



Patran 2023.1

Installation and Operations Guide

Americas

5161 California Ave. Suite 200
University Research Park, Irvine, CA 92617
Telephone: (714) 540-8900
Toll Free Number: 1 855 672 7638
Email: americas.contact@mscsoftware.com

Europe, Middle East, Africa

Am Moosfeld 13
81829 Munich, Germany
Telephone: (49) 89 431 98 70
Email: europe@mscsoftware.com

Japan

Shinjuku First West 8F
23-7 Nishi Shinjuku
1-Chome, Shinjuku-Ku
Tokyo 160-0023, JAPAN
Telephone: (81) (3)-6911-1200
Email: MSCJ.Market@mscsoftware.com

Asia-Pacific

100 Beach Road
#16-05 Shaw Tower
Singapore 189702
Telephone: 65-6272-0082
Email: APAC.Contact@mscsoftware.com

Worldwide Web

www.hexagon.com

Support

<https://simcompanion.hexagon.com/>

Disclaimer

This documentation, as well as the software described in it, is furnished under license and may be used only in accordance with the terms of such license.

Hexagon reserves the right to make changes in specifications and other information contained in this document without prior notice. The concepts, methods, and examples presented in this text are for illustrative and educational purposes only, and are not intended to be exhaustive or to apply to any particular engineering problem or design. Hexagon assumes no liability or responsibility to any person or company for direct or indirect damages resulting from the use of any information contained herein.

User Documentation: Copyright ©2023 Hexagon AB and/or its subsidiaries. All Rights Reserved.

This notice shall be marked on any reproduction of this documentation, in whole or in part. Any reproduction or distribution of this document, in whole or in part, without the prior written consent of Hexagon is prohibited.

This software may contain certain third-party software that is protected by copyright and licensed from Hexagon suppliers. Additional terms and conditions and/or notices may apply for certain third party software. Such additional third party software terms and conditions and/or notices may be set forth in documentation and/or at [third-party software information](#) (or successor website designated by Hexagon from time to time).

The Hexagon logo, Hexagon, MSC Software logo, MSC, MSC Nastran, Marc, Patran, Dytran, and Laminate Modeler are trademarks or registered trademarks of Hexagon AB and/or its subsidiaries in the United States and/or other countries.

NASTRAN is a registered trademark of NASA. PAM-CRASH is a trademark or registered trademark of ESI Group. SAMCEF is a trademark or registered trademark of Samtech SA. LS-DYNA is a trademark or registered trademark of Livermore Software Technology Corporation. ANSYS is a registered trademark of SAS IP, Inc., a wholly owned subsidiary of ANSYS Inc. ACIS is a registered trademark of Spatial Technology, Inc. ABAQUS, and CATIA are registered trademark of Dassault Systemes, SA. FLEXIm and FlexNet Publisher are trademarks or registered trademarks of Flexera Software. PostScript is a registered trademark of Adobe Systems, Inc. PTC and Pro/ENGINEER are trademarks or registered trademarks of Parametric Technology Corporation or its subsidiaries in the United States and/or other countries. Unigraphics, Parasolid and I-DEAS are registered trademarks of Siemens Product Lifecycle Management, Inc. All other brand names, product names or trademarks belong to their respective owners.

Revision 0. April 4, 2023

P3:V2023.1:Z:Z:DC-OPS-PDF

Documentation Feedback

At Hexagon, we strive to produce the highest quality documentation and welcome your feedback. If you have comments or suggestions about our documentation, please [write to us](#).

Please include the following information with your feedback:

- Document name
- Release/Version number
- Chapter/Section name
- Topic title (for Online Help)
- Brief description of the content (for example, incomplete/incorrect information, grammatical errors, information that requires clarification or more details and so on.)
- Your suggestions for correcting/improving documentation

You may also provide your feedback about Hexagon documentation by taking a short 5-minute [survey](#).

Note:

The above mentioned e-mail address is only for providing documentation specific feedback. If you have any technical problems, issues, or queries, please contact [Technical Support](#).

Contents

Patran Installation and Operations Guide

1 Introduction & Overview

Introduction	2
Who Should Use This Guide	2
What This Guide Contains	2
Overview	2
Pre- and Postprocessor	2
Analysis Modules, CAD Access Interfaces, and Preferences	2
FLEXlm	3
Online Documentation	3

2 Installing on Microsoft Windows

Creating a New Installation	6
Silent Installation	9
Licensing Installation (Optional)	10
Upgrading an Existing Installation	10
Optional Steps	11
Changing Fonts on Windows	11
Installing 3Dconnexion Spaceball	11
Setting the Startup Directory	11
Module and Preference Setup	12
Analysis Preferences Setup	12
Pro/ENGINEER Access Setup	14
Patran Thermal Setup	15
Flightloads and Dynamics Setup	17
Analysis Manager Setup	17
Tutorials (Formerly Acumen)	19
Documentation	19
Known Limitations	20
Uninstalling	20

3 Installing on LINUX

Creating a New Installation	22
Installing using Downloaded Files.	22
Console Installation	24
Silent Installation	24
Licensing Installation (Optional)	25
Upgrading an Existing Installation	25
Installing 3Dconnexion SpaceMouse for Use with Patran	27
Module and Preference Setup	27
Analysis Preferences Setup	27
Pro/ENGINEER Access Setup	28
CATDirect Setup (V4)	30
CATIA v5 Access Setup	31
Patran Thermal Setup	31
Flightloads and Dynamics Setup	31
Analysis Manager Setup	32
Tutorials (Formerly Acumen)	32
Documentation	33

4 User Environment

Environment Variables	36
LINUX Application Resources and Fonts	45
LINUX Window Manager Settings	46
Gnome	46
KDE	46
The *.pcl and *.def Setup Files	47
Command Line Arguments	53
LINUX Shell Resource Limits	56
The PDB Database System	57

5 Required Hardware & Software Configurations

Supported OS/Hardware Platforms	62
The mscinfo Utility	62
Memory and General Requirements	63
Microsoft Windows Requirements	65
Windows Certified Hardware	66
Linux Requirements	83

3D Graphics Drivers	86
6 Problems & Resolutions	
Startup Failures and Fatal Errors	90
Errors in Functions and Opening Databases	91
Cosmetic Problems and Questions	94
Crash Reporting System	97
FLEXIm and Licensing Problems	98
General FLEXIm Troubleshooting	98
FLEXIm Common Problems and Resolutions	100
Changes of Behavior in QT version of Patran	106
A Installing the MSC.License Server	
Overview	110
Installing the MSC.License Server Using a New LINUX Server	110
Obtain a Patran License File for Your Server	110
Place the License File on the Server	110
Check Paths and Server Names in the license.dat File	111
Start the Manager Daemons	112
Set the Imgrd Daemon to Execute on Reboot	112
Set Up Clients to Access the Floating License	112
Installing MSC.Licensing Using a New Windows Server	112
Obtain a Patran License File for Your Server	112
Place the License File on the Server	113
Using Lmtools.exe to Configure FLEXIm	113
Set Up Clients to Access the Floating License	113
Replacing Codes on an Existing LINUX Server	113
Edit the New License File	113
Replace License File	114
Restart Daemon	114
Replacing Codes on an Existing Windows Server	114
Edit the New License File	114
Replace License File	114
Stop and Restart the FLEXIm Service	114
Uninstalling FLEXIm on LINUX	115
Uninstall the license server	115
Remove the server	115
MSC_LICENSE_FILE and LM_LICENSE_FILE	115

Additional Documentation	116
---------------------------------------	------------

B Testing the Installation

Test Patran	118
Patran Test Procedure	118
Test Application Preferences	119
Setup	119
Test the Analysis Manager	121
Test Laminate Modeler	121
Test Patran Thermal	123
Test Patran CAD Access	124
Test ACIS Access	124
Test CATDirect and CATIA Access	125
Test the ProENGINEER Access	125
Test Unigraphics Access	126
Test STEP Access	127

C Patran QT using Exceed

Remote Session with Exceed	130
Modify Exceed Configuration	130
Environment Settings	133

1

Introduction & Overview

- Introduction 2
- Overview 2

Introduction

Most of the installation and configuration tasks are managed by the Patran installation program:

- `patran_20xx_linux64.exe` on Linux
- `patran_20xx_windows64.exe` on Windows

This manual is designed to guide you through the process of using the installation program.

Who Should Use This Guide

This manual is intended to guide system administrators and users through the installation. The instructions assume that you have a basic knowledge of the operating system you are using. Root or Administrator level access is required for installation of the licensing system, and will probably be necessary to access centralized installation directories.

What This Guide Contains

This guide contains all the information you need to install and configure the product. It is organized into the following chapters:

- [Installing on Microsoft Windows, 5](#)
- [Installing on LINUX, 21](#)
- [User Environment, 35](#)
- [Required Hardware & Software Configurations, 61](#)
- [Problems & Resolutions, 89](#)
- [Installing the MSC.License Server, 109](#)
- [Testing the Installation, 117](#)

Overview

The software system consists of several components: the core pre- and postprocessor, the PDB database system, modules and preferences, the FLEXlm licensing system, and the on-line help system. The product name refers both to the pre- and postprocessing components, and to the system as a whole.

Pre- and Postprocessor

Patran is an open-architecture, expandable, 3D Mechanical Computer Aided Engineering (MCAE) environment with an interactive graphic interface. All pre- and postprocessing, translation, and solver capabilities are accessed from within this graphical environment.

Analysis Modules, CAD Access Interfaces, and Preferences

Patran is designed as an open, expandable system. Additional interfaces and components can be added to the core system. Analysis modules provide specialized solvers for use from within Patran. Patran provides two

types of CAD access: CAD Import and CAD Interface. CAD Import allows import of a limited set of CAD geometry types (IGES, STEP, ProE .geo, CATXPRES and Express Neutral files) through Patran's built-in legacy translators. CAD Interface supports a wider range of geometry types and is a more modern implementation that imports geometry via a Parasolid translation process. This is the default method for most CAD import types. Analysis Preferences allow integration with Hexagon analysis solvers as well as third-party analysis codes.

The installation handles all additional components, but each may be licensed separately.

FLEXlm

A FLEXlm Helium license server is recommended for all platforms. If your installation points to an older license server, you will have to install the new FLEXlm license server.

FLEXlm functions as a stand-alone nodelock license server or as a distributed license system. This guide provides basic FLEXlm installation instructions in the section [Installing the MSC.License Server, 109](#). For other issues and questions, please consult the Flexera documentation at their web site, <http://www.flexerasoftware.com/>.

Online Documentation

The Patran HTML Help system is a hybrid JAVA/JAVA Script Help system that can be displayed on most computer platforms and browsers. For the best experience we strongly recommend the following:

- On Windows, use the latest version of Microsoft Edge* or Google Chrome*.
- On LINUX, use Mozilla Firefox version 67 or lower. The Patran help system does not support Mozilla Firefox version 68 or higher.

The Patran Help Pages make extensive use of JavaScript. Make sure that JavaScript is enabled in your browser. If you plan to use the search feature, make sure that Java is enabled, as well.

Note:

*By default, Chrome and Edge do not allow the frame-based help to be opened from local drives.

The workaround is to pass the starting parameter "--allow-file-access-from-files" while launching Chrome or Edge. This can be done by passing the parameter while setting the environment variable P3_BRW_HELP, e.g:

```
P3_BRW_HELP = C:\Program  
Files\Google\Chrome\Application\chrome.exe --allow-file-  
access-from-files
```

or

```
P3_BRW_HELP = C:\Program Files  
(x86)\Microsoft\Edge\Application\msedge.exe --allow-file-  
access-from-files
```

See: [P3_BRW_HELP](#)

Please note that the environment variable must be set before starting Chrome or Edge. For this, close all running instances of the browser using Windows Task Manager.

2

Installing on Microsoft Windows

- Creating a New Installation 6
- Silent Installation 9
- Licensing Installation (Optional) 10
- Upgrading an Existing Installation 10
- Optional Steps 11
- Module and Preference Setup 12
- Known Limitations 20
- Uninstalling 20

Creating a New Installation

1. It is recommended to exit all Windows programs before proceeding. It is also recommended that you install any solver applications that Patran or any of its verticals (i.e., Flightloads) will use (such as MSC Nastran, or Marc) before installing Patran.
2. Log in to your system. In general, you do not need administrator privileges except as follows:
 - To update one or more DLL files in the Windows system directory. The setup utility will recognize this and ask you to install with administrator privilege if necessary.
 - To create the installation directory. You may need administrator privilege to grant this permission.
 - To install the FLEXlm License Server.
 - To create installations visible by other users.
 - To utilize file association option.
 - To install, configure and/or start the Analysis Manager.
3. If you are downloading from the Solutions Download Center, download the self-extracting archive (.exe) and follow these steps:
 - Copy the self-extracting archive (patran_20xx_windows.exe) file to a temporary subdirectory with enough disk space. Make a note of this location.
 - Click on patran_20xx_windows.exe to start install shield (product installer). For the remainder of the installation process, follow instructions in the product installation guide. You may remove temporary files from the subdirectory created in this step after the installation is complete.
4. The installer will present you with the options to select. You may install them in any order.
 - Patran (Installs the Patran software system and any of its vertical products).
 - MSC.Licensing¹ (Installs a FLEXlm license server). See [Licensing Installation \(Optional\), 10](#)
5. Follow the on-line installation instructions from this point on for each option selected.
6. To install Analysis Manager or the Documentation, separate installers need to be downloaded and run. See [Analysis Manager Setup, 17](#) or [Documentation, 19](#) for more details.

¹ TCP/IP Required: For licensing to work you must have the TCP/IP networking facility installed. Patran also requires an ethernet card even if the workstation is not connected to a network. Patran uses the ethernet card to create a system ID for FLEXlm licensing. For additional information see [FLEXlm and Licensing Problems, 98](#).

Notes:

- The default Patran installation directory on Windows has been changed
From:
`C:\MSC.Software\Patran_x64\20xx`
To:
`<C:\Program Files\MSC.Software\Patran_x64\20xx>`
- Patran now supports a space in the installation path (e.g. C:\Program Files)

Select Product to Install:

Patran is the default product to install. However, you may install one or all of the following Patran vertical products. You may rerun the installer to add, modify or delete any of these products. Only a single installation is required for all these products.

Product	Description
Patran 20xx	The latest version of standard Patran.
Flightloads 20xx	The Flightloads installation is contained as part of the Patran installation. Flightloads requires both Patran 20xx and MSC Nastran 20xx. For more information about Flightloads setup, see: Flightloads and Dynamics Setup, 17

Important:**Deprecated Features and License Bundles**

The following features are or will be deprecated now or in a future release as indicated. Please make plans accordingly. Please contact your sales representative for available migration plans if necessary.

- AFEA, FEA, TFEA and Nastran Desktop license bundles are no longer available. Please transition to standalone products or MSCOne.
- MSC Fatigue is no longer supported. Last available version is Patran 2021.4. Please migrate to the best in class product CAEfatigue.
- Sinda preferences (and its Thermica support) is no longer supported. Last available version is Patran 2021.4. Please contact your local sales representative for alternative thermal analysis solutions.
- MSC.Nastran SOL 600 has been discontinued. Please update all nonlinear MSC.Nastran jobs to use best in class SOL 400 nonlinear solution using the Implicit Nonlinear preference.

A separate desktop icon is created for each product above and a separate entry in the Start menu under MSC.Software | Patran 20xx.

For all products above it may be necessary to configure the setup to access the necessary solver codes. This is explained in [Analysis Preferences Setup, 12](#).

Select Setup Type:

In some instances the following installation options may be presented:

- **Full** installs all modules, options, and preferences.
- **User Selectable** allows you to select which modules, options and preferences are installed. If you select custom, you will be presented with a form to select individual components.
- **Common Features** installs a reduced set of the most frequently used modules, options and preferences.
- **Client** configures a workstation to run from a central file server.

The table below lists some of the selectable items that require information from the user during installation or subsequent steps to enable full functionality access. Not all of these may be presented to you as selectable options.

Product Set	Additional Information
Analysis Preferences	See Analysis Preferences Setup, 12 .
Analysis Manager	See Analysis Manager Setup, 17 .
Documentation	See Documentation, 19 .
Flightloads	See Flightloads and Dynamics Setup, 17 .
Licensing	See Licensing Installation (Optional), 10 .
Patran Pro/ENGINEER Access	See Pro/ENGINEER Access Setup, 14 .
Patran Thermal	See Patran Thermal Setup, 15 .

When asked for Scratch Directory option to store Nastran temporary files, provide a valid directory name without spaces or special characters. The default scratch file directory is “C:\scratch”

Invoking Patran (and its verticals)

Patran and its verticals (i.e., Flightloads) can be invoked in three different manners:

- Double-click on the desktop icon created.
- Select it from the Start menu:
Start >(All) Programs > MSC.Software > Patran 20xx > Product
 From a Windows Command Prompt by typing:
`C:\">%P3_HOME%\bin\patran"`

where \$P3_HOME is the Patran installation directory, typically


```
C:\Program Files\MSC.Software\Patran_x64\20xx
```

Notes:

- Patran should always be invoked with quotes. Only if there are no spaces in the installation path, the quotes can be removed.
- The Patran installation directory (\$P3_HOME) must not contain non-standard characters such as “^” or “(“.
- Since Windows restricts the access to generate or modify the files in the installation folder (\$P3_HOME), it must not be set as the Patran working directory.

While opening Patran or any other executable in Patran, make sure that:

- P3_HOME environment variable path must not be specified in quotes. It should be specified as follows:

```
set P3_HOME=C:\Program Files\MSC.Software\Patran_x64\20xx
```
- Executable path (including P3_HOME) should be specified in double quotes

```
"%P3_HOME%\bin\patran"
```

Example:

To open Acumen, use:

```
set ACUMEN_HOME=C:\Program Files\MSC.Software\Patran_x64\20xx\  
"%P3_HOME%\bin\patran" -ifile "%ACUMEN_HOME%aa_init.pcl" -skin
```

Silent Installation

The Patran installation supports silent installations, which run in the background with no graphical interface or interaction with the desktop. Installations running in Silent mode rely on a preconfigured answer file to do the installation. Silent installations are generally used in a batch manner to facilitate installation on many machines on a network

Creating the Answer file

To create the answer file you need to run the Patran installation in normal (GUI) mode with a special switch which instructs the installation to record all of your answers in a specified answer file. Here is an example of the command:

```
<Dir>\patran_20xx_windows.exe -r [-f1"c:\location\filename"]
```

The installation program executed with the "-r" switch instructs it to generate the answer file and the optional "-f1" switch specifies the location and name of the answer file. (The brackets around the "-f1" switch indicate that it is optional. You do not need to type the brackets.) If the -f1 switch is not specified, the answer file will be created as follows:

```
c:\windows\setup.iss
```

Running the Silent mode installation

To run installation in silent mode use the “-s” switch and specify the answer file in this manner:

```
z:\patran_20xx_windows.exe -s -f1"c:\location\filename"
```

Note: Please note that the switch f1 in this example is a one, not an L.

