Perform3D v10.1.0 Release Notes

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Notice Date: 05-February-2025

This document lists changes made to Perform3D since v10.0.0, released 11-December-2024. Items marked with an asterisk (*) in the first column are more significant.

API
Enhancements Implemented

*	Ticket	Description
	11163	Two functions are added to the Perform3D API: cStructureModel.GetProgramInfo retrieves the program version and level and cStructureModel.GetVersion retrieves the API version number.

Analysis
Incidents Resolved

*	Ticket	Description
*	11121	An incident was resolved where the analysis process would unexpectedly terminate for certain models with a large number of nodes (e.g., more than 30,000). When this occurred, the GUI would continue to wait indefinitely for the analysis to finish unless the user manually stopped it.

API
Incidents Resolved

*	Ticket	Description
	11156	An incident was resolved where API function cGroups.GetAllGroupElements returned an error code and did not get the element numbers for a specified element group.
	11158	An incident was resolved where the API function cNodes.AddNode would fail to add the 200th node in the model and subsequent API calls to modify the 200th node, including adding mass through cMasses.AddMasstoNode, would fail.
	11202	An incident was resolved where the parameter weightPerUnitLength in the API function CompoundComponents.AddBeamColumnCompoundComponent did not change the weight of the component.

Graphics
Incidents Resolved

*	Ticket	Description
	11130	An incident was resolved where the extruded display of 2-node elements (enabled by going to Options menu>Display Options and selecting "Extrude 2-Node Element) may be incorrect for elements where the units used in the component properties were different than the model units. This was a display issue only.

Installation and Licensing
Incidents Resolved

*	Ticket	Description
	11088	An incident was resolved to display information about network license.

Structural Model
Incidents Resolved

*	Ticket	Description
*	11099	An incident was resolved where, when a new nodal load pattern is added (Load Patterns task, Build phase) in Perform3D v10 so that the model has more than two nodal load patterns in total, an error message would occur when trying to save the model and the model could not be saved until the newly added load pattern is deleted.

User Interface
Incidents Resolved

*	Ticket	Description
	11120	An incident was resolved where an Abnormal Condition error occurred when going to the Database Tables (Tables menu>Show Tables) in a structure that has no nodes.

Perform3D v10.0.0 Release Notes

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Notice Date: 10-December-2024

This document lists changes made to Perform3D since v9.0.0, released 28-April-2023. Items marked with an asterisk (*) in the first column are more significant.

Analysis
Enhancements Implemented

*	Ticket	Description
*	1819	The speed of the analysis engine has been increased by parallelizing certain internal operations (multithreading). The effect of this change on the run-time of an individual analysis series will be machine- and problem-dependent. Note that multithreading is primarily intended for use with medium to large sized models with well-conditioned stiffness and enabling it can change the order of operations and may produce results that vary slightly from run to run. This is normally insignificant for stable models, but may be more noticeable for unstable or ill-conditioned models. This is not an error, but an indication of the expected accuracy for such models.

API
Enhancements Implemented

*	Ticket	Description
*	6679	An enhancement has been implemented to provide an Application Programming Interface (API) for Perform3D. The initial release of the Perform3D API encompasses functionality for constructing geometry, defining properties and components, and their assignments; and recovering results. The API is accessible from a wide range of programming languages that support .NET/.NET Framework and/or COM. Notably, Visual Basic, C#, Visual Basic for Applications (VBA), C++, MATLAB, Python, and IronPython are officially supported programming languages. The documentation for the Perform3D API is provided in compiled HTML help (chm) and XML formats. Each API function is documented, and several comprehensive examples demonstrate the usage of these functions from the supported programming languages.

Database Tables
Enhancements Implemented

*	Ticket	Description
*	6678	Enhancement to allow interactive editing of nodes, elements and component properties. Following tables are editable Control Data (1 Table) Node Data (1 Table) Component Property Definition Material Component Properties (9 Tables) Elastic Component Properties (13 Tables) Inelastic Component Properties (20 Tables) Cross section Component Properties (17 Tables) Strength Section Component Properties (6 Tables) Compound Component Properties (5 Tables) Element Data Element Groups (1 Table) Simple Bar Elements (1 Table) Frame Element Data (1 Table) Panel Zone Element Data (1 Table) Shear Wall Element Data (1 Table) General Wall Element Data (1 Table) Shell or Slab Element Data (1 Table) Infill Panel Element Data (1 Table) Seismic Isolator Element Data (1 Table) Buckling Restrained Brace Element Data (1 Table) Fluid Damper Element Data (1 Table) Support Spring Element Data (1 Table) Deformation Gage Element Data (3 Tables)

Documentation
Enhancements Implemented

*	Ticket	Description
	9639	The Perform3D User Guide documentation has been updated with a new chapter describing the Database Tables feature.

