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The title "Simcenter Nastran 2019.2 Release Notes" is centered in a teal rectangular box on the right side of the page. The text is white, sans-serif, and arranged in three lines.

Simcenter Nastran
2019.2 Release
Notes



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1. Simcenter Nastran 2019.2 release notes

This document includes software caveats, the fixed Problem Reports (PRs), the supported operating systems, and the references below to the installation instructions.

Software installation

The installation instructions for the software are in *software_install.pdf*, which is included at the top level of the installation media.

Documentation installation

The Simcenter Nastran documentation is available on [Doc Center](#), so you do not need to install it.

If you decide to install the Simcenter Nastran documentation, you will need to install the SPLMSOLRSERVER and SPLMDOCSEVER web servers included with the documentation installation. These are small, self-contained web servers that run as the services 'Siemens PLM Documentation Server' and 'Siemens PLM Solr Server'.

The installation instructions for the documentation are in *documentation_install.pdf*, which is included at the top level of the installation media.

License information

You must use the Siemens PLM License Server. The installation instructions for the license server are in *SPLM_Licensing_Install.pdf*, which is included at the top level of the installation media. The licensing user's guide *SPLMLicensing_user_guide.pdf* is also included. In addition, you will need to contact GTAC and obtain a new license file or download it from the [GTAC support site](#).

For GTAC in the United States or Canada, call 800-955-0000 or 714-952-5444.

If you are outside the United States or Canada, contact your local support office.

To install the license server on Windows, you can either run *Launch.exe*, or run the setup program contained in the FLEXIm directory.

To install the license server on Linux, you run the setup program *SPLMLicenseServer_XXXXX_linux_setup.bin*, which is contained at the top level of the installation media.

Distribution media contents

The installation contains these commonly used Windows files.

File Set	Description
Launch.exe	Launches installation utility
\Nastran	Directory containing Nastran file sets and InstallShield Wizard
SPLM_Licensing_Install.pdf	License server installation instructions
FLEXlm \SPLMLicenseServer_XXXXX_win64_setup.exe	License Server Install
documentation_install.pdf	Documentation installation instructions

The installation contains these commonly used Linux files:

File Set	Description
nastransetup	Installation utility
scnas/	Directory containing NX Nastran file sets
tools/	Directory containing installation utilities
SPLM_Licensing_Install.pdf	License server installation instructions
SPLMLicenseServer_XXXXX_linux_setup.bin	License Server Install
documentation_install.pdf	Documentation installation instructions

2. Simcenter Nastran 2019.2 caveats

Simcenter Nastran - General issues

- (PR 9457614) Possible error or incorrect results when Intel MKL Pardiso solver is used in SOL 108 frequency dependent analyses, via system (555)=3.
- (PR 9455727) Use of DMP and Intel MKL Pardiso may result in silent crash. If Pardiso is used in SOL 108 and SOL 111 analyses along with DMP keyword, it results a crash. The workaround is to use the sparse solver (which is the default option) in the FRRD module.
- (PR 9429843) Use of RIGID = LAGRANGE with the VKI or CASI Element Iterative solvers for thermal expansion analysis in SOL 101 may produce wrong result if the model also contains MPC. This is a bug from Nastran 6.0. Workaround is to use sparse solver if the user is interested in considering thermal expansion of rigid elements in the model.
- (PR 9499927) In SOL 108 analyses, AUTOSPRT is on by default. This can mask modeling issues and lengthen run-times. The workaround is to use PARAM, AUTOSPRT, NO.
- (PR 9477713) Use of DMP for SRSS analysis can give incorrect results. The workaround is to use SMP instead of DMP in order to speed computations.
- (PR 9455516) In SOL 110 synchronous rotor dynamics analyses, complex eigenvalue results output is incorrect. Eigenvalue entries in the Campbell-diagram, however, are correct.