Licensing Installation¹ (Optional)

Patran uses FLEXlm based licensing. If you already have FLEXlm setup as a license server, you do not need to complete this installation.

You will need to have a FLEXlm server on your Windows workstation or on a LINUX workstation on the same TCP/IP network.

To install FLEXlm:

1. Download MSC Licensing from the Solution Downloads Center.
2. Follow the MSC Licensing Instructions to install your FLEXlm license server.

Upgrading an Existing Installation

Upgrading an existing Patran installation is a manual operation and requires the following steps:

1. Follow the steps in [Creating a New Installation](#). This will create a parallel Patran directory. For example,

```
dir c:\Program Files\MSC.Software\Patran
07/25/19 12:16p <DIR> 20xx
07/25/19 12:16p <DIR> 20yy
```

If you do not have enough disk space for parallel directories, uninstall the existing installation. But first make sure to copy the customization files listed below. See [Uninstalling, 20](#).

2. Copy the following customization files from the old installation directory to new installation:

- p3_printers.def
- p3_trans.ini
- p3epilog.pcl
- p3toolbar.def
- p3quickpick.def
- settings.pcl
- p3manger_files*.cfg
- p3manger_files**.cfg

¹ A FLEXlm Helium license server is recommended for all platforms. If your installation points to an older license server, you should install the new FLEXlm license server.

3. Copy any customized template databases from the old installation to a staging area and open each one by running Patran from the new installation. The databases will be converted to the new database schema. Once this is complete, you can copy them to the new installation area.
4. Once you have completed testing the new installation or are comfortable using the new version, you can uninstall the previous installation.

Optional Steps

Changing Fonts on Windows

Patran on Windows uses fonts as defined under

Control Panel\Display\Settings\Advanced

Large fonts are not recommended as they may, depending on monitor size and screen resolution, distort some forms.

Installing 3Dconnexion Spaceball

Patran supports SpaceMouse Pro, SpaceMouse Wireless, Spacemouse Enterprise (tested 3DxWare driver version 10.8.8). Follow the SpaceWare installation instructions for these products. You can obtain these instructions, as well as the latest drivers, at the 3Dconnexion web site, www.3Dconnexion.com/software.

Notes:

- “patran-KMJ.xml” file which is generated by 3Dconnexion driver works with Patran.
- It is recommended for the SpaceMouse to work properly with Patran on Windows platform, the “Patran.xml” configuration file present in P3_HOME needs to be copied manually to the user AppData folder (C:\Users\\AppData\Roaming\3Dconnexion\3DxWare\Cfg). Also the file “MSC.Patran.xml” if present in the AppData folder, must be deleted.
- Zoom direction needs to be selected for all the advanced settings, for the mouse to work properly.

Setting the Startup Directory

Patran runs from and stores database, session, and journal files in certain directories. If invoked from a Windows Command Prompt, the current working directory is selected. If invoking from the Start menu or double clicking on the Patran icon, Patran uses the shortcut’s “start in” directory. This can be edited by using the right mouse button and selecting “Properties.” If this is not set, then Patran starts in the user’s home directory. If it cannot find it, it then looks for the HOMEPATH environment variable to define the startup directory. If no variables are set then the root directory (C:\) is used. Normally, the Windows administrator

should set up each account with a home directory. The startup directory can also be set using the Set Working Directory to Database Location toggle on the File/New or File/Open forms ([New...](#) (p. 69) in the *Patran Reference Manual*).

Note that unlike the LINUX version, you can run Patran on Windows using a path name that contains spaces. However, this is not supported because several third party products and modules do have problems with spaces.

Patran uses `%windir%\temp` as the startup directory by default. This usually resolves to:
`c:\windows\temp`

Module and Preference Setup

Analysis Preferences Setup

You can customize the MSC Nastran, Marc, Dytran, Abaqus, ANSYS or other 3rd party Preferences to automatically submit jobs from the Patran analysis forms. Edit the file `P3_TRANS.INI` in the Patran installation (`$P3_HOME`) to point to the correct location and machine name where the solver resides.

Note:

The default Patran installation directory on Windows has been changed

From:

C:\MSC.Software\Patran_x64\20xx

To:

<C:\Program Files\MSC.Software\Patran_x64\20xx>

Possible issues one may encounter when using the default installation path:

- P3_TRANS.INI file in P3_HOME: Editing or modifying any file located in C:\Program Files\ requires your application to be run as Administrator. If you are already logged in as Administrator, you can start Notepad or any other text editor with the “Run as Administrator” option. This allows you to browse and open P3_TRANS.INI for editing. Notepad++ automatically understands this requirement and gives an option to start another instance of the application as Administrator. For other applications like Notepad, you must decide to start the application with “Run as Administrator” beforehand by using the Right Mouse Button on the application’s icon to select this run option. Do not start the editor with a double click of the Left Mouse Button. This is a security feature of Windows to prevent accidental or unauthorized changes to your installation.
- During installation, the Configuration Tool to edit the P3_TRANS.INI file may be used. But once the installation is done, the P3_TRANS.INI file cannot be edited using the Configuration Tool (i.e. Configuration Utility). A message shown as 'SELECTED FILE IS READ-ONLY' will be displayed.

There is an entry in P3_TRANS . INI for each analysis preference, analysis module and version. The following example shows the entry for MSC Nastran:

```
[Nastran]
Hosttype=Windows
Scratchdir=
Acommand20xx=c:\Program Files\MSC.Software\MSC.Nastran\bin\nast20xx.exe
Host20xx=LOCAL
```

This file can be edited using Configuration Tool. Run this tool as part of the installation process or anytime after from

```
Start>Programs>MSC.Software>Patran 20xx>Configuration Utility
```

The Browse button on the analysis code subforms will bring up a directory tree dialog box so you can navigate to your analysis code installation. The Locate button will try to find your analysis code installation using information from the registry.

Pro/ENGINEER Access Setup¹

There are two methods to import Pro/ENGINEER part files. The first involves conversion to a Parasolid file and does not require Pro/Engineer to run in the background. The second method imports Pro/ENGINEER part files by actually running Pro/ENGINEER in the background and executing a Pro/Toolkit program. For this reason, any workstation that will access Pro/ENGINEER part files must be able to execute Pro/ENGINEER (i.e. the software must be executable and have valid licenses) using this method.

Note: To use the CAD Access features on Windows 64 machines, the Microsoft Visual C++ 2008 SP1 Redistributable Package (x86) is installed as part of the Patran installation.

1. During the Patran installation, you will be prompted for the command to run your Pro/ENGINEER software. Enter the path in the dialog box, for example:
C:\Program Files\proeWildfire 4.0
2. Next, you need to configure Patran for use with WildFire 3 and earlier, or WildFire 4. This will configure the MSCP_PROE_PREWF4 environment variable for your installation. Please see the table below for the correct setting for your version of Pro/E:

Table 2-1

For WildFire 3 or earlier	YES
For WildFire 4	NO

If you do not know the location of your Pro/E installation or version, you can change or add the environment variables in \$P3_HOME/site_setup.pm after you have finished the installation. The two environment variables are:

```
MSCP_PROE_CMD=C:\Program Files\proeWildfire 4.0\bin\proe1.bat
```

and

```
MSCP_PROE_PREWF4=YES or NO
```

These variables can be set using `setEnv` function. For example:

```
setEnv('MSCP_PROE_CMD', 'C:\Program Files\proeWildfire 4.0\bin\proe1.bat')
```

See [Environment Variables, 36](#) for additional information.

The following notes are applicable to the Import to Native Patran Geometry method:

The Pro/ENGINEER Wildfire release introduced the following platform changes:

- Existing Patran translator is still available for pre-Pro/ENGINEER Wildfire release.

¹ A Pro/ENGINEER installation is no longer needed if you use the Import to Parasolid feature to import your Pro/E files.

The following is necessary for customers to use the Patran Pro/ENGINEER translator with Pro/ENGINEER after January, 2004:

- PTC Important System Notice - Timeout <http://www.ptc.com/go/timeout/>

For Pro/ENGINEER 2001:

- Download NMSD.exe and follow PTC instructions.

For Pro/ENGINEER Wildfire:

- Download NMSD.exe and follow PTC instructions.
- Download wildfire datecode 2003490 and follow PTC instructions.

Pro/ENGINEER Wildfire 3.0/4.0

- Linux is supported for Import to Parasolid
- The p3_ProE and p3_ProENGINEER executables are built using Pro/ENGINEER version 2000i and therefore will not work with earlier versions of Pro/ENGINEER.

Running Pro/ENGINEER Access Remotely

You may convert a Pro/ENGINEER part file into a .geo file outside of Patran by running the p3_proengineer executable directly. This must be done on a system with Pro/ENGINEER installed and requires a FLEXlm license for Pro/ENGINEER Access.

1. Set the MSCP_PROE_CMD environment variable (see [Environment Variables, 36](#) for additional information).

```
set MSCP_PROE_CMD=d:\proe\bin\proe2000i.bat
```

2. Execute the p3_proengineer.exe script from the Patran installation.

It is possible to create an installation that contains only the Pro/ENGINEER Access (by selecting only Pro/ENGINEER Access in automated installation utility). You may not, however, simply copy the following script since it requires files included in the installation.

```
"%P3_HOME%\bin\p3_proengineer" +prt<partfile> pro_wait
```

For example:

```
"%P3_HOME%\bin\p3_proengineer" +prttest.prt pro_wait
```

Patran Thermal Setup

The only supported compilers¹ for Patran Thermal are listed in [Table 5-4 in Microsoft Windows Requirements, 65](#)

Microsoft Internet Explorer

Installation of the compiler may require Microsoft (MS) Internet Explorer (IE).

¹Compilers are only necessary for Patran Thermal runs where user subroutines are necessary to be compiled and linked into a new dynamic linked library (DLL). Once the DLL exists, Patran Thermal runs with no dependency on any compilers.

General Installation Notes

It is generally simpler, if space allows on the C: drive, to select the default locations for the compiler installations. Both compilers are then located in the same parent directory which is a requirement for the usage of the Patran Thermal preference.

If the compilers are installed prior to the installation of Patran Thermal then the Patran installation wizard automatically modifies the scripts which specify the location of the compilers. If compilers are not installed prior to the installation of Patran Thermal a warning is issued that the compilers need to be installed before the Patran Thermal module can be used.

Flightloads and Dynamics Setup

Flightloads and Dynamics supports separate “interactive” and “batch” locations of the MSC Nastran executable. Interactive MSC Nastran is used for spline verify, aero model import and loads extraction from aerodynamic/aeroelastic databases. Batch MSC Nastran is used for running analyses.

1. Create an environment variable under Control Panel/System/Environment as follows:

```
MSCP_FLDS_MSG_FILE=$P3_HOME/flds.msg
```

2. Edit `P3_TRANS.INI` file in the Patran `$P3_HOME` directory. Set the `Acommandxxxx` environment variable to point to the MSC Nastran executable for batch processes (and non-Flightloads MSC Nastran execution):

```
Acommand20xx=c:\msc\bin\nast20xx.exe
```

3. Create a new shortcut either as a desktop icon or in your Start menu. Under Properties\Shortcut for this new item, set “Target” to:

```
"%P3_HOME%\bin\patran" -ifile init_fld.pcl.
```

Note:

Patran should always be invoked with quotes. Only if there are no spaces in the installation path, the quotes can be removed.

Substitute `$P3_HOME` with the actual installation directory path. Use this shortcut to start MSC.Flightloads. This icon can be created at the time of installation by answering Yes to the prompt for creating a Flightloads icon.

Analysis Manager Setup

Below is a brief overview of the process for installing and configuring the Analysis Manager for a typical, standard installation. The Remote and Queue Manager services will be installed automatically by the install program.

1. Download the Analysis Manager installer from the Solution Download center. Choose Analysis Manager from the main installation window, see [Creating a New Installation, 6](#) for more information.
2. No other programs should be running when Analysis Manager is installed.
3. Select the location where you want the Analysis Manager installed.
4. Review the installation information and click on Next.
5. If you have MSC Nastran installed, click on browse to point Analysis Manager to its location.
6. If you have Marc installed, click on browse to point Analysis Manager to its location.
7. Choose whether or not you want Analysis Manager configured automatically, or if you would like to configure it manually.

Notes:

- When Nastran and Marc are installed in their default installation directory locations (e.g., <C:\Program Files\MSC.Software\...>), Analysis Manager does not work in combination with Patran on the Windows operating system. If you need to run Analysis Manager, it is required to install Patran, Nastran, and/or Marc in directories with names that do not contain a space.
- Analysis Manager does not comply with the IPv6 specification (expected to be compliant in a subsequent Patran release).

Manually Configuring Analysis Manager

These services generally should not be run as the LocalSystem!

1. Change the Log On account of the services. This step is optional but highly recommended. Under the “*Start*” menu select “*Settings | Control Panel | Administrative Tools | Services*”. Find the MSCRmtMgr_20xx and MSCQueMgr_20xx named services and right-click on each and select “Properties”. Then select the “Log On” Tab. Turn ON the “This account” toggle and then enter the non-administrator account and password that will manage the configuration. Do this for both services. Then right-click on each service and select “Stop”. Then right-click on each service and select “Start”. Now the services are running as the user/account you have chosen. Network resources such as shared folders are sometimes not accessible by the default LocalSystem account so it is necessary to change the MSCRmtMgr_20xx service account to another user if Analysis jobs access network shares via include files or any other means. The MSCQueMgr_20xx service only writes to local files in the AM install path (unless it is installed over a network share) so it isn't as sensitive to which account it runs as.
2. On all machines that will run analysis jobs (MSC Nastran, Marc, Abaqus, etc.) the Remote Manager service must be installed and started for proper communication. If some of these machines are LINUX machines, see [Analysis Manager Setup, 17](#) in [Installing on LINUX, 21](#).
3. Choose the machine that will act as the “Master Host.” On this system must install and start a Queue Manger service, which schedules analysis jobs.
4. Configure the Analysis Manager. Login to the “Master Host” machine and execute the Analysis Manager.

```
$P3_HOME/bin/p3analysis_mgr
```

 When the interface appears, double click on the Administration tree tab. You may get a message saying no configuration files exist. Ignore this! Enter an Administrator account name.
5. Choose “*Applications*” to add an application definition. This will typically be MSC Nastran, Marc, or Abaqus.
6. Choose “*Physical Hosts*” to define the machines that will run analyses (“Analysis Hosts”).
7. Choose “*AM Hosts*” to define the application paths on the physical hosts. Note that each physical host may have multiple “AM Host” definitions (i.e. one for MSC Nastran, one for Marc, one for Abaqus, or one for each different version of these programs that are to be accessible).

8. Choose “*Disk Space*”. Click on each AM Host definition under this tree tab. The defaults are `c:\tmp`. Change them if you need to. The analyses are run in these directories.
9. Save the configuration files under “*Queue | Save Config Settings*.”
10. Stop and start the Queue Manager (“*Queue | Stop/Start QueMgr*”).
11. Test the configuration by selecting “*Administration*” in the tree tab and pressing the “*Test Configuration*” button. If all the tests passed, the Analysis Manager should now be able to successfully run from within Patran.

Tutorials (Formerly Acumen)

Acumen is now known as Tutorials and is an integral part of Patran installed automatically and configured to run a standard Acumen demo (`hello_world`) from the `Help | Tutorials` menu. No external environment variables need to be set to run the `Help | Tutorials` application. The integrated Tutorial system is backwards compatible with existing Acumen applications. The `ACUMEN_HOME` environment variable can be set to `P3_HOME` or be undefined to allow the application to use the Tutorial system code. Standard Acumen environment variables as documented in Acumen manuals continue to work as advertised.

The Acumen application can still be invoked from the command prompt or the Patran desktop icon properties can be modified as such:

```
"%P3_HOME%\bin\patran" -iam MSC.ACUMEN
"%P3_HOME%\bin\patran" -iam MSC.ACUMEN_RunTime
"%P3_HOME%\bin\patran" -iam MSC.ACUMEN_RunTime -ifile aa_init.pcl
```

Note:

Patran with Acumen should always be invoked with quotes. Only if there are no spaces in the installation path, the quotes can be removed.

Documentation

The Patran documentation is a separate download from the Solution Download Center. By default, Patran accesses online help from the corporate website. If you cannot access the help from the corporate website, you must install the help locally from the installer provided on the Solution Download Center. Patran documentation exists in `$P3_HOME` in the help files directory. Both PDF and HTML versions exist. Patran’s context sensitive help system is accessed by pressing the F1 key for the currently active form. The HTML based help system should work automatically (in the `patran.pcl` file in `$P3_HOME\bin`). Check the following variables if not.

Variable	Description
<code>P3_HELP_MODE</code>	Set this to “2” to indicate the HTML helpfile system is to be used.

Variable	Description
P3_BRW_HELP	Set this to the location of the browser you wish to use, e.g., C:\Program Files\Internet Explorer\iexplore.exe
P3_HELP_DIRECTORY	Set this to the location of the HTML helpfile system, e.g., \$P3_HOME\helpfiles\html_patran\ To point to a network location on windows, see the example below. <pre>setEnv('P3_HELP_DIRECTORY','\\\\\nighthawk\product_doc\Patran\html_patran\','overwrite');</pre>

Known Limitations

Please be aware of the following limitation or requirements:

- With the Windows display set to large fonts, or with the desktop scheme set to large fonts, some forms may have spacing problems.
- As per the Windows specification frame labels appear as part of the frame, this may change button placement on user-written PCL forms when compared to LINUX.
- The history window does not have a horizontal scrollbar on Windows. To see long session commands, select them in the history window and they will appear in the command line. Use the arrow keys to scroll along the command line.
- Several window related functions available on LINUX such as Window Layering, Hide Icon, and Main Form Preferences are not applicable to the Windows environment and are not available on Windows.
- The PCL function `ui_set_fixedfont` is not available on Windows.
- Since menus and icons are dockable toolbars on Windows, F1 context sensitive help works only for application forms. Use the Help menu to access online help for toolbars.
- Diagnostics do not display to Windows Command Prompt by default. See [Command Line Arguments, 53](#) for information on the `-stdout` argument.
- CGM graphics output is not supported.

