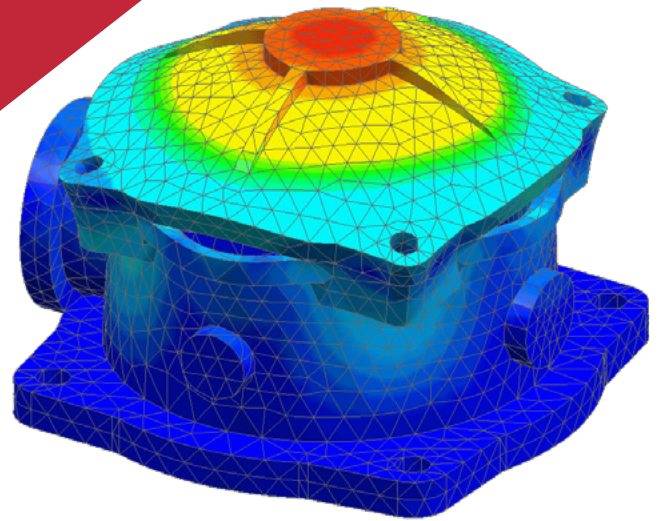
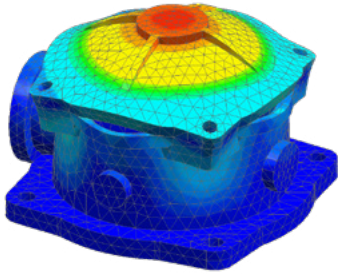


NX Nastran II

## WHITEPAPER

# Introduction to NX Nastran Licenses: Desktop vs Enterprise





**Software:**  
NX Nastran 11

**Additional Documents:**  
Selecting NX Nastran Licenses in NX /  
Simcenter 3D

Selecting NX Nastran Licenses in Femap

## Overview

There are two main types of Nastran licenses: desktop and enterprise. Desktop licenses are less expensive but are intended for use on the same computer that generated the input file. This whitepaper introduces the differences between desktop and enterprise licenses, gives additional details on checksum control, and identifies the types of Nastran executables. Additional documents detail how to select specific license types in Femap and NX/Simcenter 3D.

*This whitepaper is part of a series of free Siemens PLM Software training resources provided by ATA. For more whitepapers, tutorials, videos, and macros, visit ATA's PLM Software website: <http://www.ata-plmsoftware.com/resources>.*

## Comparing Desktop and Enterprise Licenses

There are, in general, two kinds of NX Nastran licenses: a desktop license and an enterprise license. The desktop license is less expensive and licensed with the intention of NX Nastran being used on the same (generally Windows) desktop that the pre/post-processor is being used on. When the model is to be solved, the deck must first be either created or prepared to run on the same computer as the Nastran executable.

A common misconception with the desktop license is that the deck must be imported or launched only from the preprocessor. While the desktop license is very easy to use when launching the solver from the preprocessor, it also offers many powerful capabilities and can be used very generally with NX Nastran capabilities such as text editing, include files, and command-line Nastran operation on the same computer. The desktop license can be used even if the model contains NX Nastran cards that the preprocessor does not support. The main distinction is that the Nastran desktop license is for use on the same desktop computer where the user is working with the input. The Nastran desktop license is not for use with distributed memory parallel (DMP) or high-performance computing (HPCs), nor is it suited for using separate computers for solving and preprocessing. The other distinction is that for the desktop licensing, the preprocessor must be used to generate a checksum (code) based on the text in the bulk data section of the model. The preprocessor must be used to add this computer-specific “code” to stand-alone NX Nastran decks.

Enterprise licenses are significantly more expensive, but they can be used with a dedicated solver computer, with HPC, and across computers and platforms. In addition, there is no requirement to prepare a “checksum” for the deck, which makes the enterprise license very general.

Because Nastran licenses tend to be in high demand for engineering analysis, organizations may choose to have both types of licenses available to meet this demand in the most cost-effective manner. License files may include both desktop and enterprise licenses, so it can be helpful to know how to purposefully use one type of license instead of another. Additional documents describe the steps for Femap and NX/Simcenter 3D (SC) users to choose between an enterprise or desktop license of NX Nastran.

## Checksums

To use a desktop license of Nastran, a checksum (a series of numbers and letters) must appear at the end of the input deck, right after ENDDATA. The checksum is created by the preprocessor (Femap or NX/SC) when the deck is written or exported.

## Introduction to NX Nastran Licenses: Desktop vs Enterprise

An input deck containing a checksum can only be solved with a desktop license on the computer that generated the checksum.

The checksum is only associated with the bulk data. Any change to the bulk data will invalidate the checksum, even if that change happens in an include file. However, changes to any other part of the Nastran deck, such as file assignment or case control, can be made without invalidating the checksum.

Checksums are not required for enterprise licenses. If you are planning on using an enterprise license, the checksum can be ignored and your choices of where to run Nastran are only limited by the availability of enterprise licenses.

### Nastran Executables and Configuration Files

There are two types of Nastran executables: those that are distributed with Femap or NX, and those that are distributed alone. Each executable has a configuration (config) file that contains the default settings used when the executable is run.

We will call the Nastran executable that is distributed with the preprocessor (whether Femap or NX/SC) the bundled executable. The bundled executable is located in a subfolder of the preprocessor installation (usually similar to Femap/nastran/bin or NX/NXNASTRAN/bin), and the config file will be in a preprocessor subfolder (Femap/nastran/conf or NX/NXNASTRAN/conf). We will call the Nastran executable distributed on its own the enterprise executable. The configuration file for the enterprise executable is located in the conf subfolder of the enterprise installation.

It is possible that the Nastran config files may be installed centrally and are not editable by the user. However, there is a hierarchy of config files available to the user. The user can store their own config file in a folder defined by environment variables %HOMEDRIVE%%HOMEPATH%\nast11.rcf, and this config file will take precedence over the system config file. Of even higher precedence would be a config file located in the same directory as the input file. Another option for the user is to point Nastran to the location of the desired config file using a command-line option “rcf = path”. This last option will override the config file located in the same directory as the input file.

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