Simcenter Nastran - Vibroacoustic analysis issues

- (PR 9296546) Strongly coupled vibroacoustic analysis in SOL 108 using HFEM with ACPRESS and MATPOR entries produces incorrect results. Note that analysis with ACPRESS entry or MATPOR entry alone produce correct results.
- (PR 9288305) Direct Complex Eigenvalues (SOL 107) analysis with acoustic absorber may hang in eigensolver. A workaround is to use the ISRR method instead of default CLAN.
- (PR 9497559) Incorrect answers with SDAMPING (structure) in SOL 108 strong-coupling and adaptive order (FEMAO). The workaround is use Sol 108 weak coupling or Sol 108 HFEM (both strong and weak)
- (PR 9464248) SOL111 ATV response using RDMODES gives incorrect microphone pressure results depending on DISPLACEMENT output request. A workaround is to add PARAM, RDSPARSE, NO in bulk data.

Simcenter Nastran - Design Optimization issues

- (PR 8418969) In SOL 200 topology optimization, convergence issues might occur when defining the objective with DESOBJ (MIN, SCFUNC=MAX, ENFUNC=MAX) or DESOBJ (MAX, SCFUNC=MIN,

ENFUNC=MIN) and there are more than 100 actual constraints in the job (such that SDO is selected as optimizer). A workaround consists in forcing the use of SDO optimizer by setting system cell 425 to 1.

- (PR 8418968) In SOL 200, when defining the objective with DESOBJ (MIN, SCFUNC=MAX, ENFUNC=MAX) or DESOBJ (MAX, SCFUNC=MIN, ENFUNC=MIN). Incorrect objective is written into csv file, instead of actual objective. Actual objective is correctly written into f06 file.

Simcenter Nastran - Solution 402

- (PRs 8418069 + 9475942) In SOL402, when using a hyper-elastic material MATHE (all types) with a small value of the compressibility ratio K (corresponding to a Poisson ratio smaller than 0.499), incorrect results and/or bad performance could be obtained, especially with very large deformation. This was due to an error in the treatment of the incompressibility. There is no workaround except increasing the compressibility ratio to a large value.
- (PR 8417583) In SOL402, when using a hyper-elastic material (MATHE or MATHP) with PARAM LGSTRN turned on, the Von Mises stresses available as output is computed using the PK2 stress measure, while the tensor is computed using the Cauchy stress measure. As a workaround, the Von Mises stress can be recomputed using the tensor values.
- (PR 8417153) In SOL402, when performing a modal analysis without any pre-stress with a temperature-dependent material, the material properties were evaluated at 0 degree instead of TEMP(INIT). As a workaround, the user can add a first static subcase before the modal subcase.
- (PR 9451103) When performing a restart in SOL402, the output results of the subcases of the initial run that were removed in the restart run were still visible in the restart run. For example, if the initial run contained 2 subcases (1 and 2) and the restart run added a third one to be executed (EXEFROM=3) but restarted from the first one (RSTFROM=1), results from subcase 2 were incorrectly copied to the final post-processing file of the restart run but should have been deleted.
- (PR 9431951) In SOL402, if the model contained a large amount of boundary conditions or subcases, the translation of those load could sometimes be very time consuming, without leading to incorrect results. This will be fixed in a future release.
- (PR 9487561) In SOL402, when a DTEMP case control card is defined and the analysis type of the first subcase is different from STATICS, DYNAMICS and PRELOAD, the temperatures are not applied. As a workaround, the user can change the order of the subcases to prevent the described occurrence. Another possibility is to add a dummy STATICS subcase with no loads and a constant temperature as first subcase.
- (PR 9475934) In SOL402, when a DTEMP bulk card refers to both TEMP and TEMPD bulk cards, the temperatures which are applied to the nodes not defined in the TEMP cards are wrong. As a workaround, the user can replace the TEMPD cards by equivalent TEMP cards.
- (PR 9474437) In SOL402, when a MODAL subcase is followed by a STATICS subcase in which the temperatures are stepped (NLCNTL2 TVAR=STEP) and not ramped, the material parameters for the modal analysis are evaluated at the TEMP(LOAD) temperature rather than the TEMP(INIT). This only impacts the eigenvalues but not the eigenvectors.