Uninstalling

To uninstall, use the Control Panel, Add/Remove Programs.

3

Installing on LINUX

- Creating a New Installation 22
- Console Installation 24
- Silent Installation 24
- Licensing Installation (Optional) 25
- Upgrading an Existing Installation 25
- Module and Preference Setup 27

Creating a New Installation

Installing using Downloaded Files

1. Login as root.
2. “cd” to a temporary directory with enough disk space. Create a subdirectory and “cd” into the subdirectory.
3. Download the delivery file from Solution Download Center. If you previously downloaded the file please proceed to the next step.
4. Execute the patran_20xx_<platform>.bin script and follow the instructions in the product installation guide for the remainder of the installation process.
5. Executing the installation script may require adding execution privilege:
 - `chmod +x install.script`
6. Cleanup: After installation is complete – you may remove the subdirectory created in Step 2 above.

Select Product to Install:

Patran is the default product to install. However, you may install one or all of the following Patran vertical products. You may rerun the installer to add, modify or delete any of these products. Only a single installation is required for all these products

Product	Description
Patran 20xx	The latest version of standard Patran.
Flightloads 20xx	The Flightloads installation is contained as part of the Patran installation. Flightloads requires both Patran 20xx and MSC Nastran 20xx. For more information about Flightloads setup, see: Flightloads and Dynamics Setup, 31

Important: Deprecated Features and License Bundles

The following features are or will be deprecated now or in a future release as indicated. Please make plans accordingly. Please contact your sales representative for available migration plans if necessary.

- AFEA, FEA, TFEA and Nastran Desktop license bundles are no longer available. Please transition to standalone products or MSCOne.
- MSC Fatigue is no longer supported. Last available version is Patran 2021.4. Please migrate to the best in class product CAEfatigue.
- Sinda preferences (and its Thermica support) is no longer supported. Last available version is Patran 2021.4. Please contact your local sales representative for alternative thermal analysis solutions.
- MSC.Nastran SOL 600 has been discontinued. Please update all nonlinear MSC.Nastran jobs to use best in class SOL 400 nonlinear solution using the Implicit Nonlinear preference.

For all products above it may be necessary to configure the setup to access the necessary solver codes. This is explained in [Analysis Preferences Setup, 27](#).

Select Setup Type:

In some instances the following installation options may be presented:

- **Full** installs all modules, options and preferences.
- **User Selectable** allows you to select which modules, options and preferences are installed. If you select custom, you will be presented with a form to select individual components. Be patient when turning on or off selectable items. Sometimes there is a noticeable delay. Do not click the mouse again until you see the toggles turn on or off.
- **Common Features** installs a reduced set of the most frequently used modules, options and preferences.
- **Client** configures a workstation to run from a central file server.

The table below lists some of the selectable items that require information from the user during installation or subsequent steps to enable full functionality access. Not all of these may be presented to you as selectable options.

Product Set	Additional Information
Analysis Preferences	See Analysis Preferences Setup, 27 .
Analysis Manager	See Analysis Manager Setup, 32 .
Documentation	See Documentation, 33 .
Flightloads	See Flightloads and Dynamics Setup, 31 .

Product Set	Additional Information
Pro/ENGINEER Access	See Pro/ENGINEER Access Setup, 28 .
Catia V4 Access	See CATDirect Setup (V4), 30 .
Catia V5 Access	See CATIA v5 Access Setup, 31 .
Patran Thermal	See Patran Thermal Setup, 31 .

When asked for Scratch Directory option to store Nastran temporary files, provide a valid directory name without spaces or special characters. The default scratch file directory is “C:\scratch”

Invoking Patran (and its verticals)

Patran and its verticals (i.e., Flightloads) can be invoked in a shell window by typing one of the following:

```
% $P3_HOME/bin/p3  
% $P3_HOME/bin/patran
```

where \$P3_HOME is the Patran installation directory. This typically might be:

```
/msc/patran/20xx
```

Console Installation

Patran also supports installation in Console mode where the installation is started from a command line in a terminal window and all the steps and messages appear in the terminal.

It is useful when GUI mode fails to initialize or a GUI environment is not available. To run in the console mode, run the installer with the following options:

```
Patran20xx_linux64.bin --mode console
```

Silent Installation

The Patran installation supports silent installations, which run in the background with no graphical interface or interaction with the desktop. Installations running in Silent mode rely on a pre-configured answer file to do the installation. Silent installations are generally used in a batch manner to facilitate installation on many machines on a network

Creating the Answer file

To create the answer file you need to run the Patran installation in Normal (GUI) or Console mode with a special switch which instructs the installation to record all of your answers in a specified answer file.

Normal Mode:

To build response file run installer with the following option:

```
Patran20xx_linux64.bin --record
```

Console Mode:

In console mode to record the response file, run installer with the following option:

```
Patran20xx_linux64.bin --mode console --record
```

In the end of installations, a response file named config.rec gets created in the directory where the Patran installation file Patran20xx_linux64.bin is located. The directory containing the Patran20xx_linux64.bin should be writing enabled (have write permissions), so that the response file config.rec can be written in it.

Running the Silent mode installation

To run installation in silent mode use the following command:

```
Patran20xx_linux64.bin --mode silent
```

The command uses the existing config.rec response file from the same directory as Patran20xx_linux64.bin.

Licensing Installation (Optional)

Patran uses FLEXlm based licensing¹. If you already have FLEXlm setup as a license server, you do not need to complete this installation.

You will need to have a FLEXlm server somewhere on your network.

To install FLEXlm:

1. Make sure you select that option when doing the initial installation or as an additional option to install in a subsequent install session. See [Creating a New Installation, 22](#).
2. For additional information see [Installing the MSC.License Server, 109](#).

Upgrading an Existing Installation

Upgrading an existing Patran installation is a manual operation and requires the following steps:

1. Follow the steps in [Creating a New Installation, 22](#). This will create a parallel Patran directory. For example,

```
/msc/patran/20xx  
/msc/patran/20yy
```

If you do not have enough disk space for parallel directories, uninstall the existing installation. But first make sure to copy the customization files listed below, however.

2. Copy the following customization files from the old installation directory to new installation:
 - p3_printers.def
 - site_setup
 - p3epilog.pcl
 - p3toolbar.def

¹ A FLEXlm Helium license server is recommended for all platforms. If your installation points to an older license server, you should install the new FLEXlm license server. If you have an older version of FLEXlm installed and need to install a newer version, please see [Uninstalling FLEXlm on LINUX](#).

- p3quickpick.def
 - settings.pcl
 - p3manger_files/*.cfg
 - p3manger_files/*/*.cfg
 - app-defaults/*
3. Copy any customized template databases from the old installation to a staging area and open each one by running Patran from the new installation. The databases will be converted to the new database schema. Once this is complete, you can copy them to the new installation area.
 4. Once the new version is successfully installed, check the files copied in the previous steps for paths that will not be correct in the new version. Generally, Patran configuration files will not contain explicit paths to other Patran directory. Site specific customizations, however, may have used explicit paths which need to be edited.

Installing 3Dconnexion SpaceMouse for Use with Patran

Patran supports the 3Dconnexion SpaceMouse Pro, SpacePilot Pro and SpaceNavigator. Follow the SpaceWare installation instructions for these products. You can obtain these instructions, as well as the latest drivers 1.8.0, from the 3Dconnexion web site, www.3dconnexion.com/.

1. Download the relevant driver for your operating system from:
<<https://www.3dconnexion.com/service/drivers.html>>.
2. From the download directory, install the driver "install-3dxunix.sh" at default location.
3. Start the driver manually using command "/etc/3DxWare/daemon/3dxsrv -d <port>" or "/etc/3DxWare/daemon/3dxsrv -userName \${USER} -d usb" before launching the Patran application.

Notes:

- You will need to restart the driver before every new SpaceMouse session.
- On Linux platforms, 3Dconnexion is not providing the latest versions of the driver. Hence on the latest Linux platforms, spacemouse driver may not work properly.
- Wireless spacemouse is not supported on the latest Linux platforms due to the fact that 3Dconnexion is not updating the OS platform support for the latest Linux releases.

The SpaceMouse automatically has translation and rotation in x, y, z turned ON.

Important:

Make sure that there exist a valid SpaceMouse configuration file (*.scg) at "\$HOME/.3dxcfg/" location. If the configuration file (*.scg) does not exist at the given location, get the file in one of the following ways:

- Copy the "Patran.scg" configuration file from P3_HOME and paste it at the "\$HOME/.3dxcfg/" location.

Or

- After launching Patran, explicitly save the SpaceMouse configuration settings through 3Dconnexion's 3DxWare dialog. It will automatically generate the configuration file (*.scg) at the "\$HOME/.3dxcfg/" location.

Module and Preference Setup

Analysis Preferences Setup

You can customize the MSC Nastran, Marc, Dytran, Abaqus, ANSYS or other 3rd party Preferences to automatically submit jobs from the Patran analysis forms. Edit the file `site_setup` in the Patran installation (`$P3_HOME`) to point to the correct location and machine name where the solver resides.

There is an entry in `site_setup` for each analysis preference, analysis module and version. The following example shows the entry for MSC Nastran¹:

```
setEnv MSCP_NASTRAN_HOST20xx LOCAL
setEnv MSCP_NASTRAN_HOST20yy LOCAL
setEnv MSCP_NASTRAN_CMD20xx /msc/bin/nast20xx
setEnv MSCP_NASTRAN_CMD20yy /msc/bin/nast20yy
setEnv MSCP_NASTRAN_SCRATCHDIR .
```

Each preference requires environment variables that define the location of external analysis executables, file types, etc. These environment variables are set by the installation program during the installation procedure. To modify these variables or set new ones, see [Environment Variables, 36](#) for information on the `site_setup` file.

Pro/ENGINEER Access Setup²

There are two methods to import Pro/ENGINEER part files. The first involves conversion to a file and does not require Pro/Engineer to run in the background. The second method imports Pro/ENGINEER part files by actually running Pro/ENGINEER in the background and executing a Pro/Toolkit program. For this reason, any Patran workstation that will access Pro/ENGINEER part files must be able to execute Pro/ENGINEER (i.e. the software must be executable and have valid licenses) using this method.

1. During the Patran installation, you will be prompted for the command to run your Pro/ENGINEER software. Enter the path in the dialog box, for example:

```
/bin/proe
```

2. Next, you need to configure Patran for use with WildFire 3 and earlier, or WildFire 4. This will configure the `MSCP_PROE_PREWF4` environment variable for your installation. Please see the table below for the correct setting for your version of Pro/E:

Table 3-1

For WildFire 3 or earlier	YES
For WildFire 4	NO

If you do not know the location of your Pro/E installation or version, you can change or add the environment variables in `site_setup` after you have finished the installation: The two environment variables are:

```
MSCP_PROE_CMD=/dev1/Proe/Wildfire40/UNIX/bin/proe1
```

and

```
MSCP_PROE_PREWF4=YES or NO
```

¹ The version of a particular analysis code that is run is dependent on the actual path and location of the executable set with these environment variables and not the name of the variable. For example, the `MSCP_NASTRAN_CMD20xx` can point to the MSC Nastran version 20yy executable and the 20yy version will run even though the version is set to 20xx in Patran.

² A Pro/ENGINEER installation is no longer needed if you use the Import to parasolid feature to import your Pro/E files.

Typically this environment variable is set the `site_setup` file. See [Environment Variables, 36](#) for additional information.

The following notes are applicable to the Import to Native Patran Geometry method:

The Pro/ENGINEER Wildfire release introduced the following platform changes:

- Existing Patran translator is still available for pre-Pro/ENGINEER Wildfire release.

The following is necessary for customers to use the Patran Pro/ENGINEER translator with Pro/ENGINEER after January, 2004:

- PTC Important System Notice - Timeout <http://www.ptc.com/go/timeout/>

For Pro/ENGINEER 2001:

- Download NMSD.exe and follow PTC instructions.

For Pro/ENGINEER Wildfire:

- Download NMSD.exe and follow PTC instructions.
- Download wildfire datecode 2003490 and follow PTC instructions.

Pro/ENGINEER Wildfire 3.0/4.0

- Linux is supported for Import to Parasolid
- The `p3_ProE` and `p3_ProENGINEER` executables are built using Pro/ENGINEER version 2000i and therefore will not work with earlier versions of Pro/ENGINEER.

Running Patran Pro/ENGINEER Access Remotely

You may convert a Pro/ENGINEER part file into a `.geo` file outside of Patran by running the `p3_proengineer` executable directly. This must be done on a system with Pro/ENGINEER installed and requires a FLEXlm license for Pro/ENGINEER Access.

1. Set the `MSCP_PROE_CMD` environment variable. You may already have this set in the `$P3_HOME/site_setup` file (see [Environment Variables, 36](#) for additional information).

```
% setenv MSCP_PROE_CMD /usr/bin/pro
```
2. Execute the `p3_proengineer` script from the Patran installation.

It is possible to create an installation that contains only the Pro/ENGINEER Access (by selecting only Pro/ENGINEER Access in the installation program). You may not, however, simply copy the following script since it requires files included in the installation.

```
% $P3_HOME/bin/p3_proengineer +prt<partfile> pro_wait
```

Windows syntax:

For additional information on Patran Pro/ENGINEER Access on Windows, see [Pro/ENGINEER Access Setup, 14](#)

CATDirect Setup (V4)

CATDirect directly imports CATIA v4 models by spawning the CATIA software in the background. For this reason, both CATIA v4 and CATDirect must be available on the same network, and the correct CATIA environment variables must be set. See [Environment Variables, 36](#) for additional information on CATDirect environment variables.

Running CATDirect Remotely

If you do not have access to CATIA on the same network or workstation as Patran, the CATDirect executables can be installed on the CATIA workstation. These executables generate intermediate Express Neutral files. The Express Neutral file can be imported into Patran on systems which do not have CATIA installed.

The following steps install the CATDirect executables on a CATIA workstation without a local installation of Patran

1. Create an installation directory (`$P3_HOME`) on the CATIA workstation with `bin` and `bin/exe` subdirectories. For example:

```
# mkdir /msc/patranxxxx (/msc/patranxxx = $P3_HOME)
# mkdir $P3_HOME/bin
# mkdir $P3_HOME/bin/exe
```

2. Copy the following Patran CATDirect wrapper links from the Patran installation to the corresponding subdirectories created in step #1.

```
$P3_HOME/site_setup
$P3_HOME/bin/.wrapper
$P3_HOME/bin/p3_catia_express
$P3_HOME/bin/p3_CATIA_EXPRESS
$P3_HOME/bin/exe/p3_catia_express
$P3_HOME/bin/exe/p3_CATIA_EXPRESS
```

3. Add the CATIA environment variables to the new `site_setup` file on the CATIA workstation.

```
# setEnv CAT_UNLOAD /usr/catia/unload
# setEnv CATIA /usr/catia/cfg
# setEnv CAT_CUST ~catadm
# setEnv CATMSTR ~catusr/USRENV.dcls
# setEnv MSCP_CATIA_LANG en_US
# setEnv CATIA_TMP_DIR /tmp
```

For additional information on these variables, see [Environment Variables, 36](#).

4. Edit the local `USRENV.dcls` file (the one referenced by the `CATMSTR` environment variable) with the following lines:

```
alias PATRAN_T =
catia.model='/tmp' ;
```

Where `/tmp` is the directory referenced by the `CATIA_TMP_DIR` environment variable.

5. Run `p3_catia_express` on the CATIA workstation to generate an Express neutral file:

```
% $P3_HOME/bin/p3_catia_express <model_name> -
fsp/<model_directory_path> -t
```

The “-t” option specifies a ASCII Express Neutral file (`*.exp`). Without this option a binary file (`*.bexp`) will be generated. Both types of files can be imported into Patran using “File|Import|Express Neutral File”.

CATIA v5 Access Setup

The CATIA v5 Access product is installed from the installation program. This single installation script will install CATDirect, CATIA v4 to , and the CATIA v5 to parasolid products.

- The setup will add the following variables to the `site_setup` file for Catia V5 runtime support when you install Catia Access for Windows.

```
# setEnv CATIAV5DIR $P3_HOME/lib/lib3dx
# setEnv CATIAPlat aix_a
# setEnv CATInstallPath $CATIAV5DIR/$CATIAPlat
# setEnv CATDLLPath $CATIAV5DIR/$CATIAPlat/code/bin
# setEnv CATICPath $CATIAV5DIR/$CATIAPlat/code/productIC
# setEnv CATCommandPath $CATIAV5DIR/$CATIAPlat/code/command
# setEnv CATDictionaryPath $CATIAV5DIR/$CATIAPlat/code/dictionary
# setEnv CATReffilesPath $CATIAV5DIR/$CATIAPlat/reffiles
# setEnv CATFontPath $CATIAV5DIR/$CATIAPlat/resources/fonts
# setEnv CATGraphicPath $CATIAV5DIR/$CATIAPlat/resources/graphic
# setEnv CATMsgCatalogPath $CATIAV5DIR/$CATIAPlat/resources/msgcatalog
```

For additional information on these variables, see [Environment Variables, 36](#).

Patran Thermal Setup

The only supported compilers¹ for Patran Thermal are listed in [Table 5-5 in Linux Requirements, 83](#)

General Installation Notes

If the compilers are installed prior to the installation of Patran Thermal then the Patran installation wizard automatically modifies the scripts which specify the location of the compilers. If compilers are not installed prior to the installation of Patran Thermal a warning is issued that the compilers need to be installed before the Patran Thermal module can be used.

Flightloads and Dynamics Setup

FlightLoads and Dynamics supports separate “interactive” and “batch” locations of the MSC Nastran executable. Interactive MSC Nastran is used for spline verify, aero model import and loads extraction from aerodynamic/aeroelastic databases. Batch MSC Nastran is used for running analyses.

1. Edit `site_setup` in the Patran `$P3_HOME` directory. Set the `MSCP_FLDS_MSG_FILE` environment variable to point to `$P3_HOME/flds.msg`:


```
% setEnv MSCP_FLDS_MSG_FILE $P3_HOME/flds.msg
```
2. Set the `MSCP_NASTRAN_CMD20xx` environment variable to point to the MSC Nastran executable for batch processes (and for non-MSC.Flightloads MSC Nastran analysis):


```
% setEnv MSCP_NASTRAN_CMD20xx /tmp_mnt/msc/bin/nast20xx
```
3. Start Patran with one of the following commands:

```
% $P3_HOME/bin/patran -ifile init fld.pcl
```

¹Compilers are only necessary for Patran Thermal runs where user subroutines are necessary to be compiled and linked into a new dynamic linked library (SO). Once the SO exists, Patran Thermal runs with no dependency on any compilers.

```
% $P3_HOME/bin/p3      -ifile init_fld.pcl
% $P3_HOME/bin/p3fld
```

Substitute `$P3_HOME` with the actual installation directory path.

