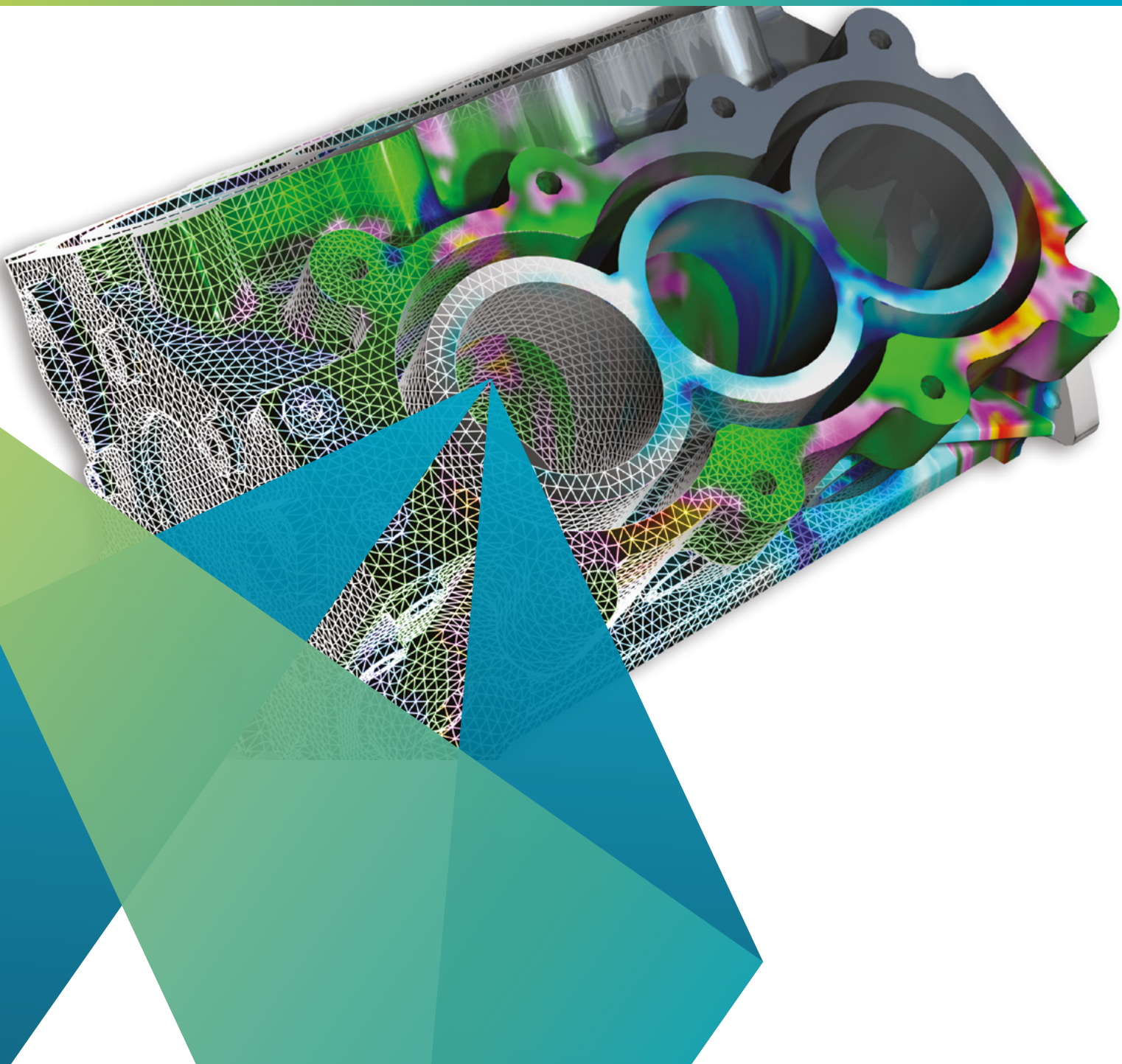


# Patran® 2019 Feature Pack 1



## Welcome to Patran 2019 Feature Pack 1!

MSC Software is pleased to announce the latest release of Patran 2019 Feature Pack 1 designed to provide enhancements to improve user productivity. Major areas of focus in this release include the following:

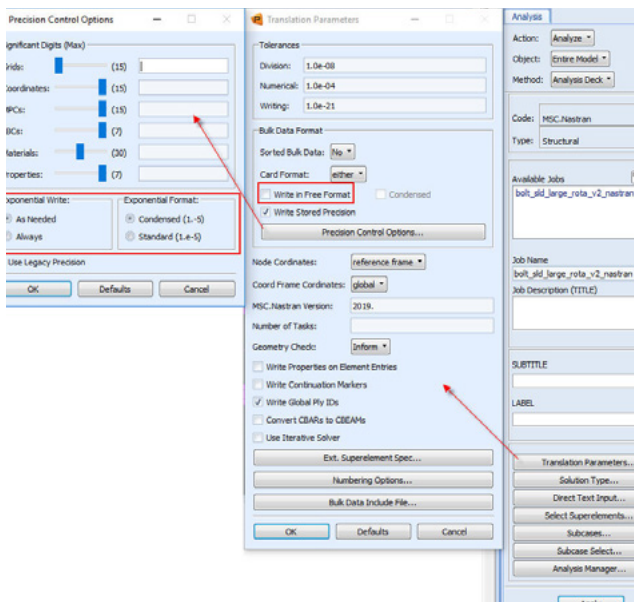
### Group Expand

Group expand gives the users the ability to create a group by expansion (or expand and existing group) based on associativity of the supplied entities has been implemented under the Group application. The following features are available:

1. Group/Create/Expand/Single – this feature allows you to select a set of entities graphically and create a single group by taking the selected entities and expanding them based on the associativity with adjacent or connected entities until no more associativity is detected.
2. Group/Create/Expand/Multiple - this feature allows you to select a set of entities graphically and creates multiple groups by extracting a single entity from the list and expanding it until no more associativity is found, thus creating the first group.
3. Group/Expand – this feature takes an existing group and expands the list of entities in the group based on associativity until no more associativity is found. This feature is the same as Group/Create/Expand/Single where the list of entities comes from the Group itself and not a list of supplied entities.

### Nastran Free and Exponential Format

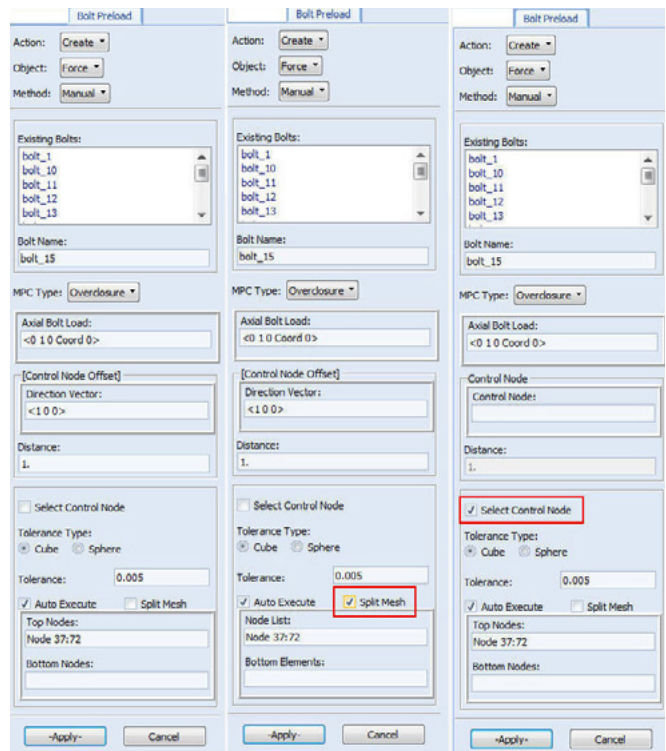
In addition to the precision control from the previous section, the Translation Parameters form now also allows for specification of free format for the Nastran input file. This means that fields in the input deck can be separated



by commas. The entire, fixed, large and/or small fields can be separated by commas or the spacing can be condensed so that there are no blank spaces between fields.