- (PR 9473563) In SOL 402, when a model contains PLOAD cards, the pressure loads are incorrectly evaluated, which causing wrong results. In the next release, PLOAD will not be allowed anymore and should be replaced by PLOAD4.
- (PR 9472658) In SOL 402, when both case control cards TEMP(INIT) and TEMP(LOAD) are defined and refer to different temperature IDs, for example:

```
TEMP (INIT) = n1
TEMP (LOAD) = n2
```

and the first set identification number (n1) refers to TEMP bulk cards, while the second set identification number (n2) refers to both TEMP and TEMPD bulk cards, the temperatures defined by the TEMPD cards are not applied on the involved nodes. As a workaround, the user can replace the TEMPD cards by equivalent TEMP cards.

- (PR 8416427) In SOL 402, when a model contains more than one subcase, including more than one preload subcases but no statics or dynamics subcases, the mechanical or thermal loads might not be evaluated correctly, leading to wrong results. For instance, in case of prescribed temperatures, a wrong initial temperature is applied. As a workaround, the user can add at least one statics or dynamics subcase.
- (PR 9464705) In SOL402, when performing a restart solution on a model containing kinematic joints, the restart solution might not converge. Rerunning the whole solution from the beginning can solve the issue.
- (PR 9461039) In SOL402, when a load card is referenced by both a LOAD card and a DLOAD case control card in the same subcase, the input associated to the time-unassigned load (LOAD) is ignored, which causes wrong results. As a workaround, the user can duplicate the loading cards with a different identification number, the latter being referenced either by the LOAD card or the DLOAD card or use only one of the 2 methods (LOAD or DLOAD).
- (PR 9448606) In SOL402, when DTEMPEX and TEMPD bulk cards have the same identification number, the computation fails due to an out-of-bounds array access. As a workaround, the user can use DTEMP cards instead of DTEMPEX cards.
- (PR 8410791) In SOL402, when enforced displacements along the three directions are applied on the master node of a RBE2 element attached to a CPLSTN4 element, two displacements are not taken into account.
- (PR 9472097) In a SOL402 with contact BCTSET, if the user wants to disable the friction regularization by writing BCTPAR2 STFR 0., the solver will use a zero value for the regularization stiffness instead of ignoring this parameter, causing convergence problems. As a workaround, the user can simply enter a large value (e.g., 100 times the Young modulus).

Simcenter Nastran - Solution 401

- (PR9492104) For 4 noded element faces in a region referenced by PLOADFP, only 3 out of the 4 nodes show the fluid penetration pressure value. The 4th node shows a 0.0 which is incorrect. The pressure is applied correctly, and this is just an output issue. The fluid penetration can still be observed based on the nodal values for the 3 nodes.
- Composite elements referenced using PLOADFP will not produce correct results.

3. Simcenter Nastran 2019.2 Problem Report (PR) fixes

The following list summarizes the problems that are fixed in Simcenter Nastran 2019.2 .

PR#	Problem Description
9430338	Running DMP on SOL 108 with FRF sets does not produce results at some frequencies.
9366533	Incorrect data recovery for upstream Super Elements if sparse data recovery is used.
9378423	SOL 112 with RESVEC(NODYNRSP) gets wrong answers in SCN2019.1 when degenerate eigenvalues are present.
9361350	RVEL on non-existing elements is ignored
9358943	Using SUPORT and STATSUB case control together produces SFM 6143 (UMRGE1)
9304651	Wrong MPC forces with FRF components.
9371230	Corrected a crash due to inappropriate handling of CBUSH element in SOL 200. It occurred in case a CBUSH element supported both temperature loads on its nodes and an element response (e.g. FORCE).
9371235	Clarified error message when temperatures are missing from elements.
9367708	Added a fatal error when an invalid single quote character ' is in the input filename
9344047	Reformatted log file timing in Linux to be consistent with Windows
9412752	SOL 401 fails to trap the case when there is no support for kinematic hardening.
9336175	There is an issue with damping during bolt iterations which is activated by parameter BOLTAMP on NXSTRAT card in NX Nastran 12.2 .
9286203	SOL 601 outputs extra results if the SEPDIS option on BCRRESULTS case control command is requested and skip factor on TSTEP option is used
9251697	The total strain is not equal to the sum of thermal and elastic strain from the output values for old parabolic shells in SOL 101.
9443424	OTEMP results for models containing parabolic shells (CQUAD8 and CTRIA6) were incorrectly reported due to bug in the results recovery code.
8413597	SOL 401 Dynamics analysis subcase fails to converge for models containing CBUSH and CBUSH1D elements with scalar damping value specified either on PBUSH or PBUSH1D card.
9395170	SOL 401 Dynamics analysis subcase ignores damping imposed through GE/W4 options for LGDISP=+1 analysis when Stress stiffness is used (which is used by default).
9392420	For problems using BOLTSEQ, use of NINC value on TSTEP1 card instead of BOLTSEQ card causing missed intermediate results from being output.
9350273	For type 2 bolts with NINC=1, bisection logic wasn't actually cutting back the load after bisection resulting in failure to solve.