Analysis Manager Setup

Below is a brief overview of the process for installing and configuring the Analysis Manager or a typical, standard installation, assuming it has been unloaded properly.

1. On all machines that will run analysis jobs (MSC Nastran, Marc, Abaqus, etc.), login to each and start a Remote Manager. This requires that you install using the installation program (or the installation directory `$P3_HOME` must be “seen”) on each machine. The Remote Manager daemon must be run on all “Analysis Hosts” for proper communication. This daemon should not be run as root! If some of these machines are Windows machines, see [Analysis Manager Setup, 17](#) in [Installing on Microsoft Windows, 5](#).

```
$P3_HOME/bin/RmtMgr -path $P3_HOME
```

2. Choose the machine that will act as the “Master Host.” This system will run the Queue Manger daemon, which schedules analysis jobs. Login to this machine and execute the administration utility.

```
$P3_HOME/bin/p3am_admin $P3_HOME
```

When the interface appears, enter an administration user. It is not necessary to be root to do this, but it should be the administrator of the Analysis Manager configuration file. The configuration files will be owned by this user.

3. Choose “*Modify Config Files | Applications*” to add an application definition. This will typically be MSC Nastran, Marc, or Abaqus.
4. Choose “*Modify Config Files | Physical Hosts*” to define the machines that will run analyses (“Analysis Hosts”).
5. Choose “*Modify Config Files | A/M Hosts*” to define the application paths on the physical hosts. Note that each physical host may have multiple “A/M Host” definitions (i.e. one for MSC Nastran, one for Marc, one for Abaqus, or one for each different version of these programs that are to be accessible).
6. Choose “*Modify Config Files | Filesystems*” to define a filesystem directory for each A/M Host. The defaults are `/tmp`. The analyses are run in these directories. Press the Apply button to save the configuration files.
7. Test the configuration by selecting “*Test Configuration*” for each of the objects.
8. Select “*Queue Manager*” and start the Queue Manager daemon. If all the tests passed, the Analysis Manager should now be able to successfully run from within Patran.

Tutorials (Formerly Acumen)

Acumen is now known as Tutorials and is an integral part of Patran installed automatically and configured to run a standard Acumen demo (`hello_world`) from the Help | Tutorials menu. No external environment variables need to be set to run the Help | Tutorials application. The integrated Tutorial system is backwards compatible with existing Acumen applications. The `ACUMEN_HOME` environment variable can be set to

P3_HOME or be undefined to allow the application to use the Tutorial system code. Standard Acumen environment variables as documented in Acumen manuals continue to work as advertised.

The Acumen application can still be invoked from the command prompt or the Patran desktop icon properties can be modified as such:

```
$P3_HOME\bin\patran -iam MSC.ACUMEN
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime
$P3_HOME\bin\patran -iam MSC.ACUMEN_RunTime -ifile aa_init.pcl
```

Documentation

Patran documentation exists in \$P3_HOME in the helpfiles directory. Both PDF and HTML versions exist. The latest available documentation for MSC Nastran and Marc are also available in PDF format if unloaded from the delivery media.

Patran's context sensitive help system is accessed by pressing the F1 key for the currently active form. In order for the HTML based help system to work properly, the following variables must be set (check the site_setup.pm file in \$P3_HOME):

Variable	Description
P3_HELP_MODE	Set this to "2" to indicate the HTML helpfile system is to be used.
P3_BRW_HELP	Set this to the location of the browser you wish to use, e.g., /tools/bin/netscape
P3_HELP_DIRECTORY	Set this to the location of the HTML helpfile system, e.g., \$P3_HOME/helpfiles/html_patran

4

User Environment

- Environment Variables 36
- LINUX Application Resources and Fonts 45
- LINUX Window Manager Settings 46
- The *.pcl and *.def Setup Files 47
- Command Line Arguments 53
- LINUX Shell Resource Limits 56
- The PDB Database System 57

Environment Variables

LINUX Environment Variables

The file `site_setup`, located in the installation directory, provides a central file for setting environment variables. The file is a standard Bourne shell script that is included in the Patran run shell when you execute Patran.

You can enter any standard Bourne shell command in this file. You can also set environment variables in this file using the `setEnv` command. The Patran startup script interprets this as the proper environment variable command for your current shell (i.e. Bourne or Korn shell). For example, to set the path for MSC Nastran 20xx to `/msc/msc20xx/bin/nastran`, add the following line to `site_setup`:

```
% setEnv MSCP_NASTRAN_CMD20xx /msc/msc20xx/bin/nastran
```

This is equivalent to setting the `cshell` variable:

```
% setenv MSCP_NASTRAN_CMD20xx /msc/msc20xx/bin/nastran
```

Available environment variables are listed in [Table 4-1](#). Note that some variables are specific to LINUX or to Windows. This is noted in the table.

Windows Environment Variables

Patran on Windows supports most of the same environment variables as the LINUX versions. To set environment variables, use Control Panel\System\Environment. You can use Windows Command Prompt to define a variable or the `site_setup.pm` file.

Setting environment variables on the Windows Command Prompt uses the `set` command. The table lists examples in LINUX form (using `setenv`). For example the following LINUX command:

```
% setenv MSC_LICENSE_FILE /msc/msc_licensing/licenses/license.dat
```

is equivalent to the following `set` command on Windows:

```
> set MSC_LICENSE_FILE=%P3_HOME%\msc_licensing\licenses\license.dat
```

Environment variables are listed in [Table 4-1](#). Note that some variables are specific to LINUX or to Windows. Application variables are replaced on Windows by the `P3_TRANS.INI` file. See [Analysis Preferences Setup, 12](#) for more information.

Site and User Setup Files

On Windows, the `site_setup.pm` and `user_setup.pm` files can be used to set environment variables and paths specifically for Patran. Site setup sets variables and paths at the Patran installation level. These changes affect all Patran users working with this installation. User setup sets variables and paths at the user account level. The files are read in this order:

1. `site_setup.pm`
2. `user_setup.pm`

Any variables or paths that are set in `user_setup.pm` will take priority over variables or paths set in `site_setup.pm`.

The `site_setup.pm` file can be used to set paths and environment variables for Patran at the installation level. An example of the syntax for the `site_setup.pm` is shown below:

```
setEnv('MSC_LICENSE_FILE', '27500@license_server1;  
27500@license_server2');
```

The `user_setup.pm` file resides in your home directory and can be used to set environment variables for individual users. The settings in the `user_setup.pm` file override settings in the `site_setup.pm` file. The `user_setup.pm` file uses the same syntax as the `site_setup.pm` file.

Normally environment settings take higher priority than `site_setup.pm` and/or `user_setup.pm`. An `overwrite` flag can be used to overwrite an environment variable set at the system level. When used in `site_setup.pm` or `user_setup.pm`, the `overwrite` flag forces Patran to use the environment variable value that you have set even if it was previously defined by the system.

```
setEnv('MSC_LICENSE_FILE', '27500@license_server1;  
27500@license_server2', 'overwrite');
```

If the `overwrite` flag is used in `user_setup.pm` and in `site_setup.pm` for the same variable or path, the setting in `user_setup.pm` will take priority.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
MSCP_[app]_HOST <hostname> or MSCP_[app]_HOST[Version] <hostname>	LINUX	See Analysis Preferences Setup, 12 for Windows equivalent. Sets the name of the host on which to execute the given application, [app]. The NASTRAN and MARC variables additionally allow the specification of a different host for each version. For example, to set MSC Nastran Version 20xx to run on a machine called “alpha”: <code>setenv MSCP_NASTRAN_HOST20xx alpha</code> For a complete listing of application variables see the default <code>site_setup</code> file.
MSCP_[app]_CMD[vers] <command>	LINUX	See Analysis Preferences Setup, 12 for Windows equivalent. Sets the command path for the application [app]. Some applications may allow Patran to call multiple versions. For example, if MSC Nastran 20xx is located in <code>/msc/bin/nast20xx</code> on the host defined by <code>MSCP_NASTRAN_HOST</code> : <code>setenv MSCP_NASTRAN_CMD20xx /msc/bin/nast20xx</code> For a complete listing of application variables see the default <code>site_setup</code> file.
MSCP_[app]_SCRATCHDIR <dir>	LINUX	See Analysis Preferences Setup, 12 for Windows equivalent. Sets the scratch directory for application, [app]. Default is <code>/tmp</code> . For example, to use <code>/msc/tmp</code> as scratch for MSC Nastran: <code>setenv MSCP_NASTRAN_SCRATCHDIR /msc/tmp</code> For a complete listing of application variables see the default <code>site_setup</code> file.
NASTRAN_VERSION <ver>	LINUX	See Analysis Preferences Setup, 12 for Windows equivalent. Sets the default MSC Nastran version on the Preference translation parameters form.
MSCP_FLDS_MSG_FILE <file>	LINUX Windows	Sets the path and file name for the MSC.Flightloads message file. See Flightloads and Dynamics Setup, 31 for additional information.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
PARAM_POST_OP2	LINUX Windows	Set this to any integer value and if the OP2 toggle is set ON in the Results Format form for the various Solution Parameters of an MSC Nastran analysis, then a PARAM,POST,<integer> will be written to the MSC Nastran input deck.
MSCP_PROE_CMD	Windows	The location of your Pro/ENGINEER installation: <code>setenv('MSCP_PROE_CMD=/bin/proe')</code>
MSCP_PROE_PREWF4	Windows	If you intend to use WildFire 3 or earlier with Patran you need to set the environment variable: <code>setenv('MSCP_PROE_PREWF4','yes or no')</code>
CAT_UNLOAD <dir>	Windows	Sets the directory where CATIA is unloaded for use by Patran CATDirect Access. Default is <code>/usr/catia/unload</code> .
CATIA <dir>	Windows	Sets the directory where CATIA configuration files are located for use by Patran CATDirect Access. Default is <code>/usr/catia/cfg</code> .
CAT_CUST ~<username>	Windows	Sets the CATIA administrator's account for use by Patran CATDirect Access. Default is <code>~catadm</code> .
CATMSTR <declaration_file>	Windows	Sets the CATIA user declaration file to be used by Patran CATDirect Access. Default is <code>\$HOME/USRENV.dcls</code> .
MSCP_CATIA_LANG <language>	Windows	Sets the CATIA language to be used by Patran CATDirect Access. Default is <code>en_US</code> .
CATIA_TMP_DIR <dir>	Windows	Set the default scratch directory for CATDirect Access.
CATIAV5DIR	Windows	Sets the Directory where CATIA v5 run-time libraries are located.
CATIAPlat	Windows	For use by Patran CATDirect v5 Access.
CATInstallPath	Windows	For use by Patran CATDirect v5 Access.
CATDLLPath	Windows	For use by Patran CATDirect v5 Access.
CATICPath	Windows	For use by Patran CATDirect v5 Access.
CATCommandPath	Windows	For use by Patran CATDirect v5 Access.
CATDictionaryPath	Windows	For use by Patran CATDirect v5 Access.
CATReffilesPath	Windows	For use by Patran CATDirect v5 Access.
CATFontPath	Windows	For use by Patran CATDirect v5 Access.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
CATGraphicPath	Windows	For use by Patran CATDirect v5 Access.
CATMsgCatalogPath	Windows	For use by Patran CATDirect v5 Access.
P3_PORT <port_num> P3_MASTER <hostname> P3_PLATFORM <platform> P3_ORG <org_name>	LINUX	Sets QueMgr definitions. For more information see Organization Environment Variables (p. 92) in the <i>Patran Analysis Manager User's Guide</i> . Applicable to LINUX installations only.
P3CONVERTxxxx_TEMPLATE	LINUX Windows	Patran v2001 and later reference the template database to convert databases from earlier versions. Since the Patran PAMCRASH, and LSDYNA3D require custom template databases (see Creating Custom Template Databases, 58), these variables allow the custom database to be referenced. See Patran Custom Database Conversion, 60 for additional information. The valid values of xxxx are 2003, 2003R2, 2004R2, 2005, 2005R2, 2006 thru 2023, the default being P3CONVERT2012_TEMPLATE.
P3_HELP_MODE	LINUX Windows	Specifies Patran to use the HTML help system.
P3_BRW_HELP	LINUX Windows	Specifies the location of the HTML Browser for the context sensitive HTML help, e.g., c:\Program Files\Internet Explorer\iexplore.exe

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
P3_HELP_DIRECTORY	LINUX Windows	<p>Specifies the location of the HTML help files directory, e.g., \$P3_HOME/helpfiles/html_patran/</p> <p>When this variable is not set, the default set of help files from the corporate website are accessed:</p> <p><code>http://www.mssoftware.com/patran/current/html_patran/</code></p> <p>For other sets of documentation, set your P3_HELP_DIRECTORY environment variable to:</p> <p><code>http://www.mssoftware.com/patran/patran_xxxx/html_patran/</code></p> <p>where valid values of xxxx are 2005r2, 2005r3, 2007, 2008r1, 2008r2, 2010, 2010_2, 2011, 2012, 2012_2, 2013, 2014, 2014_1, 2016, 2017, 2018, 2019, 2019fp1, 2020, 2021, 2021_1, 2021_2, 2021_3, 2021_4, 2022_1, 2022_2, 2022_3, and 2022_4.</p>
PDB_C_CACHE_SIZE <bytes> PDB_C_CACHE_SIZE AUTO PDB_C_CACHE_SIZE AUTO<%>	LINUX Windows	<p>Specifies the maximum amount of virtual memory the Patran database system (PDB) will access. Set this value prior to executing Patran.</p> <pre>setenv PDB_C_CACHE_SIZE 786432000</pre> <ul style="list-style-type: none"> For 32 bit, the minimum allowable value is 10MB (10485760) and the maximum allowable value is 2GB (2097152000). The default value is 'AUTO'. With the default setting AUTO, Patran sets the PDB_C_CACHE_SIZE value to be 75% of total RAM of the machine. If you want that percentage to be changed, specify a percentage after the AUTO (e.g. AUTO90 or AUTO70). For 64 bit, the minimum allowable value is 75% of total RAM of the machine and the maximum allowable value is virtually unlimited as 64 bit memory address space is used. <p>PDB_C_CACHE_SIZE=AUTO does not work for large models. Hence, an appropriate value of PDB_C_CACHE_SIZE is required to be set manually. For additional information see Patran Database Caching and Swapping, 59.</p>

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
PDB_C_SWAP_DIR <dir>	LINUX Windows	Specifies the locally mounted directory in which a scratch/swap file is to be allocated, if necessary. The setting of this value only takes effect before swapping starts. The default is NULL, which causes the value stored in the LINUX TMPDIR environment variable, or the value stored in the Windows TMP environment variable to be used if they are set. For additional information see Patran Database Caching and Swapping, 59 .
PDF_LOCKING_DISABLED <yes/no>	LINUX Windows	Disables file locking on a database. With file locking enabled (the default), only one Patran process may access the database at once. The default is "No".
MSC_LICENSE_FILE <port@hostname> MSC_LICENSE_FILE <license_file_path>	LINUX Windows	Sets the location of the license.dat file or the port address for the license server for FLEXlm licensing of Patran products. If not set, Patran will look in /msc/msc_licensing/licenses/license.dat. setenv MSC_LICENSE_FILE 1011@alpha1 setenv MSC_LICENSE_FILE /msc/msc_licensing/licensing/license.dat
NIFIMP_SAMEIDOK_MPC_ELEM	LINUX Windows	Setting this environment variable to "yes" avoids checking for conflicting IDS between MPC and (Element + Connectors).
FLEXLM_DIAGNOSTICS <value>	LINUX Windows	Sets Patran licensing into a diagnostic mode. Setting a value=3 prints out diagnostic information including license file location or license server name and port. On LINUX data is written to stdout. On Windows data is written to a file called flexnnn.log setenv FLEXLM_DIAGNOSTICS 3
HOMEDRIVE <x:> HOMEPATH <dir>	Windows	Sets the home drive and directory for the current user. Patran will write files (e.g. patran.ses) to this directory if run from the Start menu or icon. If run from a Windows Command Prompt, these files will be written to the current directory. set HOMEDRIVE=d: set HOMEPATH=\users\me

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
P3_ENABLE_NFS_DB_ACCESS <yes/no>	LINUX	Applicable only when accessing Patran v7.6 or earlier databases. Sets InterBase NFS Access option on or off. If set to yes, the “Enable NFS Access” will be on by default on the File/New and File/Open forms. <code>setenv P3_ENABLE_NFS_DB_ACCESS yes</code>
TMP <dir>	LINUX Windows	Sets the directory used by InterBase for scratch. Applicable only when accessing Patran v7.6 or earlier databases. Default is /tmp: <code>setenv TMP /tmp</code>
TMPDIR <dir>	LINUX Windows	A standard LINUX or Windows variable. Used by Patran to determine the location for PDB scratch files. <code>setenv TMPDIR /tmp</code> For additional information see Patran Database Caching and Swapping, 59 .
ABAQUS_DRA_UPGRADE_ODB	LINUX Windows	If an older version of an Abaqus ODB results file is accessed than the currently supported version, this variable allows automatic conversion. It must be set to YES. The file can also be converted using Abaqus.
P3_mainFont <main_font>	LINUX	Sets the main font for menu windows. Can also be set with an application resource file. See LINUX Application Resources and Fonts, 45 for more details. <code>setenv P3_mainFont 9x15bold</code>
P3_textFont <text_font>	LINUX	Sets font used for databox text. See above.
P3_spreadFont <spread_font>	LINUX	Sets font used in spreadsheets. See above.
MSC_SX_HOME	Windows	If this variable is set to the directory path/location of a valid local installation of SimXpert, then SimXpert can be launched from Patran via the File pulldown menu and model data can be imported through the Analysis application using the MSC Nastran preference.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
DRANAS_NAST_MEM	LINUX Windows	Defines the memory for Nastran Server. Sometimes, Patran cannot attach to a large Nastran database due to the insufficient open core memory in Nastran Server. In such cases, increasing the value of the variable may solve the problem. For example, "DRANAS_NAST_MEM=2048MB"
MSCP_NIFIMP_BLOCKCOUNT	LINUX Windows	<p>When large bdf files are imported into Patran, Nastran may issue following error when it cannot expand the DBALL/MASTER files beyond certain size.</p> <p>*** USER FATAL MESSAGE 1012 (GALLOC)</p> <p>DBSET MASTER IS FULL AND NEEDS TO BE EXPANDED.</p> <p>USER ACTION: SEE THE MSC.NASTRAN CONFIGURATION AND OPERATIONS GUIDE OR KB8012329 ON THE MSC WEB SITE FOR METHODS TO MAKE LARGER DATABASES. BIOMSG: ERROR 4276 HAS OCCURRED IN ROUTINE GALLOC , FILE INDEX = 0</p> <p>In this event, set the environment variable MSCP_NIFIMP_BLOCKCOUNT to a value higher than the default value of 300000, then rerun Patran and import the file.</p>
MT_HEARTBEAT	LINUX	Setting MT_HEARTBEAT=1 improves the performance issues of form switching in LINUX KDE and GNOME window managers.

