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TruckSim Database Options

Starting with version 2021.1, TruckSim example databases can be built at any time from a set of special CPAR archives that are contained in the installed `TruckSim_Prog` folder. The new databases are built using the **Database Builder** tool (Figure 1).

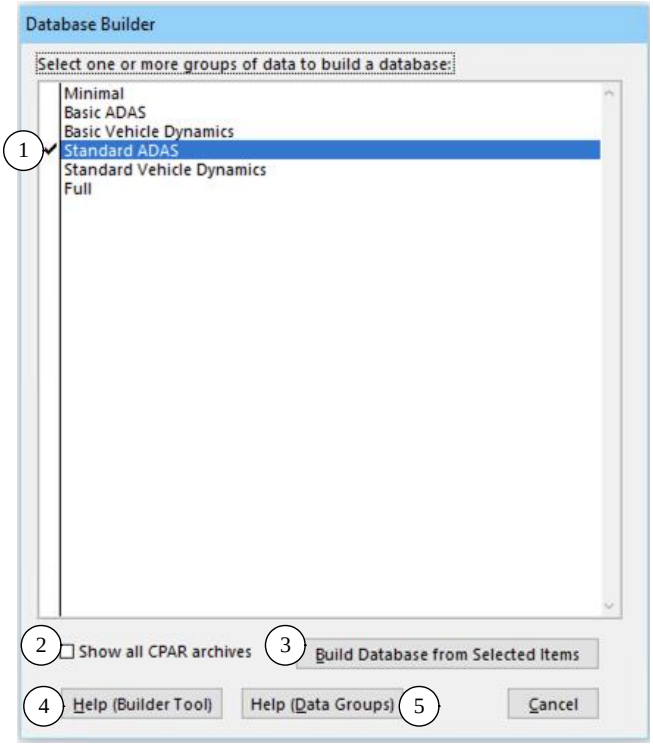

Figure 1. The database builder window showing only predefined database options.

With this tool, you select one or more groups of data to include in the database, and then click the **Build Database** button (3).

Documentation for this tool is viewed by clicking the first Help button (4). That document may also be viewed from the Browser Help menu: **Help > Tools > Database Builder**. Details about the data groups are presented in this document, which is obtained with the second Help button (5) or from the Help menu in the category **Release Notes**.

Table 1 provides a little more information about the six pre-defined options for TruckSim 2022.1.

Table 1. Pre-defined database options.

Database Option	Description	Target Users
Minimal	Examples showing new features, plus core examples such as the Quick Start Guide example, output options, payloads, validation examples, and Preferences	Experienced users with existing databases
Basic ADAS	Minimal + most ADAS examples	New users interested in basic ADAS options
Basic Vehicle Dynamics	Minimal + examples showing vehicle properties and tests	New users interested in basic vehicle dynamics options
Standard ADAS	Basic ADAS + driver model examples, multiple vehicles, roads, proving grounds, LabVIEW, Simulink, VS Visualizer data	Users interested in all examples relevant for ADAS applications
Standard Vehicle Dynamics	Basic Vehicle Dynamics + driver model examples, roads, Proving Grounds, LabVIEW, Simulink, K&C Sequence, PBS, vehicle configurations, VS Visualizer data	Users interested in all examples relevant for vehicle dynamics evaluations
Full	Standard ADAS + Standard Vehicle Dynamics + Advanced VS Commands, Custom Forces and Motions, Embedded Python, Extended Models, External Control. Like databases from older versions.	Users interested in all capabilities that do not require extra licenses or software (other than Sensors, Simulink, or LabVIEW)

Notice that the descriptions of the Database Options build on each other. All options include the examples from the Minimal option; the Standard ADAS option includes the Basic ADAS datasets, which in turn includes the Minimal datasets. The Full Database Option includes all the examples from the Standard ADAS and Standard Vehicle Dynamics, plus examples showing advanced features such as VS Commands, custom forces and variables, embedded Python, etc. that are used to extend the VS Math Models.

Table 2 shows CPAR archives used to build the databases listed in Table 1. The names of the CPAR files are the same as Run Control library categories, with spaces replaced with underscores, and '*' characters replaced with '-'. For example, the dataset in the category "* * Quick Start Guide Example" is archived in the file `-_-_Quick_Start_Guide_Example.cpar`.

The column **Database Option** indicates the first database option(s) where the CPAR datasets are included. For example, the Quick Start Guide example is in the Minimal Database Option, which is in turn included in the other five Database Options. On the other hand, the category "Advanced: Restore State, Linearize, Gravity" is only included in the Full Database Option.

Table 2. Categories and CPAR archives for TruckSim.