9365451	In SOL 402, if the problem name contained parentheses "()", the solution would fatal with a misleading error message "FATAL SYNTAX ERROR IN A LOGICAL COMMAND."
8406458	In SOL 402, if a model contains both contacts BCTSET and gluing BGSET, the contact parameters BCTPAR2 might not be associated to the correct contact BCTSET, depending on the order of the cards.
9398734	In SOL 402, when requesting the GPFORCES output, depending on the size of the model, a fatal error could occur due to a mis-match in an array size. Removing the output request would by-pass the problem.
9410713	A nastran SOL 401 deck with a time-varying RFORCE/RFORCE1 and additional follower type static (non-time-varying) load, for example static pressure or FORCE1 can give incorrect result and cause convergence problem.
9285115	A transient SOL 401 Thermo-mechanical multi-physics model with a time-varying RFORCE/RFORCE1 and multi-physics pressure load can encounter convergence problem.
9273010	The CQUAD8 element formulation used by nastran in releases prior to NXN 1872 can give wrong results in buckling problems.
8402864	SOL 108 Random analysis scales poorly with the number of subcases
9389580	For CELAS element, when it is inactive, its initial element stiffness matrix is not scaled down. So it needs to multiply its initial element stiffness matrix by a scale factor to fix this PR.
9356408 9356305 9356370	The software updates ELAREST data block at the beginning of a subcase, which is a limitation for multiphysics solution.
9325846	<p>When the software encounters a non-convergence in material library, it does not stop the computing, then you will get unreasonable strain values. After the fix it prints out a fatal message for the non-convergence in material library.</p> <p>Formulations for shell elements in SOL 106 and SOL 401 are different. SOL 106 uses engineering strain to compute stress and SOL 401 uses GREEN strain to compute stress. when strain is small, engineering strain is similar to GREEN strain. For this PR case, it is a simple Axial tensile model, the initial length(L0) is 2000, and the terminal length(L1) is 2400, so</p> <p>Engineering strain $E_{XX} = (L1/L0)-1 = 0.2$</p> <p>GREEN strain $E_{XX} = 0.5 * [(L1/L0)*(L1/L0)-1] = 0.22$</p> <p>From above computation, you can see the strain is not small, so SOL 401 result differs from SOL 106.</p>
8412889	In SOL 402, if a model contains SPCD cards referenced by LOAD case control cards and varying from subcase to subcase, and if the user gives a lot of memory to the solver (gigabytes), the pre-processor would incorrectly write a lot of data, resulting in a very long computation time. This has no impact on the results but it can lead the user to think that the computation will never finish. As a workaround, the user can reduce the amount of memory passed to the solver. If this does not solve the issue, there are 2 additional workarounds. If SPCD cards are used as fixations with