Table 4-1 Patran Environment Variables

Variable	OS	Purpose
HTML_TEXT_ENCODING	LINUX Windows	<p>This variable displays correct character sets in the HTML widget. QT's Web Engine module usually detects the appropriate character set encoding, through the meta header information in the HTML files/content. But if it fails to display the characters correctly, setting this variable enforces the Web Engine to set the required encoding and display the characters correctly.</p> <p>Example:</p> <pre>set HTML_TEXT_ENCODING=UTF-8 set HTML_TEXT_ENCODING=SHIFT-JIS</pre>

Note:

1. The MSC_MEM environment variable for setting Patran memory is not valid any more. The memory set in local rcf file is also not recognized by Patran and it uses the default memory (350 MB). To increase Patran memory use either MSCP_NIFIMP_BLOCKCOUNT or DRANAS_NAST_MEM. If both are set together then DRANAS_NAST_MEM overwrites MSCP_NIFIMP_BLOCKCOUNT.
2. AcommandNasServer and MSCP_NASTRAN_SERVER environment variables for setting the path for Nastran Server on Windows and Linux respectively, will not be applicable from Patran 2017 release.

LINUX Application Resources and Fonts

Important: The following information on font and color settings applies only to LINUX installations. Patran on Windows uses settings as per Control Panel\Display\Settings\Advanced.

Patran uses application resources files (listed in [Table 4-2](#)) to define the required set of X resources. These resources include an optimal color scheme, default window locations and appropriate font sizes. The Patran installation program provides these resource files, and automatically places them under the \$P3_HOME/app-defaults directory when you execute the installation program.

Table 4-2 Patran Application Resource Files

Patran Application or Module	Application Resource File*
Analysis Manager	P3Mgr
Patran	Patran

* All Patran application resource files are located under the directory, `$P3_HOME/app-defaults` but can be placed in a user's home directory for customization.

Changing Patran Form Fonts

The following procedure changes the fonts used in Patran forms.

1. Select an available font. Use the `xlsfonts` utility to list the available fonts.

```
xlsfonts | more
```

2. Modify the Patran application resources file (see [LINUX Application Resources and Fonts, 45](#) above) uncommenting and editing the following line:

```
Patran*mainFont: <menus, forms, etc. font>
Patran*textFont: <text box font>
Patran*spreadFont: <spreadsheet font>
```

For example:

```
Patran*mainFont: 8x16
Patran*textFont: helvr12
Patran*spreadFont: 8x16
```

Alternatively, fonts can be specified at the command line using the `-fn`, `-tfn`, and `-sfn` options. See [Command Line Arguments, 53](#) for additional information.

3. Restart Patran.

LINUX Window Manager Settings

The following window manager settings will provide optimal mouse performance within Patran.

Gnome

1. Click with the middle mouse button on the desktop and choose Gnome Apps/Settings/Desktop/Window Manager from the resulting menus.
2. In the left panel of the resulting form, choose Desktop/Window Manager/Run Configuration Tool for Enlightenment.
3. Set the Keyboard Focus to *Sloppy Pointer*.

KDE

1. Open the KDE Control Panel.

2. Turn off *Display content resizing windows*.
3. Set the Focus Policy to *Classic sloppy focus*.

The *.pcl and *.def Setup Files

Patran's various customization files are applicable to both LINUX and Windows installations unless otherwise noted.

The settings.pcl File

The `settings.pcl` file contains parameters that Patran uses at start-up. All entries are PCL commands and use the format:

```
pref_env_set_<datatype>( "<variable>", "<setting>" )
```

Patran searches for a `settings.pcl` in the following order: current working directory, users home directory (login directory on LINUX, and home directory as defined by the user profile or HOMEDRIVE:HOMEPATH on Windows), and finally in \$P3_HOME.

If it does not find a `settings.pcl` file, it creates the file in the working directory. Users may wish to copy this file to their home directory.

Note: The `settings.pcl` file in the Patran installation directory is read only. If you want to modify the `settings.pcl` file in the installation directory, you will need to change permissions on the file to make it read/write.

Hexagon recommends that users modify a file created by Patran since the format is very specific. Important variables and settings are listed in [Table 4-3](#). For example, a proper setting to turn on hardware graphics would be:

```
pref_env_set_string( "graphics_hardware", "YES" )
```

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
<code>graphics_hardware</code>	string: YES/NO	Turns on or off use of hardware graphics. See TCP/IP Requirements, 82
<code>graphics_colors</code>	integer: 64<val<256	Number of Xwindow colormap colors Patran will use, if not capable of running in fullcolor mode.
<code>graphics_refresh</code>	string: YES/NO	If set to YES, Patran will automatically refresh the viewport when it changes. This is useful on systems that do not have backing store capability.
<code>ToolbarHeight</code>	real: 0<val<1	Height of the icon toolbar. Set automatically.
<code>ApplSwitchHeight</code>	real: 0<val<1	Height of form switch area. Set automatically.

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
VisibleHistoryItems	integer: 1<val<80	Size of history window in lines.
pick_rectpoly	integer: 1,2,3	Whether you enclose the entire entity (1), its centroid(2), or a portion of the entity(3).
show_cycle_picking_form	logical: TRUE/FALSE	Causes Patran to display a cycle clicking box when select databoxes are active.
entity_picking_cursor	string: holeangle xhole +hole + x	Defines cursor type for selecting when select databoxes are active. Typically this is set using the Preferences Picking form.
select_menu_always_on_top	logical: TRUE/FALSE	Causes the select menu to always float above all other forms. <i>This must be set to "FALSE" on Windows installations. Otherwise, users will not be able to type into select list boxes.</i>
DefaultMeshSize	real	Sets the default value for "Global Edge Length" on the Finite Element Create forms in Patran.
SmallScreenLayout	logical: TRUE/FALSE	A TRUE setting invokes Patran in a layout suitable for 1024x768 displays. This variable is not automatically created in the settings.pcl file and must be entered by hand. Default is FALSE.
NastranCardFormat	String: Either Small Large	Sets the default for determining whether real numbers are written to a standard (8 character) NASTRAN field (Small) or to a double (16 character) NASTRAN field (Large). If Either is set, the precision necessary will determine whether an 8 or 16 character field is used. This simply sets the default as it appears on the Translation Parameters form for the MSC Nastran Preference. See Section 3.2 Translation Parameters (MSC Nastran Structural Guide).
NastranResultsOutput	string: XDB Only XDB and Print OP2 Only OP2 and Print Print Only None	This variable is obsolete and has been superceded by the NASTRAN_XXX_DATA_OUTPUT variables. Please see the table below for more information. Defines the default results file format type for the MSC Nastran Preference. This can be changed from within Patran sessions. The default is "XDB and Print".

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
VisibleHistoryItems	integer: 1<val<80	Size of history window in lines.
pick_rectpoly	integer: 1,2,3	Whether you enclose the entire entity (1), its centroid(2), or a portion of the entity(3).
show_cycle_picking_form	logical: TRUE/FALSE	Causes Patran to display a cycle clicking box when select databoxes are active.
entity_picking_cursor	string: holeangle xhole +hole + x	Defines cursor type for selecting when select databoxes are active. Typically this is set using the Preferences Picking form.
select_menu_always_on_top	logical: TRUE/FALSE	Causes the select menu to always float above all other forms. <i>This must be set to "FALSE" on Windows installations. Otherwise, users will not be able to type into select list boxes.</i>
DefaultMeshSize	real	Sets the default value for "Global Edge Length" on the Finite Element Create forms in Patran.
SmallScreenLayout	logical: TRUE/FALSE	A TRUE setting invokes Patran in a layout suitable for 1024x768 displays. This variable is not automatically created in the settings.pcl file and must be entered by hand. Default is FALSE.
NastranCardFormat	String: Either Small Large	Sets the default for determining whether real numbers are written to a standard (8 character) NASTRAN field (Small) or to a double (16 character) NASTRAN field (Large). If Either is set, the precision necessary will determine whether an 8 or 16 character field is used. This simply sets the default as it appears on the Translation Parameters form for the MSC Nastran Preference. See Section 3.2 Translation Parameters (MSC Nastran Structural Guide).
NastranResultsOutput	string: XDB Only XDB and Print OP2 Only OP2 and Print Print Only None	This variable is obsolete and has been superceded by the NASTRAN_XXX_DATA_OUTPUT variables. Please see the table below for more information. Defines the default results file format type for the MSC Nastran Preference. This can be changed from within Patran sessions. The default is "XDB and Print".

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
PAT3NAS_MAX_REPEATED_MESSAGES	Integer	For the Nastran Preference translator, this limits the number of unique informational, warning, or error messages displayed. By default any unique message repeated more than 10 times will be suppressed. To change this, please use this setting. To completely suppress all messages, set this to zero (0).
NASTRAN_101_DATA_OUTPUT	XDB+PRINT	For more information on setting the Nastran Results Output, please see, Nastran Results Output, 52 .
NASTRAN_200_DATA_OUTPUT	OP2+PRINT+PUNCH	These settings.pcl parameters are formulated like this:
NASTRAN_400_DATA_OUTPUT	MASTER+DBALL_OP2	<pre>pref_env_set_string("NASTRAN_XXX_DATA_OUTPUT", value)</pre> <p>where XXX is the solution sequence number and value is some combination of the values "OP2", "XDB", "PRINT", "PUNCH", "MASTER", "DBALL" concatenated by a "+". Examples:</p> <pre>pref_env_set_string("NASTRAN_101_DATA_OUTPUT", "XDB+PRINT") pref_env_set_string("NASTRAN_200_DATA_OUTPUT", "OP2+PRINT+PUNCH") pref_env_set_string("NASTRAN_400_DATA_OUTPUT", "MASTER+DBALL_OP2 ")</pre>
PARAM_POST_OP2	integer	Set this to any integer value and if the OP2 toggle is set ON in the Results Format form for the various Solution Parameters of an MSC Nastran analysis, then a PARAM,POST,<integer> will be written to the MSC Nastran input deck. If an environment variable of the same name also is set, the environment variable setting will take precedent.
xor_highlighting_enabled	logical: TRUE/FALSE	Turns on or off pre-selection entity highlighting when the cursor passes over that entity in the viewport. the default is TRUE.
preselection_line_width	integer	Sets the width of pre-selection highlighting graphics. The default is 3.

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
result_quick_avg_method	string: DeriveAverage AverageDerive Difference Sum	Changes the default averaging method for Fringe and Quick plots in Patran Results Post-processing.
result_quick_transform	string: Global AsIs Default	Changes the default transformation coordinate system for Fringe and Quick plots in Patran Results Post-processing. Note that unless this variable is set, Fringe plots use “as is” coordinate transformation and Quick plots use “default” transformation.
RESULTS_TITLE_CHECK_LEVEL	integer	<p>In cases where an existing jobname is active but an XDB file is attached with subcases not associated to the active job, the results cases pick up the jobname instead of the actual subcase name as defined in the Nastran job. A new settings.pcl variable has been implemented to control this.</p> <p>This is an integer value with the following meanings:</p> <p>0 (or not set at all) = current functionality is maintained</p> <p>1 = If the jobname and the XDB filename differ, then ignore the jobname when creating the result case titles. This would be just like the described workaround of clearing the jobname listbox and attaching to an XDB file. Thus it will not append the jobname to the beginning of the results case title. No messaging – it just does it.</p> <p>2 = If the jobname and the XDB filename differ, then put up a message notifying the user as such and asking if he wishes to continue with the attachment. It is either a Yes or No. If Yes, then the attachment occurs. If no, then the attachment is abandoned.</p> <p>3 = If the jobname and the XDB filename differ, then put up warning message with a simple acknowledgement OK button. The attachment will still occur regardless.</p> <p>In all cases, if the jobname and the XDB filename are the same, then the functionality remains the same.</p>

Table 4-3 settings.pcl Variables

Variable	Setting	Purpose
graphics_batch_dpi	real	Sets the resolution of the graphic images (JPEG, MPEG, TIFF, PNG, BMP files) when Patran is invoked via batch mode using the -b and -graphics command line arguments simultaneously. Batch mode does not know the dpi resolution and defaults to 100 if this environment variable is not set.
RANGE_NUMBER_SIG_DIGITS	integer	sets the significant digits. This is a bit different than the current method which is number of decimal places and the new interface reflects that. This allows the user to actually set the number of significant digits regardless of how small the number is.
RANGE_NUMBER_LEADING_ZERO	logical	Set to true for a leading zero, else set to false.
RANGE_NUMBER_USE_EXP_ON_SMALL	logical	If this is true and the user has selected a fixed format, very small numbers will be displayed using exponential format even though fixed is selected. Note that if this is false and RANGE_NUMBER_SIG_DIGITS is greater than zero, then the number of digits will be extended in fixed format until the number of significant digits required is displayed.

Nastran Results Output

There are two variables that set the results output for MSC Nastran. Both the variable **NastranResultsOutput** and **NASTRAN_XXX_DATA_OUTPUT** work, but it is important to understand which takes precedence when you run Patran.

1. If the Results Output form has been opened and values set and the job saved, then none of the above settings will change what is set in the form for that job. The values used, are the values from the database for that job. Database settings override any settings, but only for the selected job.
2. If neither **NastranResultsOutput** or **NASTRAN_XXX_DATA_OUTPUT** settings are present in the `settings.pcl` file, then the default settings for the current solution sequence is used. The default may be and is different for different solution sequences (101-199, 200, 400 have different defaults).
3. If the **NastranResultsOutput** variable (obsolete) setting is present, and the values are not found in the database, then this will be used. It is not specific to solution sequence.
4. If the **NastranResultsOutput** is not present in the `settings.pcl` file, but the second or some combination of the second type, and the values are not found in the database, then this will be used (**NASTRAN_XXX_DATA_OUTPUT**).

So for example, if you have an existing job and you select it, it will use the database values if they are present. If they are not present and you have no `settings.pcl` or the above parameters in it, the defaults will be used. If you have a `settings.pcl` file, the **NastranResultsOutput** will be used first and the others ignored if both are present. If **NastranResultsOutput** is not present and the others are, then they will be used if not defined

by the database values for the job. If you select a job, but then change the solution sequence of that job, it will try to read the `settings.pcl` values since the default or defined data output values may be different for a different solution sequence.

The `p3epilog.pcl` File

Use the `p3epilog.pcl` file to include custom PCL programs into Patran at start-up.

Patran searches for a `settings.pcl` in the following order:

1. current working directory.
2. users home directory (login directory on LINUX, and home directory as defined by the user profile or HOMEDRIVE:HOMEPATH on Windows).
3. `$P3_HOME`.

For additional information see [PCL Start-Up File](#) (p. 28) in the *PCL and Customization*.

Definition Files

Patran recognizes several files ending in `.def` at start-up.

Patran searches for `.def` files first in the current working directory, next in the users home directory (login directory on LINUX, and home directory as defined by the user profile on Windows), and finally in `$P3_HOME`. The exception is `p3toolbar.def`, which is not searched for in the working directory.

The Patran Reference Manual describes each of these files. Default examples are created in the `$P3_HOME` directory during installation.

Table 4-4 Patran Definition Files

File	Description
<code>p3_printers.def</code>	Defines printers available for hardcopy. See Printer Configuration File (p. 234) in the <i>Patran Reference Manual</i> .
<code>p3_user_menu.def</code>	Defines a user menu on the top menu bar for shareware PCL utilities.
<code>p3quickpick.def</code>	LINUX only. Defines icons and commands for the floating quickpick tools. See The Tool Bar (p. 13) in the <i>Reference Manual</i> .
<code>p3toolbar.def</code>	Defines icons and commands for the icon toolbar. See The Tool Bar (p. 13) in the <i>Reference Manual</i> . The format of this file is slightly different between LINUX and Windows.

Command Line Arguments

Patran recognizes a number of command line arguments. For example, the following LINUX command causes Patran to execute the commands in `test.ses` upon opening, to this session to `example1.ses`, and to store 500 lines of commands in the history window:

```
% patran -sfp test.ses -sfr example1.ses -hl 500
```

Command line options are applicable to both LINUX and Windows unless otherwise noted (see note about Windows below):

Table 4-5 Patran Command Line Arguments

Command Line Arguments	Purpose
-ans <yes/no>	Forces all prompts in Patran to be answered yes or no. Use this with extreme caution.
-auth <license_loc>	Specifies a location for Patran to obtain a license. Overrides all MSC_LICENSE_FILE settings (including 'OverWrite' on Windows).
-authque	-authque number -- Default =5 Specifies the time in minutes to wait for a license to become available. If Patran cannot obtain a license in the specified amount of time, Patran will bring up a user acknowledgement and close.
-b	Causes Patran to execute in batch mode (without windows). If entered with no other flags, Patran will run a test of licensing and write permissions, then exit. In batch mode, Patran does not accept input from the mouse or keyboard. If given with the -sfp flag, Patran will execute the given session file with no graphics.
-bg <xcolor> -fg <xcolor>	LINUX <i>only</i> . Sets the background and foreground colors for menu windows (not the viewport). These are typically set in the application resource file.
-db	Causes Patran to open a user specified database on startup.
-display <device>	Redirects display to given device. Equivalent to environment variable command: <code>setenv DISPLAY device:0.0</code>
-EchoEnv	Causes Patran to list environment variables that it has recognized, including those set in the .site_setup file.
-fn 	Sets the font used for menu windows.
-tfn 	Sets the font used for text data boxes.
-sfn 	Sets the font used in spreadsheets.
-hb <idle/off>	Controls the Patran heartbeat in the upper right corner of the screen. If set to idle, the heart beats constantly regardless of activity. If set to off it will never beat.
-l	Enables Large Listbox mode for properties and materials.
-hl <#_lines>	Sets the number of visible lines stored in the history window. LINUX default is 200. Maximum is 10000. Windows default is 50 lines with no maximum tested for.