Category/CPAR	Description	Database Option
* * Quick Start Guide Example	Baseline double lane change	Minimal
* Articulated Bus	New examples in 2022.1	
* Automatic Clutch Control		
* Impaired Driver		
* New Vehicle Configurations		
* Parametric Sweep		
* Self-Steer Axle		
* Trailer Backing Controller		
* VS Command Examples		
Output Options	Options for output files	
Preferences	Preferences dataset	
Validation of Vehicle Data	Simple tests for validating vehicle data	
ACC Euro NCAP Tests	Euro ACC runs	Basic ADAS
ADAS and Active Safety	Miscellaneous ADAS examples	
AEB Euro NCAP Tests	Euro NCAP runs	
Brake Tests	Various vehicle tests involving braking, handling, stability, powertrain, steering, suspension, and ride	Basic Vehicle Dynamics
Handling and Stability Tests		
Powertrain: Electric		
Powertrain: Hybrid		
Powertrain: ICE		
Steering Tests		
Suspension and Ride Tests		
Steering System Options	Options for modeling steering systems	
Tire Models	Options for modeling tires	
Tire Tester	Simulations with tire tester	

Table 2. Categories and CPAR archives for TruckSim.

Category/CPAR	Description	Database Option
Animator STL	Custom CPAR archives for STL and STL Group libraries	Standard ADAS
Animator STL Groups		
Driver Model	Applications of built-in driver model	
LabVIEW Models	Examples that require LabVIEW	
Multiple Vehicles, Parallel Solvers	Multiple vehicles, parallel VS libraries	
Multiple Vehicles, Single Solver	Multiple vehicles, single VS library	
Proving Grounds, Scene Builder	Examples using Proving Grounds	
Roads and Intersections	Many roads and intersections	
Scene Import	Scenes imported from other tools	
Simulink Models	Examples that require Simulink	
Tractor-Trailer Platoon, Parallel Solvers	Multiple vehicles, parallel VS libraries	
Tractor-Trailer Platoon, Single Solver	Multiple vehicles, single VS library	
VS Visualizer Examples	Examples of special Visualizer features	
Animator STL	Custom CPAR archives for STL and STL Group libraries	Standard Vehicle Dynamics
Animator STL Groups		
Chassis Twist	Examples with the flexible body option	
Driver Model	Applications of built-in driver model	
LabVIEW Models	Examples that require LabVIEW	
Performance Based Stds (PBS)	PBS tests used in Australia and elsewhere	
Proving Grounds, Scene Builder	Examples using Proving Grounds	
Roads and Intersections	Many roads and intersections	
Scene Import	Scenes imported from other tools	
Simulink Models	Examples that require Simulink	
Suspended Cab with Tables	Example with suspended cab	
Tire Models (External)	Ftire, MF_Swift, and TameTire	
VS Visualizer Examples	Examples of special Visualizer features	
Vehicle Layout: Beyond GUI	Vehicles layouts set with VS Commands	
Vehicle Layout: Dog Trailers	Single trailers with dolly at front	
Vehicle Layout: Double Trailers	Double trailers, maybe with dollies	
Vehicle Layout: No Trailers	Single vehicle units, no trailers	
Vehicle Layout: Single Trailers	Single semitrailers	
Vehicle Layout: Triple Trailers	Triple trailers, maybe with dollies	

Table 2. Categories and CPAR archives for TruckSim.

Category/CPAR	Description	Database Option
Advanced: Restore State, Linearize, Gravity	Advanced examples: restoring state, linearizing, changing gravity	Full
Custom Forces, Motion Sensors	User-defined forces and motion sensors	
Embedded Python	Examples with embedded Python	
Extended Models	VS Commands, alternative tables	
External Control, Wrappers	FMI and alternative wrappers	

None of the six basic choices listed in Table 1 include specialty examples, such as RT HIL systems, software development kit (SDK) examples, and other examples using specialized features. To access these, and other specific categories of examples, check the box **Show all CPAR archives** (2) to see the entire collection. The names shown match files in the folder `TruckSim_Prog\Resources\CPAR_Archives`.

Table 3 shows categories that are not included in the Database Options listed in Table 1. These include specialty examples and examples that require external equipment or external licenses available only to a minority of users.

Table 3. Specialty CPAR archives for standalone use or that require special licenses.

Category	Description
ADAS: Camera Sensors	Use sensor memory shared by VS Visualizer
DS: Desktop	Driving simulator examples: stand-alone
DS: Simulink	Driving simulator examples with Simulink
External Parsfile	Examples showing use of External Parsfiles
RT: A&D	Examples for A&D RT system
RT: Concurrent	Examples for Concurrent RT system
RT: dSPACE	Examples for dSPACE RT systems
RT: ETAS	Examples for ETAS COSYM and LCO systems
RT: NI	Examples for NI ETS and LinuxRT systems
RT: RT-Lab	Examples for RT Lab system
RT: A&D	Examples for A&D RT system
SDK: Extended Models	Datasets for SDK examples that extend models or provide alternative wrappers
SDK: External Control	

Note The Database Builder is only intended to be used with the special CPARs installed in the `TruckSim_Prog\Resources\CPAR_Archives` directory. For other CPARs, use the **New Database from a CPAR Archive** button on the **Select Recent Database** window, or **File** > **New Database from a Consolidated Parsfile**.