM
- CPU: 2.2 GHz Intel® i5 or equivalent for laptop; 3.0 GHz for desktop
- GPU: OpenGL 3.0 hardware support, 1 GB video memory (NVIDIA, AMD, or similar)
- For a driving simulator, consider a high-end gaming computer

External Software Compatibility

Notes Both 32-bit and 64-bit versions are supported unless indicated otherwise.

For products and versions not listed, please contact Mechanical Simulation for more information. See also the summary for external tire and powertrain programs in Table 1.

- MATLAB: releases between 2013a and 2020a. Running VS Models with 64-bit versions of MATLAB requires a compatible C compiler. See <http://www.mathworks.com/support/compilers/R2014b/index.html> for more information.
- LabVIEW: tested with versions 2011 and 2012. No known issues for LabVIEW versions back to 8.5 (32-bit only)
- ASCET 5.2 (32-bit only)
- TNO MF-Tyre 6.1 (32-bit only), 6.1.2 and 6.2.0.2
- TNO MF-Swift 6.1 (32-bit only), 6.1.2 and 6.2.0.2 (optional license required from TNO/TASS)
- Siemens MF-Tyre/MF-Swift 2020.1 for CarSim (optional license required from Siemens)
- Siemens MF-Tyre/MF-Swift 2020.1 (dSPACE DS1006; dSPACE SCALEXIO release 2017A and up; and Concurrent Real-Time) for CarSim RT (optional license required from Siemens)
- Siemens MF-Tyre/MF-Swift 2020.1 for BikeSim (optional license required from Siemens)
- Siemens MF-Tyre/MF-Swift 2020.1 (dSPACE DS1006 release 2017A and up) for BikeSim RT (optional license required from Siemens)
- COSIN FTire: tested versions 2011-1 through 2013-1, 2013-4, 2014-4, 2015-4, and 2016-1 through 2018-2 (optional license required from COSIN)
- Michelin TameTire 5.1 (5.1.5545) and 6.1.2 for CarSim (optional license required from Michelin)
- AVL Cruise for CarSim starting with Version 2010.1 (optional licenses required from AVL and Mechanical Simulation). Tested versions 2010.1 through 2017.
- AVL Cruise for TruckSim starting with Version 2011.1 (optional licenses required from AVL and Mechanical Simulation). Tested versions 2011.1 through 2017.
- ADAS Research Platform Version 5.1.2015.1 for MSVC 18.00.

Table 1. Summary of system compatibility with external tire and powertrain programs

External software	Platform	C	T	B
TNO MF-Tyre/MF-Swift 6.2	Windows 32/64-bit	○	○	○
Siemens MF-Tyre/MF-Swift 2020.1	Windows 32/64	○		○
	dSPACE DS1006	○		○
	Concurrent RT 64-bit	○		
	dSPACE SCALEXIO	○		
COSIN FTire	Windows 32/64	○	○	○
Michelin TameTire	Windows 32/64	○		
AVL CRUISE	Windows 32/64	○	○	
General 3 rd -party tire model interface*** (VS/STI) ***VehicleSim only supports the interface. 3 rd -party tire models need to support each platform.	Windows 32/64	○	○	○
	dSPACE DS1006	○	○	○
	Concurrent RT 32/64	○	○	
	dSPACE SCALEXIO	○	○	
C: CarSim; T: TruckSim; B: BikeSim MF-Swift 6.2/2020.1, MF-Tyre/Swift on RTs, FTire and CRUISE require separate licenses.	○: tested and supported Blank: not supported			

Real-Time System Compatibility (Optional Licenses Required)

Note Mechanical Simulation has tested CarSim, TruckSim, and BikeSim on some versions of each supported RT system, but not all combinations. For more details about specific combinations, please contact us at tech@carsim.com or 734-668-2930.

Following are the minimum hardware requirements for each supported RT system.

dSPACE

We support dSPACE DS Board 6.6 and newer; we have tested releases 6.6, 7.4, 2016B, 2017A, 2017B, 2018A and 2019A.