Table 4-5 Patran Command Line Arguments

Command Line Arguments	Purpose
-iam <product>	Sets the mode that the software starts up as. Patran mode does not require this to be defined. Examples: <pre>patran -iam EDU</pre>
-ifile <init.pcl file>	Sets the PCL initialization file used at Patran startup. Defaults is <code>\$P3_HOME/init.pcl</code> . It sometimes is used in conjunction with the “-iam” flag. Example: <pre>patran -ifile init.pcl.flds</pre>
-mbt <ON or OFF>	On Windows and Linux machines this command line argument activates or deactivates the use of the Model Browser Tree (MBT). If ON (default), the MBT will be available directly on the graphics screen (for Windows) for easily viewing and manipulating model information contained in the database such as element properteis, materials, loads, boundary conditions, analysis job, and results.
-sfp <ses_file>	Causes Patran to execute the user supplied session file named <ses_file> upon start-up.
-sfr <ses_file>	Causes Patran to open and record the executed Patran commands to the session file named <ses_file> instead of the default <code>patran.ses.xx</code> .
-showfonts	LINUX <i>only</i> . Causes Patran to show which fonts are being used.

Table 4-5 Patran Command Line Arguments

Command Line Arguments	Purpose
-stdout	<i>Windows only.</i> Opens Windows Command Prompt which displays Patran diagnostic messages. On LINUX Patran automatically writes these messages to its parent LINUX shell.
-stdout <log_file>	<i>Windows only.</i> Writes Patran diagnostic messages to the file specified by <log_file>.
-graphics	Use in conjunction with the -b(atch) and -sfp arguments. It allows Patran to be run in batch mode and still produce graphical images via a session file when requesting JPEG, MPEG, TIFF, PNG, BMP files. The resolution of the graphic images is controlled by a settings.pcl command: <code>pref_env_set_real("graphics_batch_dpi", real_value).</code> Batch mode does not know anything about the dpi resolution and defaults to 100 if this environment variable is not set.
-skin <skin>	<i>On Windows:</i> By default launches Patran with a different GUI (Graphical User Interface) skin. Options for Classic version of Patran are <code>office2007</code> (default), <code>xptunes</code> , <code>xproyale</code> , <code>xpluna</code> , <code>ie5</code> , and <code>vista</code> . The skin option can also be turned off, or the skin changed by modifying the target field of the icon used to start Patran. <i>On Linux:</i> Skin mode is supported only in the QT version of Patran. To invoke it, run the following command in terminal: <code>\$P3_HOME/bin/p3 -skin</code> Note: Once the Skin mode has been activated, the skins can be changed during application runtime by selecting a style under Options Styles . This is valid for QT version of Patran on both Windows and Linux.

Note: On Windows, in order to use any of these command line arguments, you can edit the properties of the Start menu or icon shortcut by right mouse clicking on the shortcut and selecting properties. Then from the Target entry you can add these command lines. Invoking Patran from the command prompt is actually a batch file. This file can be edited to include any of these command line arguments also.

LINUX Shell Resource Limits

Shell resource limits are applicable to LINUX installations only. The cshell under many operating systems has built in resource limits which the `limit` command controls:

```
% limit
```



```
cputime          unlimited
filesize        1048575 kbytes
datasize        131072 kbytes
stacksize       32768 kbytes
coredumpsize    1024 kbytes
memoryuse       32768 kbytes
```

If users encounter crashes or memory related errors, have them change the limits for `cputime`, `filesize`, `datasize`, `stacksize`, and `memoryuse` to their maximums immediately before running Patran (in the same shell) with the following command:

```
% limit datasize unlimited
% limit stacksize unlimited
```

Note that the value shown by the `limit` command may be “unlimited” or may show the maximum system allowable.

Place these commands in the users `.cshrc` file to make the change effective in all shells.

If you are running Korn shell, replace the `limit` command with a similar command called `ulimit`, since the Korn shell does not have limits by default.

The PDB Database System

The Patran Database (PDB) includes aspects of both relational and object oriented databases. Its features include:

- Improved performance and stability for Patran products.
- Enhanced compatibility between platforms (see [Moving Databases Between Platforms, 59](#)).
- Automatic compression when you close a database.
- Greater control over memory management. See [Environment Variables, 36](#).
- No additional installation requirements.
- Improved compatibility with NFS mounted databases and working directories

Upgrading Databases

Patran automatically upgrades old databases to the current version when you open them. If you have a large number of databases, we recommend that you upgrade these in one “batch” process. Note that once a database is converted, it cannot be reopened in an older version.

The following command converts files from their current database schema version to the latest version (at least one filename must be supplied):

```
$P3_HOME/bin/p3convert <file1.db> <file2.db>
```

Note: Multiple database converts do not work on Windows based systems.

Creating Custom Template Databases

Patran provides a file called `template.db` under the install directory `$P3_HOME`. By default, this file is copied to the user's directory when you create a new database. This `template.db` file becomes your new, empty database.

The `template.db` file contains information for the many Application Preferences. If your site uses a small number of the Application Preferences and Modules, you may wish to create custom database to reduce the size of empty databases. Hexagon provides a `base.db` file to create a customized template file. We also provide an MSC Nastran only database called `mscnastran_template.db`. See [Modifying the Database Using PCL](#) (Ch. 6) in the *PCL and Customization* for more information.

Create Custom File from base.db

Follow this procedure to create a custom db.

1. Execute Patran, and create a new database called `custom_template.db`.
2. Load desired Analysis Preference data sets by entering one or more of the following commands in the Patran *Command Line*:

<code>load_abaqus()</code>	Abaqus
<code>load_ansys5()</code>	ANSYS (Revision 5.0 or later)
<code>load_lsdyndyna3d()</code>	LS-DYNA3D
<code>load_mscdytran()</code>	MSC.Dytran
<code>load_mscmarc()</code>	Marc
<code>load_mscnastran()</code>	MSC Nastran
<code>load_pamcrash()</code>	Patran PAMCRASH
<code>load_patran2nf()</code>	PATRAN 2 Neutral File
<code>load_pthermal()</code>	Patran Thermal
<code>load_generics()</code>	Loads generic definitions for those developing a Patran custom interface.

3. Exit Patran by selecting Quit from the File menu.
4. Make the custom database available to users by moving the `custom_template.db` file to either the `$P3_HOME` directory or to another directory. Users must select this new template when they create a new database.

Moving Databases Between Platforms¹

Patran databases are directly transportable between supported LINUX platforms. No conversion is necessary. The same is true between Windows and Linux machines. However, moving UNIX to Windows or Linux or vice versa requires conversion.

Table 4-6 System Binary Formats

Platform	Binary Format
Intel or clones running Windows or Linux	Little Endian

Patran will perform this conversion automatically. The utility can also be executed outside of Patran using:

```
$P3_HOME/bin/dbport <filename>
```

Patran Database Caching and Swapping

The PDB database stores frequently accessed data in a memory cache. The size of this cache is controlled by the `PDB_C_CACHE_SIZE` environment variable. The default `PDB_C_CACHE_SIZE` value is 'AUTO'. With the default setting AUTO, Patran sets the `PDB_C_CACHE_SIZE` value to be 75% of total RAM of the machine. If you want that percentage to be changed, set `PDB_C_CACHE_SIZE` environment variable to `AUTO<%>`. For example, if you want Patran to use 50% of the total RAM, set:

```
Setenv PDB_C_CACHE_SIZE AUTO50
```

Else, set it directly to any memory value (in Bytes):

```
Setenv PDB_C_CACHE_SIZE 10485760
```

To modify environment variables see [Environment Variables, 36](#).

When memory space required by the database system is less than the cache size, Patran will write to system memory and swap space normally. If the cache size is exceeded, Patran will write to a scratch file in the directory defined by the `PDB_C_SWAP_DIR` environment variable. The scratch file allows you to manage files that would normally exceed available memory/swap space, but is significantly slower.

Note that these values only affect memory required by database operations. A large meshing operation, for example, will still require system memory and swap. If your system runs out of memory or swap space Patran (or other programs) may shutdown. See [Memory and General Requirements, 63](#) for more information on memory and swap space.

Note:

`PDB_C_CACHE_SIZE=AUTO` does not work for large models. Hence, an appropriate value of `PDB_C_CACHE_SIZE` is required to be set manually.

¹ Patran and the `dbport` utility cannot act on files that are in both the wrong binary format and the wrong version. For example, if you have an old database on a LINUX workstation and FTP it to a Windows 2000 workstation, the new version will not be able to open the file. You must run `p3convert` on the LINUX before moving the file. See [Upgrading Databases, 57](#) for additional information.

Patran Custom Database Conversion

For databases not based on the full default `template.db`, for example a database based on only the Nastran preference or a custom preference that is NOT in the default `template.db`, then the following environment variable should be used to point to a special version of `template.db`. This database version should be built to hold the appropriate data for converting the original database up from the previous version.

`P3CONVERT20nn_TEMPLATE`¹ (where `nn` is the year, e.g. 09, 10, 11, 12, 13, etc.)

Alternatively, if a database upgrade is not desired then this variable should be an empty string. Error/warning messages related to this can be ignored. For additional information on the environment variables applicable to Patran, and how to set them using the `site_setup` file, see [Environment Variables, 36](#).

¹ The variable name changes with each new version of Patran - the name of the variable reflects the Patran version. A custom database is any database not based on the full default `template.db` (including a subset of the preferences). If converting a custom database older than the previous database version and the intermediate custom template databases are not available, it is recommended that all the convert environment variables except the last one be set to an empty string. The last variable either an empty string or a custom template database so the template data is properly upgraded.

5

Required Hardware & Software Configurations

- Supported OS/Hardware Platforms 62
- The mscinfo Utility 62
- Memory and General Requirements 63
- Microsoft Windows Requirements 65
- Linux Requirements 83
- 3D Graphics Drivers 86

Supported OS/Hardware Platforms

For the list of certified and supported platforms, please visit the following web site:

<https://www.mscsoftware.com/platform-support>

Patran is not yet certified on Windows 11. Please refer to the following SimCompanion article:

<https://simcompanion.hexagon.com/customers/s/article/Patran-on-Windows-11>

The mscinfo Utility

Patran provides a utility for obtaining important system information. This utility produces summary information on most of the system requirements used in this chapter and is a useful diagnostic tool when contacting Hexagon Customer Support. The `mscinfo` utility is part of the Patran Core Files installation. You will only have access to it after you have installed Patran

Microsoft Windows Platforms

On Windows, the `mscinfo` utility provides system summary and display information about the computer Patran is installed on, in the Notepad format. This text file can be saved to your hard drive for later use. The `mscinfo` utility can be run by accessing it from:

- **Start>(All)Programs>MSC.Software>Patran>MSC.Info**

The `mscinfo`¹ utility can also be run on any version of Windows from command prompt by typing:

```
$P3_HOME\bin\mscinfo
```

where `$P3_HOME`² is the installation directory.

This list shows the different types of information that `mscinfo` returns.

System Summary	OS level, Processor, Total Physical Memory, Available Physical Memory, Total Virtual Memory, Available Virtual Memory, Page File Space, and the Page File name.
Display	Adapter Name, Type, Description, and RAM. Installed Drivers, Driver Version, resolution and color depth.
Drives	Drive letter, description, Compression, File System (NTFS, FAT), Size, Free Space, and Volume Name.
Environment Variables	Lists the environment variables set on the system.
Services	Lists the services running on the system.
Windows Error Reporting	List the errors reported by the system.

LINUX Platforms

The `mscinfo` utility for LINUX has slightly different requirements and options available. This information applies only to the separate LINUX script. To run the utility, enter:

¹ The `mscinfo` option flags for LINUX are not available on the Windows platforms.

² Throughout this document you will see Patran's installation directory referenced as `$P3_HOME`.

```
% $P3_HOME/bin/mscinfo
```

mscinfo will return information as shown below:

```
Manufacturer:      GenuineIntel
Node:              fontana
Model:            Intel(R) Pentium(R) 4 CPU 1500MHz i686
OS Level:         SuSE Linux 11 (i586) 2.6.4-52-default
X Server:         XFree86 4.3.99.902
Window Manager:   KDE (kdm )
Motif:            2.2.3
3D Graphics Libraries: XFree86-Mesa-4.3.99.902-40 (OpenGL 1.2)
Graphics:         ATI Graphics Adapter
Installed RAM:    1012 MB
Free Tmp Space:  10301080 kbytes
Swap Space:       2055 MB
```

The following table describes the options that can be used to access various subsets of information provided by the mscinfo utility.

Table 5-1 mscinfo Utility Option Flags

mscinfo Option	Use
mscinfo -x	Displays information pertaining to the current Xserver. Must be executed on the graphics head of the system (i.e. not from a remote login or Xterminal).
mscinfo -v	Verbose mode - provides additional information on graphics libraries such as name, patch, or revision date.
mscinfo -c	Displays a list of the commands used to determine system information.

Memory and General Requirements

Patran memory requirements vary according to model size and actions performed. The following guidelines are based on typical use. Solvers or other software that run concurrently with Patran may increase RAM, swap (also referred to as virtual memory), and disk space requirements.

RAM and Swap Guidelines

Patran typically generates memory, “memalloc”, or “PDB” errors when it is unable to obtain sufficient memory. Memory in this context is the sum of physical RAM and paging (swap) space.

Since RAM memory is much faster than disk-based swap memory, increasing the amount of RAM typically improves performance. A good general rule is to provide 25% to 30% of total memory as RAM. Consult your operating system documentation for additional information.

See [LINUX Shell Resource Limits, 56](#) for additional information on accessing memory.

Memory and Disk Space Requirements

The following tables show disk space, swap, and RAM guidelines for small, medium, and large analysis models. Patran may actually run with fewer resources than shown, but these minimums are recommended. The installation indicates required disk space when installing.

Table 5-2 LINUX Disk Space and Memory Requirements

Memory Type	Standard	Large Models
Free Random Access Memory (RAM) per user	2 GB - 4 GB	6 GB - 10 GB
Paging Disk Space (Swap)	500 MB - 700 MB	1 GB - 2 GB
Scratch Disk Space (/tmp)	Solver Dependent	Solver Dependent
Scratch Disk Space (/var/tmp)	10 MB	10 MB

Table 5-3 Windows Disk Space and Memory Requirements

	Standard	Large Models
Random Access Memory (RAM)	4 GB - 6 GB	6 GB - 32 GB
Paging Disk Space (Swap)	500 MB - 1 GB	1 GB - 2 GB

Microsoft Windows Requirements

Patran supports the following Microsoft Windows hardware and software. For additional information on Patran on Windows support and limitations see [Installing on Microsoft Windows, 5](#).

Table 5-4 Windows Requirements

Hardware Platforms	Intel Pentium 4, Xeon, EM64T, AMD Opteron
Compiler Versions	Microsoft Visual Studio 2022 Version: 17.1.7 (C/C++) Intel oneAPI 2022.2(Fortran)*
Other	3 Button Mouse Ethernet Card and Microsoft TCP/IP Service (see example below)
Graphics Devices	1280x1024 or higher resolution (see TCP/IP Requirements, 82)

*The listed compilers are required for Patran dbaccess programming and Patran Thermal using user subroutines only. See [Windows C++ and FORTRAN Compiler Requirements, 65](#) below for details.

For the list of certified and supported platforms, please visit the following web site:
<https://www.mscsoftware.com/platform-support>

Windows C++ and FORTRAN Compiler Requirements

See [Table 5-4](#) above. Patran Thermal using user subroutines requires the compilers listed in this table. These are the only compilers supported for Patran Thermal. The minimum configurations described in [Patran Thermal Setup, 15](#) require approximately 300MB of disk space.

Important: Patran Thermal requires specific compiler modules and compiler installation steps. Follow the instructions in Patran Thermal Setup when installing these compilers.

