

NX Nastran 11.0.1 Release Guide

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Availability (TAUCS)

As of version 2.1, we distribute the code in 4 formats: zip and tarred-gzipped (tgz), with or without binaries for external libraries. The bundled external libraries should allow you to build the test programs on Linux, Windows, and MacOS X without installing additional software. We recommend that you download the full distributions, and then perhaps replace the bundled libraries by higher performance ones (e.g., with a BLAS library that is specifically optimized for your machine). If you want to conserve bandwidth and you want to install the required libraries yourself, download the lean distributions. The zip and tgz files are identical, except that on Linux, Unix, and MacOS, unpacking the tgz file ensures that the configure script is marked as executable (unpack with `tar xzvpf`), otherwise you will have to change its permissions manually.

Chapter 1: Problem Report (PR) fixes

Problem Report (PR) fixes

The NX Nastran 11.0.1 maintenance release includes the following fixes.

PR#	Problem Reported	Problem Description
7874524	11.0	When kinetic energy output was requested with the EKE case control command and the PHASE describer was defined to request polar format of complex results, too many values were included in the output.
7793274	9.1	For a specific model running SOL 601,106 which included a nonlinear material and a rotational force defined with the RFORCE entry, the rotational force was not applied by the software.
7797116	9.1	<p>Two problems were revealed with a model which included 3D bolt preloads and a temperature load in SOL101.</p> <ol style="list-style-type: none"> 1. If using TEMP entries to define grid point temperatures instead of the TEMPD entry, regardless if all of the grids have a temperature defined or not, the software would fail to apply the grid temperatures when multiple BOLTs were present. 2. The user warning message 4012 which occurred with this model incorrectly referred to an internally generated grid id. The warning message now correctly refers to an element id. <p>To workaround the issue in releases before NX Nastran 11.0.1, you can use the TEMPD entry to apply grid point temperatures.</p>
7786540	10.2	A specific customer model running a SOL 105 linear buckling solution failed to run for one of the load cases.
7791106	9.1	For a model running SOL 101 which included bolt preloads and multiple constraint sets combined with an SPCADD entry, the results changed if the constraint sets were defined with SPC1 entries or with SPC entries. Research revealed that the model with the SPC1 entries produced incorrect results. The workaround in releases before NX Nastran 11.0.1 is to use SPC entries instead of the SPC1 entries when combining multiple constraint sets with an SPCADD entry in a SOL 101 run with bolt preloads.

7781584	10.0.2	<p>In a SOL 111 random analysis, ply stress output was output at all plies for some elements, but only in the first ply for other elements. The problem was that the software failed to account for the YES/NO output option on the PCOMP bulk data entry. There was also a memory management issue specific to composites which was found and fixed with this PR.</p>
8304163	11.0	<p>A model running SOL 401 with incremental displacements defined with SPCD entries experienced slow convergence with KUPDATE=0 (Auto stiffness update), then completed two iterations with KUPDATE=1 (initial stiffness approach).</p> <p>For problems involving application of incremental displacement such as an SPCD, the first iteration of a step is carried out as a linear iteration.</p> <p>At the end of this iteration, the NX Nastran 11 algorithm for KUPDATE=0 inferred that a stiffness update wasn't needed since the residual was deemed as small. In the second iteration, the internal forces and the residual were computed as a geometry nonlinear problem, but the original structural stiffness was used. It was observed that for TETRA elements in particular, in absence of a stiffness update after the first iteration and a relative large applied SPCD, there was considerable instability in the predicted displacement increment for iteration 2 which lead to a divergent solution needing a stiffness update.</p> <p>Now when the new parameter setting TSTEPK=FIRST is defined on the NLCNTL entry in NX Nastran 11.0.1, a stiffness update occurs after the first iteration of any step where a displacement increment is applied.</p> <p>Running the original model in 11.0.1 with TSTEPK=FIRST defined on the NLCNTL entry, the problem solves in three iterations with a single stiffness update without needing any bisections.</p>
7782458	11.0	<p>A pure acoustic model running SOL 108 consisting of a million fluid grids, an AML definition, and an infinite plane definition took a relatively long time (two hours) to complete the GPAC module processing.</p> <p>The problem was that the GPAC module did not allocate a sufficient amount of memory for a pure fluid model. The software now better allocates memory for this type of model. The GPAC module processing for this model is now around 10 minutes with NX Nastran 11.0.1.</p>
7771287	10.2	<p>In general, inertia relief was not supported in an external superelement creation run before this release. Beginning in NX Nastran 11.0.1, inertia relief is supported in an external superelement creation run.</p>