	CarSim	TruckSim	BikeSim
DS1006	2.0 GHz	2.0 GHz	2.0 GHz
SCALEXIO (7.4 – 2019A) include DS6001	2.2 GHz	2.2 GHz	2.2 GHz

*DS1401 (MicroAutobox II) is supported for BikeSim only.

*For SCALEXIO, we currently support PC-based only.

*DS1005 and DS1103 builds are available in this release. However, Mechanical Simulation will not support installations using these hardware platforms. These platforms cannot maintain real-time and support all solver features.

*DS6001 requires dSPACE Release 2018B and above. There is an additional setting of the network. Please contact our support to get help.

RT-Lab

We support RT-Lab 10.4.x and newer based on documented support from Opal-RT; we have tested releases 10.4.x, 11.0.8 and 11.3 on QNX 6.3.2 and Linux. Support for RT-Lab 7.x – 8.x was discontinued from 2018 release. However, we cannot support breaking changes between versions which are produced by Opal-RT.

CarSim	TruckSim	BikeSim
2.0 GHz Dual Core	2.4 GHz Dual Core	2.0 GHz Dual Core

ETAS LabCar

We support LabCar 5 and newer; we have tested release 5.31, 5.40, 5.4.2, 5.4.4, and 5.4.8.

CarSim	TruckSim	BikeSim
2.0 GHz Dual Core	2.4 GHz Dual Core	2.0 GHz Dual Core

National Instruments

For NI ETS Real-Time system, we support and have tested LabVIEW 2015/2016/2017/2018 & VeriStand 2015/2016/2017/2018.

	CarSim	TruckSim	BikeSim
LabVIEW-RT	2.0 GHz Dual Core	2.4 GHz Dual Core	2.0 GHz Dual Core
VeriStand	2.0 GHz Dual Core	2.4 GHz Dual Core	2.0 GHz Dual Core

For NI Linux Real-Time system, we support LabVIEW 2015 and newer; we have tested LabVIEW 2015/2016/2017/2018 & VeriStand 2015/2016/2017/2018. On cRIO/cDAQ Real-Time Linux target, “Write all outputs” should not be checked. We have tested the NI Industrial Controller (IC-3173) with Linux RT system and LabVIEW 2016. We support LabVIEW 2019 with NI Linux Real-Time on PXIe controllers.

	BikeSim, CarSim and TruckSim
LabVIEW-RT	cRIO/cDAQ 1.9 GHz CPU and IC-3173 i7 CPU PXIe-8840 Quad-Core, PXIe-8861 and PXIe-8880
VeriStand	cRIO 1.9 GHz CPU

NI cRIO with 1.9 GHz CPU is either cRIO-9034 (4 slots) or cRIO-9039 (8 slots). NI cDAQ with 1.9 GHz CPU is either cDAQ-9136 (4 slots) or cDAQ-9137 (8 slots).

NI Industrial Controller, for example IC-3173 with i7 2.2 GHz CPU, runs Linux Real-Time system with NI-9144/9145 expand chassis, for IO, and EtherCAT Real-Time data synchronization.

Concurrent Redhawk with SIMulation Workbench (SimWB)

We support Concurrent Redhawk 32bit/64bit Real-Time system, Linux Real-Time system, with SIMulation Workbench (SimWB). For 32bit Linux from Redhawk 5.4 with SimWB 6.0 or newer. For 64bit Linux from Redhawk 6.3 with SimWB 7.2 or newer.

CarSim	TruckSim	BikeSim
2.4 GHz Dual Core	2.4 GHz Dual Core	2.0 GHz Dual Core

A&D

We support A&D hardware 5436, 5445/5446/5447, and the following software.

AD5436	01.04.00 and up
AD5445	02.07.00 and up
VirtualDSPConsole	03.03 and up

AVL ARTE.Lab

CarSim is supported and was tested on ARTE.Lab 3.1.