Windows Certified Hardware

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP-EliteBook 8770W		Intel core i7 3820QM @ 2.74 GHz	AMD FirePro M4000	4 GB	12.104.2.0
HP-EliteBook 8760W		Intel Core i7-2820QM 2.3 GHz	AMD FirePro M5950	4 GB	Fx570 13.152.4.0
HP-Z820		Intel E5-2680 2.7GHz (2 processors)	NVIDIA Quadro K5000	4 GB	9.18.13.3221
Dell-M6600		Intel Core i7-2820QM CPU @ 2.30GHz	NVIDIA Quadro 4000M	4 GB	9.18.13.2000
Dell-Precision T7500		Intel(R) Xeon(R) CPU X550 @ 2.67GHz	AMD FirePro V4800	3.8 GB	8.850.70.2000
HP-EliteBook 8770W		Intel Core i7-3820QM @ 2.70GHz (8 CPUs)	NVIDIA Quadro K5000M	4 GB	8.17.12.9703
Dell-Precision M4400		Intel Core 2 Duo, T-9800 @ 2.93 GHz	NVIDIA Quadro FX 770M	2 GB	8.17.12.8562
Dell-Precision M4600 *		Intel Core i7-2860QM	NVIDIA Quadro 1000M	2 GB	9.18.13.2092
Dell-Precision M4700		Intel Core i7-3520QM @ 2.90GHz (4 CPUs)	NVIDIA Quadro 1000M	2 GB	9.18.13.2092
Dell-Precision M4700		Intel Core i7-3720QM @ 2.60GHz	NVIDIA Quadro K2000M	2 GB	9.18.13.1090
HP-Workstation XW8200-3		Intel Xeon 3.60 GHz (2 Processors)	NVIDIA Quadro FX380	256 MB	9.18.13.2049
HP-Workstation XW8200-2		Intel Xeon 3.60 GHz (2 Processors)	NVIDIA Quadro K5000	4 GB	9.18.13.3250
HP-Workstation XW8200-1		Intel Xeon 3.60 GHz (2 Processors)	AMD FirePro V4900	1 GB	9.3.3.3000
HP-EliteBook 8560w		Intel core i7 2820 QM @ 2.30 GHz	NVIDIA Quadro 2000M	4 GB	9.18.13.4725

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision T3400		Intel Q9300 2.50 GHz (4 CPUs)	NVIDIA Quadro FX 1700	512 MB	9.18.0013.0745
Dell Precision T3400		Intel Q9300 2.50 GHz (4 CPUs)	NVIDIA Quadro FX 570	3.8 MB	9.18.13.4105
Dell Precision M6500		Intel Core i7-Q720 CPU @ 1.6GHz (8 CPUs)	AMD FirePro M7820	2 GB	8.911.3.400
HP-EliteBook 8740w		Intel Core i7-Q820 CPU @ 1.73GHz (8 CPUs)	NVIDIA Quadro 5000M	4 GB	9.18.13.3182
Dell Precision M4600 *		Intel Core i7-2620M CPU @ 2.7 GHz (4 CPUs)	NVIDIA Quadro 1000M	4 GB	9.18.13.2092
Dell Precision M4700		Intel Core i7-3740 QM CPU @ 2.70 GHz	NVIDIA Quadro K2000M	4 GB	9.18.13.2049
Dell Precision M4700		Intel Core i7-3720 QM CPU @ 2.60 GHz (8 CPUs)	NVIDIA Quadro K2000M	1 GB	9.18.13.2092
Dell Precision M4600 *		Intel Core i7-2620M CPU @ 2.7 GHz	NVIDIA Quadro 1000M	1 GB	9.18.13.2092
Dell Precision M4600		Intel Core i7-2760QM CPU @ 2.7 GHz (8 CPUs)	NVIDIA Quadro 2000M	4 GB	9.18.13.2092
HP-EliteBook 8570w		Intel Core i7-3820 QM CPU @ 2.70 GHz (8 CPUs)	NVIDIA Quadro K2000M	4 GB	9.18.13.3250
Dell Precision M4600 *		Intel Core i7-2620 QM CPU @ 2.70 GHz (8 CPUs)	NVIDIA Quadro 1000M	2 GB	9.18.13.2092
HP-Z820		Intel E5-2680 2.7GHz (2 processors)	NVIDIA Quadro K600	1 GB	9.18.13.1090
HP-Z400 Workstation		Intel® Xeon(R) CPU W3520 @2.67GHz	NVIDIA Quadro 4000	2 GB	9.18.13.3221
HP-Z820		Genuine Intel (R) @ 2.7GHz (2 Processors)	NVIDIA Quadro K6000	12 GB	9.18.13.2092
Dell Precision M4500		Intel Core i7M620 @ 2.67GHz	NVIDIA Quadro FX 1800M	512 MB	9.18.13.3165

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision T3500		Intel® Xeon(R) CPU W3520 @2.67GHz	NVIDIA Quadro FX 580	4 GB	8.17.12.9688
Dell Precision T3500		Intel® Xeon(R) CPU W3520 @2.67GHz	AMD FirePro V5900 (FireGL V)	4 GB	13.152.4.0
Dell Precision T3500		Intel® Xeon(R) CPU W3520 @2.67GHz	NVIDIA Quadro 2000	4 GB	9.18.13.2092
HP Z600 Workstation		Intel® Xeon(R) CPU E5645 @2.40GHz	NVIDIA Quadro 2000	1 GB	8.17.12.7090
Dell Precision T1650		Intel (R) Xeon(R) CPU-E3-1220 V2 @ 3.10 GHz	NVIDIA Quadro 2000	1 GB	8.17.12.7090
Dell Precision T1700		Intel (R) Xeon(R) CPU-E3-1240 V3 @ 3.40 GHz	NVIDIA Quadro K600	4 GB	9.18.13.2009
Dell Precision T7600		Intel (R) Xeon(R) CPU-E5-2630 0 @ 2.30 GHz	NVIDIA Quadro 6000	6 GB	8.17.12.7619
Dell Precision M4300		Intel Core 2 Duo 2 @ GHz (2 CPUs)	NVIDIA Quadro FX 360M	512 MB	9.18.13.2049
HP ZBook 15		Intel i-7 4900MQ @ 2.80GHz	NVIDIA Quadro K2100M	4 GB	9.18.13.1233
HP ZBook 17		Intel i-7 4900MQ @ 2.80GHz (8CPUs)	NVIDIA Quadro K5100M	4 GB	9.18.13.4084
Dell Precision M6800		Intel i-7 4900MQ @ 2.80GHz (8CPUs)	NVIDIA Quadro K5100M	4 GB	9.18.13.1166
Dell Precision M4800		Intel i-7 4900MQ @ 2.80GHz	NVIDIA Quadro K2100M	4 GB	9.18.13.1166
HP ZBook 14		Intel Core i-7 4600 U CPU @ 2.10 GHz	AMD FirePro M4100 FireGL V	4 GB	13.101.1.0
HP EliteBook 8540w		Intel i-7 Q 820Q 1.73 GHz	NVIDIA Quadro FX 1800M	466 MB	8.17.12.9688

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision M6800		Intel i-7 4720MQ @ 2.2GHz (8 CPU's)	AMD FirePro M6100 FireGL V	4 GB	13.152.4.0
Dell Precision M4500		Intel i-5 M520 @ 2.4GHz (4 CPU's)	NVIDIA Quadro FX 880M	3 GB	9.18.13.3165
Dell Precision T3610		Intel(R) Xeon(R) CPU E5-1650 v2 @ 3.50GHz (12 CPUs)	NVIDIA Quadro K2000	2 GB	9.18.13.3276
Dell Precision T3610		Intel(R) Xeon(R) CPU E5-1650 v2 @ 3.50GHz (12 CPUs),	AMD FirePro V3900	4 GB	13.350.1012.0
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2687W v2 @ 3.40GHz (32 CPUs), ~3.4GHz	AMD FirePro W8100	8 GB	13.352.1009.0 *
HP Z820		Intel E5-2680 2.7GHz (2 processors)	AMD FirePro W8100	8 GB	13.352.1009.0 *
HP-Workstation XW8200-3		Intel Xeon 3.60 GHz (2 Processors)	NVIDIA Quadro FX 3800	1 GB	9.18.13.3311
Dell Precision M3800		Intel(R) Core(TM) i7-4702HQ CPU @ 2.20GHz (8 CPUs)	NVIDIA Quadro K1100M	2 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K420	1 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K620	2 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K2200	4 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K4200	4 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K5200	8 GB	9.18.13.4066
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K6000	12 GB	9.18.13.4066

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD FirePro W2100	2 GB	13.352.1009
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD FirePro W5100	4 GB	13.352.1009
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	NVIDIA Quadro K620	2 GB	9.18.13.4066
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	NVIDIA Quadro K2200	4 GB	9.18.13.4066
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	NVIDIA Quadro K4200	4 GB	9.18.13.4066
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	NVIDIA Quadro K5200	8 GB	9.18.13.4066
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	NVIDIA Quadro K6000	12 GB	9.18.13.4066
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	AMD FirePro W2100	2 GB	13.352.1009
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	AMD FirePro W4100	2 GB	13.352.1009
Dell Precision T7610		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs)	AMD FirePro W5100	4 GB	13.352.1009
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K420	1 GB	9.18.13.4066
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K620	2 GB	9.18.13.4066
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K2200	4 GB	9.18.13.4066
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K4200	4 GB	9.18.13.4066

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K5200	8 GB	9.18.13.4066
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro K6000	12 GB	9.18.13.4066
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD FirePro W2100	2 GB	13.352.1009
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD FirePro W5100	4 GB	13.352.1009
HP Zbook 17 G2		Intel(R) Core(TM) i7-4910MQ CPU @ 2.90GHz (8CPUs)	AMD FirePro M6100	2 GB	14.301.1003
HP Zbook 15 G2		Intel(R) Core(TM) i7-4910MQ CPU @ 2.90GHz (8CPUs)	NVIDIA Quadro K1100M	2 GB	9.18.13.3356
HP Zbook 17 G2		Intel(R) Core(TM) i7-4910MQ CPU @ 2.90GHz (8CPUs)	NVIDIA Quadro K2200M	2 GB	9.18.13.4122
HP Z440 *		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD FirePro W7100	8 GB	13.352.1009
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD FirePro W7100	8 GB	13.352.1009
Dell Precision T3610		Intel(R) Xeon(R) CPU E5-1650 v2 @ 3.50GHz (12 CPUs),	AMD FirePro W7100	8 GB	13.350.1012.0
HPZBOOK14		Intel Core i-7 5600 U CPU @ 2.60 GHz	AMD FirePro M4150	4GB	14.301.1002.1006
HPZBOOK15u		Intel Core i-7 5600 U CPU @ 2.60 GHz	AMD FirePro M4170	4GBx	14.301.1002.1006
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro M6000	8 GB	9.18.13.4752
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro M6000	8 GB	9.18.13.4752

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision T3610		Intel(R) Xeon(R) CPU E5-1650 v2 @ 3.50GHz (12 CPUs),	AMD FirePro V4800(FireGL V)	4GB	13.350.1012.0
DELL Precision T7910		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs), 16 GB	NVIDIA Quadro FX 3700	16GB	9.18.13.4066
HP Elitebook 8760w		Intel Core i-7 2820MQ CPU @ 2.30 GHz	AMD FirePro M5950(FireGL V)	4 GB	13.352.1006.0
HP Elitebook zb		Intel Core i-7 Q820 CPU @ 1.73GHz	NVIDIA Quadro FX 1800M	466MB	9.18.13.4052
HP Zbook15		Intel i-7 4900MQ @ 2.80GHz	NVIDIA Quadro K2100M	4GB	9.18.13.4084
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro M4000	2 GB	9.18.13.4817
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro M4000	2 GB	10.18.13.5413
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA Quadro M5000	4 GB	9.18.13.4817
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro M5000	4 GB	10.18.13.5413
Dell-Precision T7500		Intel(R) Xeon(R) CPU X550 @ 2.67GHz	NVIDIA Quadro K5000	4 GB	9.18.13.5362
Dell Latitude L01532-3		Intel(R) Core(TM) i7-2720QM CPU @ 2.20GHz	NVIDIA NVS 4200M	4 GB	9.18.13.4105
Dell Precision 3510		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.7GHz	AMD FirePro W5130M	2GB	15.201.1701.0
Dell Precision 7510		Intel(R) Core(TM) i7-6920HQ CPU @ 2.90GHz ~2.90GHz	NVIDIA Quadro M2000M	4GB	10.18.13.5413
Dell Precision 7510		Intel(R) Core(TM) i7-6920HQ CPU @ 2.90GHz ~2.90GHz	AMD FirePro W5170M	2GB	15.201.1701.0

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision 7710		Intel(R) Core(TM) i7-6920HQ CPU @ 2.90GHz -2.90GHz	NVIDIA Quadro M5000M	8GB	10.18.13.5413
Dell Precision 7710		Intel(R) Core(TM) i7-6920HQ CPU @ 2.90GHz -2.90GHz	AMD FirePro W7170M	4GB	15.201.1701.0
Precision WorkStation T3400		Intel(R) Core(TM)2 Quad CPU Q9300 @ 2.50GHz (4 CPUs), -2.5GHz	ATI FirePro V7800 (FireGL V)	4GB	13.152.4.0
DELL Precision T7910		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs), 16 GB	Nvidia Quadro M4000	2GB	10.18.13.5435
DELL Precision T7910		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs), 16 GB	Nvidia Quadro M5000	4GB	10.18.13.5435
DELL Precision T7910		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs), 16 GB	Nvidia Quadro M6000	8GB	10.18.13.5435
DELL Precision T7910		Intel(R) Xeon(R) CPU E5-2683 v3 @ 2.00GHz (32 CPUs), 16 GB	AMD FirePro W8100	8GB	15.201.2401
HP ZBook Studio G3		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz -2.70GHz (8 CPUs)	Nvidia Quadro M1000M	1 GB	10.18.13.5461
HP Zbook 17 G3		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz -2.70GHz (8 CPUs)	Nvidia Quadro M2000M	8GB	10.18.13.5461
HP Zbook 17 G3		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz -2.70GHz (8 CPUs)	Nvidia Quadro M5000M	8GB	10.18.13.5461
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	Nvidia Quadro M2000	4 GB	10.18.13.6191
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	Nvidia Quadro M6000 24G	24 GB	10.18.13.6191
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA Quadro K1200	4 GB	10.18.13.6191
HP Zbook 15 G3		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz -2.70GHz (8 CPUs)	Nvidia Quadro M2000M	8GB	10.18.13.5461

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Zbook 15u G3		Intel(R) Core(TM) i7-6820HQ CPU @ 2.70GHz ~2.70GHz (8 CPUs)	AMD FirePro W4190M	2GB	15.201.2601.1003
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX4100	4GB	21.19.141.0
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX5100	8GB	21.19.141.0
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX7100	8GB	21.19.141.0
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX4100	4GB	21.19.141.0
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX5100	8GB	21.19.141.0
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX7100	8GB	21.19.141.0
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA QUADRO P6000	24GB	375.86
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA QUADRO P5000	16 GB	375.86
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA QUADRO P4000	8 GB	375.86
HP Z840		Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	NVIDIA QUADRO P2000	5 GB	375.86
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA QUADRO P6000	24GB	375.86
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA QUADRO P5000	16 GB	375.86
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA QUADRO P4000	8 GB	375.86
HP Z440		Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	NVIDIA QUADRO P2000	5 GB	375.86

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Zbook15u G4	Windows 10	Intel(R) Core(TM) i7-7600U CPU @ 2.80GHz (4 CPUs), ~2.9GHz	AMD FirePro W4190M	2 GB	21.19.142.32768
Dell Precision 7520	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4130	2 GB	21.19.384.3
Dell Precision 7520	Windows 10	Intel(R) Xeon(R) CPU E3-1535M v6 @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4150	4 GB	21.19.384.3
Dell Precision 7520	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	Nvidia Quadro M1200	4 GB	21.21.13.7586
Dell Precision 7520	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	Nvidia Quadro M2200	4 GB	21.21.13.7586
Dell Precision 7720	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 4130	2 GB	21.19.384.3
Dell Precision 7720	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	AMD Radeon Pro WX 7100	8 GB	21.19.384.3
Dell Precision 7720	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	Nvidia Quadro P3000	6 GB	21.21.13.7586
Dell Precision 7720	Windows 10	Intel(R) Core(TM) i7-7920HQ CPU @ 3.10GHz (8 CPUs), ~3.1GHz	Nvidia Quadro P4000	8 GB	21.21.13.7586
Dell Precision 7720	Windows 10	Intel(R) Xeon(R) CPU E3-1535M v6 @ 3.10GHz (8 CPUs), ~3.1GHz	Nvidia Quadro P5000	16 GB	21.21.13.7586
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P600	2GB	377.11
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P1000	4GB	377.11
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P2000	5GB	377.11

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P4000	8GB	377.11
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P5000	16GB	377.11
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	Nvidia Quadro P6000	24GB	377.11
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX4100	4GB	17.10.1730.1004
Dell Precision 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX5100	8GB	17.10.1730.1004
Dell Precision* 7920 Tower	Windows 10	Intel(R) Xeon(R) Gold 6130 CPU @ 2.10GHz (64 CPUs), ~2.1GHz	AMD Radeon WX7100	8GB	17.10.1730.1004
HP Z8 G4† Workstation	Windows 10	Intel(R) Xeon(R) Gold 6128 CPU @ 3.40GHz (24 CPUs), ~3.4GHz	Nvidia Quadro P4000	8GB	385.69
Dell Precision 7530	Windows 10	Intel(R) Core(TM) i7-8850H CPU @2.60GHz 2.59GHz	NVIDIA Quadro P2000	4GB	23.21.13.8908
Dell Precision 3530	Windows 10	Intel(R) Xeon(R) E-2176M CPU @2.70GHz 2.71GHz	NVIDIA Quadro P600	4GB	23.21.13.8908
Dell Precision 7730	Windows 10	Intel(R) Core(TM) i9-8950HK CPU @2.90GHz 2.90GHz	NVIDIA Quadro P3200	6GB	23.21.13.8908
Dell Precision 7530	Windows 10	Intel(R) Xeon(R) E-2176M CPU @ 2.70GHz (12 CPUs), ~2.7GHz	NVIDIA Quadro P1000	4 GB	23.21.13.9827
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	16 GB	24.21.14.1216
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX2100	2GB	19.Q1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX3100	4GB	19.Q1

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX4100	4GB	19.Q1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX5100	8GB	19.Q1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8 CPUs), ~4.0GHz	AMD Radeon WX7100	8GB	19.Q1
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	16GB	24.21.14.1195
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	16GB	24.21.14.1195
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 8000	16GB	25.21.14.1917
HP ProBook 650 G2	Windows 10	Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz (4 CPUs), ~2.8GHz	AMD Radeon (TM) R7 M350	32GB	25.20.15031.5004
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 5000	16GB	25.21.14.1917
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 6000	24GB	25.21.14.1917
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro RTX 4000	8GB	25.21.14.1917
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	NVIDIA Quadro P2200	4GB	26.21.14.3064
HP Z4 G4 Workstation**	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX 3200 Series	4GB	19.Q2

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP ZBook 14u G6	Windows 10	Intel(R) Core (TM) i7-8665U CPU @ 1.90GHz 2.11 GHz	AMD Radeon Pro WX3200 Graphics	4GB	25.20.15026.2
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R)W-2125 CPU	AMD Radon Pro WX3200 Series	4GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX2100	2GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX3100	4GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX4100	4GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX5100	8GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX7100	8GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX8200	8GB	26.20.11024.1
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radeon Pro WX9100	16GB	26.20.11024.1
HP Zbook 15 G6	Windows 10	Intel(R) Core(TM) i7-9850H CPU @ 2.60GHz(12 CPUs) ~2.6GHz	NVIDIA Quadro T1000	4GB	25.21.14.2591
HP Zbook 15 G6	Windows 10	Intel(R) Core(TM) i7-9850H CPU @ 2.60GHz(12 CPUs) ~2.6GHz	NVIDIA Quadro RTX3000	6GB	25.21.14.2591
HP Zbook 17 G6	Windows 10	Intel(R) Core(TM) i7-9850H CPU @ 2.60GHz(12 CPUs) ~2.6GHz	NVIDIA Quadro RTX5000	16GB	25.21.14.2591

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX3100	4GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX3200	4GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX4100	4GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX5100	8GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX7100	8GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX8200	8GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro WX9100	16GB	26.20.13028.13
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro W5700	8GB	19. Q4
HP Z4 G4 Workstation	Windows 10	Intel(R) Xeon(R) W-2125 CPU @ 4.00GHz (8CPUs), ~4.0GHz	AMD Radon Pro W5500	8GB	20.Q1
	Windows 10		Radeon Pro W5500		21.Q2 Enterprise Driver
	Windows 10		Radeon Pro WX 3200		21.Q2 Enterprise Driver
	Windows 10		Radeon Pro VII		21.Q2 Enterprise Driver
	Windows 10		Radeon PRO W6800		21.Q2 Enterprise Driver