	a 0 value, replace SPCD by SPC/SPC1; if not, use a DLOAD case control card referencing the SPCD cards with a table.
9366377	SOL 402 neglected the initial velocity definitions in a DYNAMICS subcase if it was not the first subcase or if it was not preceded by a PRELOAD, STATICS, or DYNAMICS subcase. As a workaround, the user can change the order of the subcases to prevent the described occurrence. It is possible to put a dummy STATICS subcase with no loads to precede the DYNAMICS subcase if necessary.
9373645	In SOL 402, in case of a restart, if SPCD, FORCE, MOMENT or RFORCE1 loads are used in the restart solution, incorrect results are obtained. There is no known workaround.
9390069	In SOL 402, when a global DLOAD card and several subcases including at least one with ANALYSIS = PRELOAD are defined in the case control, the loads are incorrectly computed during the preload. As a workaround, the user can remove the global DLOAD card in the case control and define a DLOAD card in each subcase with ANALYSIS = STATICS or ANALYSIS = DYNAMICS.
8405620	In SOL 402, the NLCNTL2 parameters DCON and PRCS, both related to contact, were ignored. This has been correct but those parameters cannot vary from subcase to subcase anymore.
8412526	SOL 402 does not support temperature-dependency of the mass density. The mass specified on the MAT1 card is used and a warning message is displayed saying that the TABLEM1 is ignored. In previous versions, the problem can be corrected by removing the reference to the TABLEM1 on the MATT1 card.
8414467	In SOL 402, when a TEMPD card is defined, a temperature load is applied to each node of the structure, excepted the internal nodes created automatically by the solver when cutting the bolts. In the case of a restart, temperatures were incorrectly applied to these additional nodes as well, creating incorrect thermal strains in the bolt. As a workaround, the user can replace the TEMPD cards by equivalent TEMP cards.
8415203	In SOL 402, the TEMPD bulk cards are processed before the TEMP bulk cards. When both cards are defined and are referred by a TEMP(INIT) case control card, the initial temperature was ignored for the nodes defined in the TEMP cards. On the other hand, when no TEMPD cards are defined, the behavior is correct. As a workaround, the user can replace the TEMPD cards by equivalent TEMP cards.
8415361	When a TEMPD bulk card has the same ID as a DTEMP bulk card, it is ignored in SOL 402. As a workaround, the user can use only DTEMP cards to define the temperature of all the nodes.
9414690	In SOL 402, if a contact set BCTSET was associated to a contact parameters card BCTPAR2 containing more than 9 parameters, either a fatal error would occur or the last parameters would be ignored, depending on the case.
9427247	In a SOL 402 model containing a BOLT card referencing the global coordinate system (CSID=0), only the bolt axis IDIR was used but the other two directions were randomly generated, resulting in outputting the bolt shear results in unknown axes. The global results were however correct.
9428224	In SOL 402, when a model contains several subcases with different DLOAD case control cards which refer to the same SPCD cards associated to different tables

	from one subcase to another, incorrect results are obtained. There is no known workaround.
9428458	In SOL 402, if a model contains both BCTSET and BOLT cards, a fatal error “%%E01-MCT311, software error” could occur or the wrong contact set could be activated or deactivated in a given subcase. This was due to a conflict in the numbering of those contact and bolt sets.
9429005	In SOL 402, when a preload subcase is followed by a dynamics subcase, there is no known workaround.
9429970	In SOL 402, when a model contains time-unassigned loads and preload subcases, wrong results are obtained, except if the computation starts with all the preload subcases, which is the most common use-case. As a workaround, the user can replace the time-unassigned loads by equivalent time-assigned loads (DLOAD --> TLOAD1 + TABLED1).
9433593	Model contained SPCD cards and 2 subcases (statics + modal). It was exported from Simcenter as SOL 401, then converted to SOL 402. Therefore, it contained companion SPC cards next to SPCD. This would not be the case for models exported directly as SOL402. This is now allowed for 402 as well
9435310	In SOL 402, if a model contains both BCTSET and BOLT cards, a fatal error “%%E01-MCT311, software error” could occur or the wrong contact set could be activated or deactivated in a given subcase. This was due to a conflict in the numbering of those contact and bolt sets.
9436569	In SOL 402, if the modal subcase was generating a fatal error, for example if no eigen value was found in the requested interval, the solution would still finish with a successful return value. It was up to the user to look for the error messages in the F06 file. This issue has been fixed now.
9436864	In SOL 402, if a model contains a PSOLCZ card without any thickness specified, the solver was using a zero-thickness, generating a fatal error “%%E02-ASP147, ELEMENT xxx Zero thickness”. This has been changed to use 1.0 as a default thickness.
9438311	With SOL 402, if a simulation contained MATDMG EUD, the simulations crashed due to issue for Jacobian strain which was corrupted and prevent strain measurement transformation. The workaround was to use MATDMG UD. Now this issue has been fixed.
9438345	In SOL 402, if the user requested the SPCFORCES for a MODAL (or FOURIER or CYCMODES) subcase, a crash would occur. Since this output request was not supported for those subcase types, the user could simply remove it to by-pass the issue. This has now been fixed and the output request is ignored.
9461974	In SOL 402, if the model contained an RFORCE card referenced by a DLOAD case control card and the grid point identification number through which the rotation vector acted was not located at (0,0,0), the forces were not computed correctly.
9464334	In SOL 402, with MATCRP TYPE=301 and NLCNTL2 CRINFAC=1.0, the solver could crash because during iteration of material law integration, some trial von Mises stress became negative. The workaround was to decrease MATCRP THRESH to improve convergence or to change NLCNTL2 CRINFAC from 1.0 to 0.5. This has now been fixed.

