

# Setting the Environment Variables



To better customize your software, you can set the following environment variables. You can set:

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- [Material Properties](#)
- [Penetration Avoidance](#)

## General Environment Variables

Environment Variable	Role	Values
DLM_CABLE_SOLVER_NAME	Sets the Realistic Cable Solver.	This should be set to the solver IMPLEMENTATION. Known values are: <ul style="list-style-type: none"> <li>• <b>DNBSplineSolverImpl</b> (non-realistic spline, the default)</li> <li>• <b>DNBFlexilutionCableSolverImpl</b> (ICIDO)</li> <li>• <b>DNBLinearSolverImpl</b> (Simple non-realistic linear solver)</li> </ul>
DLM_CLAMP_SOLVER_NAME	Similar to <b>DLM_CABLE_SOLVER_NAME</b> , but specifies the solver to use inside of clamps.	This solver is by default always spline (for performance reasons, since cables inside of clamps do not exhibit realistic behavior. The <a href="#">valid values</a> are the same as for <b>DLM_CABLE_SOLVER_NAME</b> .
EHS_ENABLE_PARENT_MOVE	Enables the use of the Child-Moves-Parent algorithm, both during build and after.	To enable the algorithm, set equal to 1 or <b>TRUE</b> .
EHS_ENABLE_PARENT_MOVE_INIT	Enables the use of the Child-Moves-Parent algorithm, only active during the initial simulation build, not after.	To enable the algorithm, set equal to 1 or <b>TRUE</b> .
EHS_ENABLE_LA_FEATURE_MOVETO	Used to enable the MoveTo command in the Multi-Cable Move toolbar	To enable the algorithm, set equal to 1 or <b>TRUE</b> .
EHS_ENABLE_MULTI_CABLE_FAIL_RESET	Changes the failed behavior when moving multiple cables simultaneously so that if any cable solve fails (e.g., one cable has reached its length, but not all cables moving) then all moving cables are set back to the last valid solved position. If this variable is not set, only the failed cable resets. All other moving cables will continue to move with the compass.	To enable the algorithm, set equal to 1 or <b>TRUE</b> .
EHS_MOVE_MULTI_CABLE_ENABLE_LA_FEATURES	Enables the Activity commands on the Multi-Cable Move toolbar	To enable the algorithm, set equal to 1 or <b>TRUE</b> .
DLM_CABLE_SOLVER_SMOOTH_LEVEL	Changes the visualization smoothness of the cylinders of a built EHS Cable.	<ul style="list-style-type: none"> <li>• <b>ROUGH</b> (Default value)</li> <li>• <b>FINE</b></li> <li>• <b>MEDIUM/MED</b></li> </ul>

## Material Properties

The material properties apply only if you have selected the [ICIDO solver](#). Setting any of the following alters the material properties for all cables.

Environment Variable	Role	Values
DLM_CABLE_SOLVER_RHO	Material density	Value is in kg/m3
DLM_CABLE_SOLVER_Y	Young's module	Value is in N/m2
DLM_CABLE_SOLVER_NU	Poisson's ratio	Dimensionless

## Penetration Avoidance

The penetration avoidance variables apply only if you have selected the [ICIDO solver](#).

Environment Variable	Role	Values
DLM_CABLE_PENETRATION_AVOIDANCE_RESOLUTION	<p>Physical Meaning: Number of voxels for largest dimension.</p> <p>During the construction, the bounding box of the model is detected and covered by cubical voxels. This parameter defines the number of voxels along the largest side of the bounding box, while the numbers of voxels along two other sides are computed automatically. It determines a balance between memory usage and resolution of collision detection: larger values of correspond to a larger memory usage and a finer voxel grid.</p>	<p>50 (Default value)</p> <p>10 - 100 (recommended values)</p>
DLM_CABLE_PENETRATION_AVOIDANCE_EDGE_ROUNDING_FACTOR	<p>Physical Meaning: Edge rounding window in voxels.</p> <p>Smoother is enabled to avoid divergences near sharp edges of the geometry. After smoothing, small penetrations in the edges can appear. Maximal allowed value smoother=5.</p>	<p>1 (Default value)</p> <p>1 - 5 (allowed values)</p> <p>When the smoother=0, the smoothing algorithm is disabled.</p>
DLM_CABLE_PENETRATION_AVOIDANCE_RELATIVE_OFFSET	<p>Physical Meaning: Bounding box enlargement factor.</p> <p>Since collision detection is performed only inside the bounding box and real cables have finite thickness, the bounding box should be enlarged at least for the value of this thickness, to allow stable collision detection near the sides of bounding box.</p> <p>If this parameter is too</p>	<p>0.3 (Default value)</p> <p>Setting the value of this parameter to zero disables enlargement of the bounding box.</p>

small, the surface of tube/cable can enter into the contact with the rigid object, but the middle line of the tube/cable will be outside of bounding box.