### Bolt Modeling Enhancements

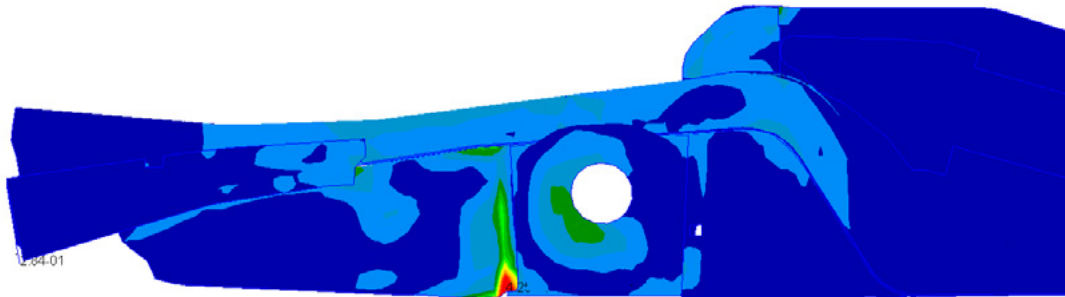
A manual method for creating bolt pre-load definition has been implemented. Previously bolt definitions could be automatically created using one of a number of methods, including a geometric method that automatically determines the bolt axis and splits the mesh into a top and bottom bolt portions that are connected via an Overclosure MPC to which the pre-load is applied. A vectorial method similar to the Geometric method is also available where the bolt axial direction is specified by the user. Also, elemental (1D, 2D, and 3D) methods are available where the users specify the actual location of the bolt mesh split.



### Performance Improvement

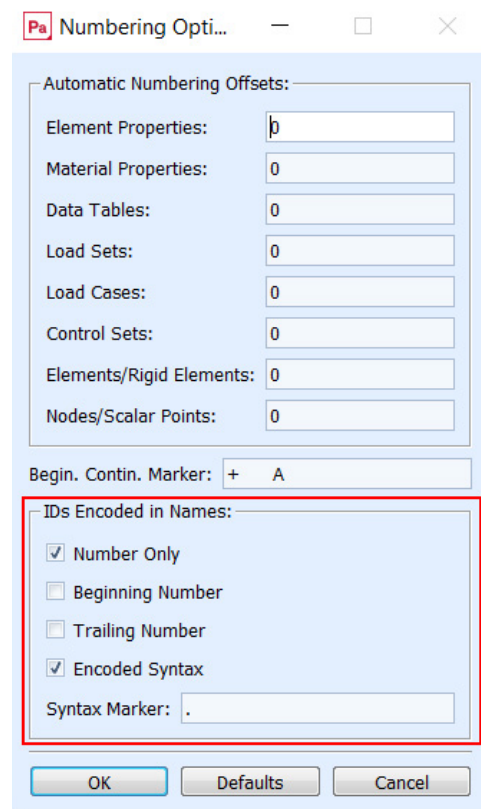
#### In Patran 2019 Feature Pack 1:

- The Nastran bdf import performance has been improved by up to 50% on Windows operating system.
- Decks having thermal cards (convection, radiation etc) can now easily be imported. These either could not be imported earlier or were taking much time in the import.
- Automatic creation/display and export of contact body and body pair to MSC Nastran input files has been significantly improved.



## Encoded IDs support for Contact Bodies and Contact Pairs

The Numbering Options feature 'IDs Encoded in Names' is now also supported for contact bodies and contact pairs. With this, you can have control over the IDs in the MSC Nastran input file to debug Nastran job similar to other LBCs.





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Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

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