9378522	Inaccurate load approximation in RDMODES leads to wrong results.
8401892	A hang in SOL 111 analysis using DMP when more than 16 processors are used.
9324380	Rigid modes with negative eigenvalues caused Lanczos to crash
9414728	The performance of grid contribution computaton is slow if the number of grids requested is very large.
9439161	Nastran issues fatal message in the ATV data recovery after solution if the required output frequency is not in the range of ATV matrices.
9386762	For frequency dependent vibroacoustic analyses that specify SDAMP on the structure, the SDAMP(structure) is also applied to the acoustic part.
9094749	ATV computation performace worsen with DMP due to PTMIC DMP collection
8410452	There was a problem in the software for the CBUSH1D and CBUSH elements in SOL 401. Specifically, they were always processed on the assumption that 'PARAM, LGDISP' was set to 'on'. Additionally, 'PARAM, MATNL' affected whether or not the CBUSH1D elements used non-linear spring data (if defined).
9358257	When SMP is turned on, the results of GRID POINT FORCE BALANCE is wrong for SOL401 with 3D solid elements. When SMP is turned off, the results of GRID POINT FORCE BALANCE is correct. After the bug fix, correct results for GRID POINT FORCE BALANCE is obtained regardless of the SMP setting.
9295772	SOL 101, 401, and 402 does not require SB when FT is specified on the PCOMP card.
8412521	In SOL 402, a wrong value of the Young modulus or Poisson ratio could be used in some very specific cases. In particular, this was the case for large strain analysis (using Cauchy stress/stress measure), with material non-linearities (PARAM,MATNL) turned on and a MATS1 card referencing a TABLES1 in total strain without thermal dependency but a Young modulus having a thermal dependency or having a Poisson coefficient with thermal dependency.
9303135	In SOL 402, when requesting the stresses for modal subcases would result in a zero output. This was due to the change in stress/strain measure performed in the previous release.
9391634	In SOL 402, if the problem name contained a dot "." (beside for the file extension), e.g., "name.1.dat", the solution would fatal with a misleading error message "FATAL ERROR: INPUT OP2 FILE "...sf1" NOT FOUND"
8396518	SDAMPING(structure) is not applied correctly in the context of SOL 108 Femao strong coupling vibroacoustic scenario.
9424124	Slow-down in femao postprocessing for displacements in Simcenter Nastran 2019.1
9424467	NXN2019.1 requires more memory in DMP than in NXN12
9442859	Contact model with TEMP loads at the grids causes a crash in TEMPFRIC module
9400955	Peformance degradation in FOCOST module for large model with 5-8 million contact elements
9377201	SOL 401 BCRPARA does not support type RIGID but is not trapped as an error
9361342	Trap input when duplicate element Ids of different element types are present in present in glue or contact