7731730	10.2	<p>The strength ratio results from a 3D solid composite (PCOMPS) model were stored incorrectly in the datablock OESRIP/OESRIS. The problem was revealed on an ILP platform. The symptom of the problem was that the strength ratio results were extremely large in a post processor.</p> <p>The issue has been fixed by correcting the attributes for the OESRIP/OESRIS datablocks. These datablocks are now consistent with the shell composite (PCOMP) strength ratio datablock OESRT.</p>
7775648	11.0	<p>The CBARAO entry is used to request CBAR element force at intermediate locations along the element axis. Some of the CBARAO output requests did not occur. The reported issue occurred with SOL 101 when the ID of the first element on a CBARAO entry was greater than the ID of the first element on a PLOAD1 entry. A bug was found and fixed in the SDRX module as a result.</p>
7731819	11.0	<p>In SOL 401, when multiple bolts were preloaded in a sequence, the output requested with the BOLTRESULTS command would show an incorrect strain value output for all but the last bolt. In addition, when bolts were loaded in a previous subcase and the BOLTRESULTS output was requested in the current subcase, the strain value for the bolts preloaded in the previous subcases were incorrect in the BOLTRESULTS output. Note that all of the bolts were being preloaded correctly and the issue was only with the value of the strain output in the f06 and op2 files.</p> <p>For example, a bolt loaded at 1000N would be loaded correctly with 1000N even though the strain value column showed the incorrect value. A query of the axial force values in the BOLTRESULTS output would demonstrate the correct bolt force. The strain at which the bolt was being held in subsequent subcases was also correct despite the incorrect strain reported in the BOLTRESULTS output. As a result, models with bolts did produce correct behaviour throughout the entire solution and produced expected results, except for the strain column in the BOLTRESULTS output.</p>
N/A	11.0	<p>In a SOL 601,159 heat transfer solution, plane stress or plane strain element results were listed incorrectly as "CQUADX4" in the .f06 file. The problem was only in the results header. The results data was correct.</p>

N/A	11.0	<p>The RFORCE1 entry applies a rotational load to a portion of a model. The RFORCE1 entry references a GROUP entry which lists the grid points where the load is applied.</p> <p>In SOL 401, if the RFORCE1 entry was selected with the LOAD case control command (time-unassigned loading), and the LVAR parameter on the NLCNTL bulk entry was set to "RAMP" (default), and the GRID entries referenced by the RFORCE1 entry were not ordered sequentially, the incremental loading in the subcase as a result of the RFORCE1 entry were incorrect. Although, the final subcase loading was correct.</p> <p>To avoid the issue in the previous release (NX Nastran 11), you could either reorder your GRID entries to be sequential, or you could define the LVAR parameter on the NLCNTL bulk entry to "STEP", or you could select your RFORCE1 entry with the DLOAD case control command (time-assigned loading).</p> <p>For example, if an RFORCE1 entry references a GROUP which lists the grid points 5, 7 and 10:</p> <pre> ... GROUP, 2, + +, GRID, 5, 7, 10 ... GRID, 10, .. GRID, 7, .. GRID, 5, </pre> <p>You could avoid this issue by reordering the GRID entries as follows:</p> <pre> ... GRID, 5, .. GRID, 7, .. GRID, 10, .. </pre>
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