Installation and Licensing
Enhancements Implemented

*	Ticket	Description
	8928	The version number has been changed to v10.0.0 for a new major release. Models from versions prior to v7 will need to be opened and saved in v7 before they can be opened in v10.
*	10343	An enhancement has been implemented to provide a new licensing option, "Cloud Sign-in" licensing, that utilizes user credentials to access licenses instead of activation keys. This licensing option can be selected when installing the software, and can be changed later by running the CSiLicenseAssistant from the Windows Start menu or found in the CSILicensing subfolder of the Perform3D installation folder. With this licensing option, user credentials will be requested when Perform3D is first started, unless they have already been supplied in an earlier session of Perform3D or another CSI software product that uses Cloud Sign-in licensing. User credentials can be obtained from the customer's IT or other department that manages software access. Cloud Sign-in licensing requires an active internet connection while running the software. A commuter-license option is available which allows checking out a license for a time period up to 30 days, subject to the user's company policy, for use of the software without an internet connection. Until the commuter license is checked back in or the time period expires, no other user will have access to that license. Customers can use the CSI Customer Center to manage which users have access to various CSI products and product levels through user groups. The CSI Customer Center also provides tools to view license usage. Access to these features in the CSI Customer Center is subject to permissions set by the customer's department that manages software access.

Results Display and Output
Enhancements Implemented

*	Ticket	Description
*	10699	A Live Reporting feature has been added which can be used to generate one or more report documents that compiles tabulated response outputs along with images. Response data for the report is taken from the Database Tables while images can be taken from plots or displays in the model. The report can be viewed directly in the program, printed, or saved as a PDF or Microsoft Word file.

Structural Model
Enhancements Implemented

*	Ticket	Description
*	11042	The program has been enhanced to save a backup of a model when the model is opened. Only one backup is saved and it will be overwritten each time the model is opened. The backup is saved in the model folder as the file PF3DBACKUP and contains the model information excluding analysis results and reports. To restore the backup, change the extension of the PF3DBACKUP file to .zip and extract the model files.

User Interface
Enhancements Implemented

*	Ticket	Description
	11020	An enhancement was made to allow color printing, by checking 'Use Color Option' in 'Set Display Options' Dialog box. Currently, Node, Element, Deflection and Mode Shape diagrams are included for color printing.
	11024	An enhancement was made to the Analysis Series form (Run Analyses task, Analysis phase) to add a button "Delete for all series" when "Delete an existing series" type of operation is selected. This button can be used when the deletion option "Delete analysis results but keep Analysis Series settings" is selected as a quick way to delete results for all analysis series in the model.

*	Ticket	Description
	11050	The parameter labels in the right-click menu for Elements has been improved to specify the I and J- nodes for 2-node elements and I, J, K, and L-nodes for 4-node elements. Previously, the nodes were labeled as 1, 2, 3, and 4 in the right-click menu.

Analysis
Incidents Resolved

*	Ticket	Description
	10863	A change was made to rotation and curvature type P-M2-M3 hinge components to prevent invalid results (NaN) when the hinge transitioned through the yield (Y) and ultimate (U) points on the backbone curve with an extremely small step size. This change does not affect the behavior of the component.

Database Tables
Incidents Resolved

*	Ticket	Description
	11038	An incident was resolved in the Database Tables (Tables>Show Tables in the menu) where modal results were shown for all analysis series whenever the modal analysis is selected for output for one or more analysis series. This behavior has been corrected so modal results are only shown for analysis series where its modal analysis is selected for output.
	11049	The "Element Data" and "Deformation Gage Data" database tables (Tables menu>Show Tables) associated with 4-node elements and gages have been corrected so that the K- and L-node labels are consistent with the Perform3D Components and Elements documentation for the respective element types.

External Import and Export
Incidents Resolved

*	Ticket	Description
	9540	An incident was resolved to properly handle duplicate property names while importing PF3CMP file.

Miscellaneous
Incidents Resolved

*	Ticket	Description
	9731	An incident was resolved where opening certain V7 files was failing due to the presence of double-byte characters in model name.

Results Display and Output
Incidents Resolved

*	Ticket	Description
	10575	An incident was resolved where Support Spring elements were not being displayed when viewing the deformed shape and/or usage ratio colors on the model in the Modal Analysis Results, Deflected Shapes, and Combinations and Envelopes tasks. This issue affected Perform3D v8 and v9 only.

User Interface
Incidents Resolved

*	Ticket	Description
	11035	An incident was resolved where a specific sequence of editing beam or column standard steel section components before and after running analyses and immediately deleting the analysis results could cause the program to crash.
	11036	An incident was resolved where a Linear Elastic Infill Panel component with the Strength Capacity option enabled could not be saved because the Shear Strength parameters could not be specified in the form.