9292288	SOL 200 model with different BGSETs in different SUBCASES causes UFM 5629 (DSAD1C)
8406114	HDF5 Output - ELNAME Label for GPFORCE output is incomplete in hdf files
9291179	HDF5 errors in Nastran log file and crash/undefined behavior when trying to write EPT to HDF5 output.
8415256	In the linear solution sequences, when a bolt (etype=1) is present in the model and this bolt has been preloaded in subcase 'n', any subcase that follows subcase 'n' that does not contain the bolt but only has a service load will see issues with glue stiffness not being applied correctly (assuming there is glue anywhere in the model).
9414809	In the linear solution sequences, BOLTRESULTS case control card is not supported. Instead of ignoring the card during runtime and allowing the solution to continue, a FATAL is issued. This behavior is to be changed and the solution will be allowed to proceed.
9403440	In models where number of instances of bolts exceeds 1000 (number of subcases x number of bolts), internal BGSET ID created for bolts can clash with internal BGADD IDs, thereby producing a FATAL error since BGSET and BGADD IDs should not be the same. This has been fixed in 2019.2. Workaround is to add another decimal place to the BGADD ID created by the user
9454857	In SOL 402, the number of threads used during the computation was not printed in the F06 file if this number was set using the OMP_NUM_THREADS environment variable.
8405181	Nastran error message for checksum failure in a deck that was modified outside of Simcenter was not very descriptive.
9325528	In SOL 101, when iterative solver is used, the glue forces were not included in the SPC force calculation and so SPC force result was not giving correct value.
9317116	Nastran was crashing when it was running out of memory inside the iterative solver. Memory checks are introduced so that Nastran exits gracefully in case of insufficient memory.
9280351	During the Analysis phase of MUMPS solver, a memory allocation error happens inside Metis. Unfortunately, MUMPS code fails to catch this allocation error and Nastran hangs downstream.
9435925	Subcase with bolt (boltId in subcase) followed by subcase without bolt (the latter is where issue is noticed)
9388230	ASSIGN SC_H5 fails in case path includes spaces
9366003	PCOMP laminate element ply results incorrect from random analysis...
9362151	NX Nastran 2019.1 fails in MODCON for some large models.
9359892	Fatal error in FEMA0 analysis for enforced motion from large file from SPCDFILE.
9327491	DISP(PLOT)=NONE still writes data to OP2 file
8405863	In SOL402, if the model contained a contact set including the contact parameter BCTPAR2 PDEPTH, this parameter was not correctly taken into account and the solver was using the default value of 5 times the size of the largest element face
8410691	The error message shown below missing from the Nastran help documentation is added back in 2019.2.

	<p>USER FATAL MESSAGE 4663, IMPLAUSIBLE STRESS-STRAIN CURVE FOR ELEMENT-ID = ****</p> <p>The yield stress is found to be negative, which is implausible. This could occur if the stress-strain curve is defined for or extrapolated to the negative value of the stress. Check the table for stress-strain curve.</p>
9448625	Different performance in SPDC and DISOFPM based on selected frequency. A case with higher frequencies solves slower than a case with lower frequencies.
9371535	Nastran crashed in restart when running with SMP.
9370672	Nastran doesn't allow more processes than the number of frequencies in SOL 108 and SOL 111 analyses.
9414690	In SOL402, if a contact set BCTSET was associated to a contact parameters card BCTPAR2 containing more than 9 parameters, either a fatal error would occur or the last parameters would be ignored, depending on the case.
9435310	In SOL 402, if a model contains both BCTSET and BOLT cards, a fatal error “%%E01-MCT311, software error” could occur or the wrong contact set could be activated or deactivated in a given subcase. This was due to a conflict in the numbering of those contact and bolt sets.
9398734	In SOL 402, when requesting the GPFORCES output, depending on the size of the model, a fatal error could occur due to a mis-match in an array size. Removing the output request would by-pass the problem.
9436864	In SOL 402, if a model contains a PSOLCZ card without any thickness specified, the solver was using a zero-thickness, generating a fatal error “%%E02-ASP147 , ELEMENT xxx Zero thickness”. This has been changed to use 1.0 as a default thickness.
8412889	In SOL 402, if a model contains SPCD cards referenced by LOAD case control cards and varying from subcase to subcase, and if the user gives a lot of memory to the solver (gigabytes), the pre-processor would incorrectly write a lot of data, resulting in a very long computation time. This has no impact on the results but it can lead the user to think that the computation will never finish. As a workaround, the user can reduce the amount of memory passed to the solver. If this does not solve the issue, there are 2 additional workarounds. If SPCD cards are used as fixations with a 0 value, replace SPCD by SPC/SPC1; if not, use a DLOAD case control card referencing the SPCD cards with a table.
8414467	In SOL 402, when a TEMPD card is defined, a temperature load is applied to each node of the structure, excepted the internal nodes created automatically by the solver when cutting the bolts. In the case of a restart, temperatures were incorrectly applied to these additional nodes as well, creating incorrect thermal strains in the bolt. As a workaround, the user can replace the TEMPD cards by equivalent TEMP cards.
8415361	When a TEMPD bulk card has the same ID as a DTEMP bulk card, it is ignored in SOL 402. As a workaround, the user can use only DTEMP cards to define the temperature of all the nodes.
9373645	In SOL 402, in case of a restart, if SPCD, FORCE, MOMENT or RFORCE1 loads are used in the restart solution, incorrect results are obtained. There is no known workaround.

9429005	In SOL 402, when a preload subcase is followed by a dynamics subcase, the initial conditions (when defined) are not taken into account, which causes wrong results. There is no known workaround.
8407645	In SOL 402, the NLCNTL2 parameters DCON and PRCS, both related to contact, were ignored. This has been correct but those parameters cannot vary from subcase to subcase anymore.
9438345	In SOL 402, if the user requested the SPCFORCES for a MODAL (or FOURIER or CYCMODES) subcase, a crash would occur. Since this output request was not supported for those subcase types, the user could simply remove it to by-pass the issue. This has now been fixed and the output request is ignored.
9464334	In SOL 402, with MATCRP TYPE=301 and NLCNTL2 CRINFAC=1.0, the solver could crash because during iteration of material law integration, some trial von Mises stress became negative. The workaround was to decrease MATCRP THRESH to improve convergence or to change NLCNTL2 CRINFAC from 1.0 to 0.5. This has now been fixed.
8412526	SOL 402 does not support temperature-dependency of the mass density. The mass specified on the MAT1 card is used and a warning message is displayed saying that the TABLEM1 is ignored. In previous versions, the problem can be corrected by removing the reference to the TABLEM1 on the MATT1 card.
9303135	In SOL 402, when requesting the stresses for modal subcases would result in a zero output. This was due to the change in stress/strain measure performed in the previous release.
9436569	In SOL 402, if the modal subcase was generating a fatal error, for example if no eigen value was found in the requested interval, the solution would still finish with a successful return value. It was up to the user to look for the error messages in the F06 file. This issue has been fixed now.
9356421	<p>There are 2 node types in an inactive element:</p> <p>Floating nodes: These are the nodes that will be removed because all elements attached to these nodes will be removed. Node results such as acceleration, displacement should be removed.</p> <p>Remaining nodes: These nodes remain in the structure, because only some attached elements are removed, not all. Node results such as acceleration, displacement still need to be printed out.</p> <p>For issue 1, although the element on the face is inactive, the nodes of this element are remaining nodes.</p> <p>For issue 2, only the mid node lying on the edge of the cube with two visible faces is floating node. If you change the 3D mesh from parabolic tetrahedron to linear tetrahedron elements, then there are not floating nodes.</p>
9437014	To be consistent with SOL 402, for MATCZ bulk data entry, when YOS > GIC, the software issues a FATAL message in SOL 401. The description in QRG document was updated for YOS of MATCZ.

4. Simcenter Nastran 2019.2 operating system requirements

The following tables list the supported 64-bit operating system requirements to run Simcenter Nastran 2019.2 . The product was tested using these operating system levels.

INTEL Windows (64-bit)

- Win Server 2012 R2
- Win Server 2016
- Windows 10 Professional and Enterprise

Linux (64-bit)

- SUSE SLES 12 SP3
- SUSE SLES 15
- Red Hat ES 7.0
- Red Hat ES 7.5
- Centos 7.0
- Centos 7.5

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