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
Zbook Fury 17 G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro RTX 5000	8 GB	27.20.11027.4001
Zbook Fury 15 G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	AMD Radeon Pro W5500M	8 GB	27.21.14.5167
Zbook Studio G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro RTX 4000	16 GB	27.21.14.5167
Zbook Studio G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro RTX 3000	8 GB	27.21.14.5167
Zbook Studio G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro T2000	8 GB	27.21.14.5167
Zbook Studio G7	Windows 10	Intel(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro T1000	8 GB	27.21.14.5167
Zbook Firefly 14 G8	Windows 10	Intel(R) Core(TM) i7-1185G7 CPU @3.00GHz	Nvidia T500	8 GB	27.21.14.5256
Zbook Studio G8	Windows 10	Intel(R) Core(TM) i7-11850H CPU @ 2.50 GHz	Nvidia RTX A2000	16 GB	27.21.14.6294
Precision 7750	Windows 10	Intel(R) Core(TM) i9-10880H CPU @2.30GHz	Nvidia Quadro RTX 5000	32 GB	27.21.14.5148
Precision 7560	Windows 10	Intel(R) Core(TM) i7-11600H CPU @2.90GHz 2.92 GHz	Nvidia RTX A2000	16 GB	27.21.14.6259
Precision 7550	Windows 10	Intel(R) Core(TM) i9-10880H CPU @2.30 GHz	Quadro RTX 3000	8 GB	27.21.14.5148
Precision 7550	Windows 10	Inter(R) Core(TM) i7-10850H CPU @ 2.70GHz	Nvidia Quadro T1000	8 GB	27.21.14.5148
Precision 3561	Windows 10	Intel(R) Core(TM) i9-11950H CPU @2.60GHz 2.61GHz	Nvidia T600	8 GB	27.21.14.6209
Precision 3551	Windows 10	Intel(R) Core(TM) i7-10875H CPU @ 2.30 GHz	Nvidia Quadro P620	16 GB	27.21.14.5148

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP Z840	Windows 10		NVIDIA RTX A6000		27.21.14.6231
HP Z840	Windows 10		NVIDIA RTX A5000		27.21.14.6231
HP Z840	Windows 10		NVIDIA RTX A4000		27.21.14.6231
HP Z840	Windows 10		AMD PRO W6600		27.20.22010.1001
HP Z840	Windows 10		AMD desktop Radeon Pro W5700		27.20.1010.1
HP Z840	Windows 10		AMD desktop Radeon Pro W5500		27.20.1010.1
HP Z840	Windows 10		Nvidia T1000		27.21.14.6231
HP Z840	Windows 10		Nvidia T400		27.21.14.6231
HP ZBook Power G9	Windows 10	Intel® Core™ i7-12700H CPU@ 4.7 GHz	Nvidia T600	4 GB	30.0.15.1298
HP ZBOOK Fury 16 G9			NVIDIA RTX A2000		31.0.15.2667
HP ZBOOK Fury 16 G9			NVIDIA RTX A3000		30.0.15.1298
HP ZBOOK Fury 16 G9			AMD Radeon™ Pro W6600M		31.0.12026.3004
HP ZBOOK Firefly G9			NVIDIA RTX A500		31.0.15.1713
HP Z BOOK Studio 16 G9			NVIDIA RTX A4500		31.0.15.2667
HP ZBOOK Firefly 14 G9			NVIDIA RTX T550		31.0.15.1713
Dell 3460			NVIDIA Quadro RTX 3000		31.0.15.1640
Dell 3571			Nvidia T600		10.0.19041.1741
Dell 5570			NVIDIA RTX A1000		31.0.15.1700

Brand-Model	Operating System	CPU	Graphic Card	Graphics Card Memory (GB)	Graphic Card Driver
HP ZBook Power G9	Windows 10	Intel® Core™ i7-12700H CPU@ 4.7 GHz	Nvidia T600	4 GB	30.0.15.1298
HP ZBook Power G9	Windows 10	Intel® Core™ i7-12700H CPU@ 4.7 GHz	Nvidia RTX A1000	4 GB	30.0.15.1298

* Per DELL, R7920 and Dell Precision 7820 are also certified, which are derived from Dell Precision 7920, they are using the same chipset.

† Nvidia Quadro P400, P600, P1000, P5000, P6000 are derived from P4000 in HP Z8 G4 workstation which are sharing the same driver: 385.69.

**HP Z640 is the HP Z440 with expandability of second processor. The Z440, Z640 and Z840 are all the same Intel Chipset. HP Z6 G4 is also certified, which is derived from HP Z4 G4. Per HP, we will document Zbook 15/17/Studio/Studio X36 Win 10 with NVIDIA Quadro P2000 and driver 391.48 as a paper qual.

Note:	<ul style="list-style-type: none"> ■ Patran does not support Microsoft Windows running on Intel Itanium or Itanium 2 workstations. ■ If graphical issues still remain with driver update to the latest version, please make sure to update BIOS ■ For cards with no driver information, please use the latest version certified by the vendor.
--------------	---

TCP/IP Requirements

You must have the Microsoft TCP/IP networking facility installed on Windows.

Patran also requires an ethernet card, even if the workstation is not connected to a network. FLEXIm uses the ethernet card to create a system ID.

Linux Requirements

Patran supports the following Linux hardware and software. For additional information on Patran on Linux support and limitations see [Installing on LINUX, 21](#).

Table 5-5 Linux Requirements

Hardware Platforms	Intel Pentium 4, Xeon, AMD Opteron
Compiler Version	Intel oneAPI 2022.2 (C/C++, Fortran)*
Window Manager	KDE 3.3, Gnome (Enlightenment)
3D Graphics Library Version	Must install vendor supplied OpenGL video driver.
Other	Ethernet Card
Graphics Devices	1280x1024 or higher Graphics Card (see below)

*The listed compilers are required for dbaccess programming and Patran Thermal using user subroutines only. See [Linux \(64 bit\) C, C++ and FORTRAN Compiler Requirements, 84](#) below for details.

For the list of certified and supported platforms, please visit the following web site:
<https://www.mscsoftware.com/platform-support>

Note: If you encounter any command line logs related to GdkPixbuf-CRITICAL or Gtk-WARNING on SUSE 12, please note that these are related to Gtk+/icon theme, and do not affect Patran's functionality in any way. These warnings can be minimized/removed by running the following commands in root mode:

1. Change Gtk+ theme from 'Adwaita' to 'HighContrast' or any similar theme through Settings GUI or through command line:

```
gsettings set org.gnome.desktop.interface gtk-theme 'HighContrast'
```

The default theme can be restored by the command:

```
gsettings set org.gnome.desktop.interface gtk-theme 'Adwaita'
```

2. Rebuild the icon-cache with the following command:

```
gtk-update-icon-cache --force /usr/share/icons/hicolor
```

Change icon theme from 'gnome' to 'hicolor' or any similar theme through Settings GUI or through command line:

```
gsettings set org.gnome.desktop.interface icon-theme 'hicolor'
```

The default icon theme can be restored by the command:

```
gsettings set org.gnome.desktop.interface icon-theme 'gnome'
```

Linux (64 bit) C, C++ and FORTRAN Compiler Requirements

See [Table 5-5](#) above. Patran Thermal using user subroutines requires the compilers listed in this table. These are the only compilers supported for Patran Thermal.

Tested Systems

Hexagon has tested Patran for Linux on the following computer systems:

- Dell Workstation 220, 420, 620, 330, 340, 350, 360, 450, 530, 650

Patran and MSC Nastran on Linux should run on any Intel-based PC that is compatible with one of the supported versions of Linux. For the system tests noted above, the amount of RAM ranged from 128 MB to 1 GB.

Graphics Boards and OpenGL Acceleration

Hexagon has tested the following Standard and OpenGL graphics adapters to verify compatibility with Patran on Linux.

- FireGL 8700/8800, FireGL X1

- NVidia FX500, FX570, FX1100, FX1300, FX1800, FX3000, FX3400, FX3450, FX4000
- Wildcat 7210

Note that OpenGL (Hardware) mode requires more colors, and typically causes color flashing on 256 color displays. Use 32K color or higher mode to avoid color flashing. For additional information see [3D Graphics Drivers, 86](#).

Graphics Cards for Linux

Hexagon performs all its certification testing for graphics cards on Red Hat Linux.

For Red Hat Linux, we obtain all our drivers from the graphics card vendors.

Nvidia cards: <http://www.nvidia.com/Download/index.aspx?lang=en-us>

FireGL cards: <http://support.amd.com/en-us/download>

Linux drivers consist of two parts: X11 driver with the OpenGL libraries, and secondly, the kernel module driver. X11 drivers match the X11 (X- Server) version installed, i.e. 6.8.2.

The kernel module driver is unique for each kernel. An example of a Red Hat kernel is 2.4.2-2. There are kernels for dual-processor machines, whose kernels end with the extension "smp", and single-processor kernels. `$P3_HOME/bin/mscinfo` will print the OS Level and kernel, and the X11 version name.

Below are the steps to install and configure a graphics card in Linux¹.

1. We need to go to level 3, where we have everything loaded but the X-Server.

```
% init 3
```

2. Install the packages provided

```
% rpm -ivh package.rpm
```

The latest drivers will need runtime C library glibc2.2 (or libc62) to install properly.

3. Once all the appropriate packages are installed (`rpm -ivh package.rpm`), we need to make sure the respective kernel module is loaded.

```
% lsmod
```

Examples of kernel modules are:

```
"fglrx" -- this is the FireGL driver
"NVdriver" -- this is the Nvidia driver
```

To manually load the module (only do this in level 3), type:

```
% insmod <modulename>
% lsmod
```

If the module is still not loaded, then something is wrong with the package installation.

```
% depmod -a
```

can be used to find out any unresolved module dependencies.

4. If the modules are loaded, then the next thing to do is to configure the X server parameters for the graphics device.

¹ The graphics card driver should be installed in level 3. Level 5 is the default level that the machine boots in.

```
/etc/X11/xorg.conf
```

is the file that controls this, along with the resolution, keyboard, mouse, monitor info, etc.

FireGL driver has a command to use to configure this:

```
% fglrxconfig
```

It will create a config file based on all the inputs given.

For other vendors, the most common config commands are "xf86config" and "Xconfigurator". The "Xconfigurator" command is graphical, and can only be used when the X-Server is already running.

5. If you are still in level 3, to go back to the default level, just type:

```
% exit
```

This will go the default level 5.

If the X-Server doesn't start, something was misconfigured in the `/etc/X11/xorg.conf`

Patran fonts

All versions of Linux using X.org 6.8.1 lack support for Patran standard fonts. To get the Patran standard fonts, you will need to upgrade to 6.8.2 or higher.

3D Graphics Drivers

Patran automatically detects the presence of a hardware graphics device. If a supported hardware device is present, Patran hardware rendering can be enabled from an Patran session by selecting Graphics | Preference. The default can be changed using settings.pcl:

```
pref_env_set_string("graphics_hardware", "YES")
```

"YES" indicates Hardware 3D¹ mode and "NO" indicates Software 3D mode.

Hexagon recommends that you run the 3D driver in Hardware 3D mode if the workstation has a supported graphics option.

Note that graphics acceleration is not applicable to remote displays except for homogenous OpenGL machines. Patran automatically switches to Software 3D mode if running from a remote Xserver that does not support OpenGL.

The Patran 3D driver requires that the DISPLAY environment variable be set to "<hostname>:0.0", ":0.0", "linux:0.0", or "localhost:0.0". Any other form uses the software 3D mode.

OpenGL Hardware Graphics

Patran supports the OpenGL graphics library. Hexagon recommends using the Patran OpenGL graphics driver for those hardware devices that support it. To engage the OpenGL drivers, set the following line in settings.pcl to "YES":

¹ Some graphics boards that support Hardware 3D mode require an additional Z-buffered device and/or layered software product provided by the hardware vendor. See the specific hardware platform section in this chapter to find out if your graphics board requires a Z-buffered device or a layered software product.

```
pref_env_set_string( "graphics_hardware", "YES")
```

2D Graphics Accelerators

Some systems offer optional 2D graphics accelerators to improve X11 performance. Since Patran is a graphically intensive product, we recommend that you use a 3D graphics accelerator for optimum performance. Patran is only tested with the graphics boards shown in the system specific tables.

Potential Color Flashing Problem

If Patran is running with other X applications, the colors may flash if the mouse is moved outside of an Patran window.

Though harmless, the flashing occurs if Patran tries to allocate colors in the system's default color map, when another X application has already allocated the color map. Patran instead creates its own custom color map.

As long as the mouse is in an Patran window, Patran uses a custom color map and the colors will be correct.

Additionally, the following parameter in the `settings.pcl` file allows adjustment of the number of colors Patran tries to use. Lowering this value may also solve color flashing problems.

```
pref_env_set_integer( "graphics_colors", 120 )
```

Do not lower the number of colors below 64.

Display Resolution

Hexagon recommends a minimum display resolution of 1280x1024.

Anti-aliasing on Nvidia Graphics Cards on Linux

Enabling anti-aliasing on certain Nvidia graphics cards can eliminate jagged lines in Patran. Below are the settings for enabling or disabling anti-aliasing on some Nvidia video cards.

For the GeForce, GeForce2, Quadro, and Quadro2 Pro.

<code>__GL_FSAA_MODE</code>	
0	FSAA disabled
1	FSAA disabled
2	FSAA disabled
3	1.5 x 1.5 Supersampling
4	2 x 2 Supersampling
5	FSAA disabled

For the GeForce4 MX, GeForce4 4xx Go, Quadro4 380,550,580 XGL, and Quadro4 NVS.

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	2 x 2 Supersampling
5	FSAA disabled

For the GeForce3, Quadro DCC, GeForce4 Ti, GeForce4 4200 Go, and Quadro4 700,750,780,900,980 XGL

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	4x Bilinear Multisampling
5	4x Gaussian Multisampling

For the GeForce FX, Quadro FX

__GL_FSAA_MODE	
0	FSAA disabled
1	2x Bilinear Multisampling
2	2x Quincunx Multisampling
3	FSAA disabled
4	4x Bilinear Multisampling
5	4x Gaussian Multisampling

Higher sampling rates will result in decreased graphics performance in Patran.

6

Problems & Resolutions

- Startup Failures and Fatal Errors 90
- Errors in Functions and Opening Databases 91
- Cosmetic Problems and Questions 94
- Crash Reporting System 97
- FLEXlm and Licensing Problems 98
- Changes of Behavior in QT version of Patran 106

Startup Failures and Fatal Errors

This section covers problems that cause crashes or that prevent Patran from starting.

Problem 1: Patran comes up briefly, then disappears with no messages

Windows

Resolution 1:

1. Go to Start/Run and type REGEDIT
2. Delete the key:
`HKEY_CURRENT_USER\Software\MSC.Software Corporation\MSC.Patran`
3. Exit registry.
4. Start Patran again.

Problem 2: System open error on text I/O

Any When I attempt to start up Patran, I see the message:

`System open error on text I/O`

Resolution 2: Patran does not have write permission to the working directory.

Problem 3: Patran in skin mode crashes/aborts during start-up with message:
MSC.Patran has stopped working - Close the Program

Windows This occurs on a system that has Windows installed with old `msvcrt.dll`.

Resolution 3: Install all updates available for your Windows operating system.

Problem 4: When double-clicking on the Patran desktop icon, a command window pops up briefly and disappears, then nothing else happens. How to make Patran run on Windows 11?

Windows This occurs on a system that has Windows 11 installed.

Resolution 4: There are several ways to make Patran run. Any of the following methods will work:

- Run from a command window
- Add cmd /c to the shortcut command
- Use legacy console
- Run as Administrator

For more information, refer to:

<https://simcompanion.hexagon.com/customers/s/article/Patran-on-Windows-11>

Errors in Functions and Opening Databases

This section covers error that affect basic Patran functionality such as use of the mouse, keyboard, or menus. Problems creating, opening, or converting databases are also covered here.

Problem 1:

Windows
LINUX

File is not a valid database; “PDF Open Error”

I attempt to open an old database and get the following message in a dialog box:

```
File is not a valid database
```

In the root window (the window from which Patran was run) I see the messages:

```
PDB ERROR : PDF OPEN ERROR: Can't XDR decode the header block.  
PDF ERROR: File '/tmp/blair/template.db' is probably not a pdf  
file.  
PDB ERROR : CMF_FILE_PROB_NOT_PDF - File is probably not a pdf  
file.  
  
p3convert 7.0 initiated at Wed Apr 1 11:05:02 PST 1999  
  
Creating (or updating) marker file for /tmp/blair/template.db  
  
/msc/patran/bin/exe/dbVersion[57]: /usr/interbase/bin/qli:  
not found.  
/msc/patran/bin/exe/dbVersion[70]: /usr/interbase/bin/qli:  
not found.
```

Resolution 1:

The PDB errors indicate that the PDB database system does not recognize this file as a PDB database. This typically means that the file is an older Patran database and is in InterBase format. PDB automatically spawns p3convert.

See [Upgrading Databases, 57](#) for information on the p3convert utility.

In this case, p3convert fails with dbVersion errors. This indicates that /usr/interbase does not exist or is not properly installed. InterBase is required to convert Patran databases from versions prior to version 8.

Problem 2:

Windows
LINUX

PDF Open Error: Can't open file; “File's schema version doesn't match”

I attempt to open an old database and get the following message in the root window (the window from which Patran was run):

```
PDB ERROR : PDF OPEN ERROR: Can't open file '<database>'  
PDF ERROR: File's schema version: 'PATRAN_2_1_a' doesn't match  
requested version  
PDB ERROR : CMF_FILE_BAD_SCHEMA_VER - File schema version does  
not match  
Requested file not a valid database
```

Resolution 2:

These errors indicate that the database schema version is not recognized as a Patran database for the current or an earlier version. The most likely cause is an attempt to open a database from a later version of Patran. For example, opening a version 9 database in version 8.5 will produce a message similar to the above.

- Problem 3:** Cannot be opened for write access. It may already be in use.
- LINUX** I attempt to open a new or existing database in an NFS mounted directory and get a message in the LINUX window:
- ```
dbname.db cannot be opened for write access. It may already be
in use
by another process, or may lack the necessary permissions.
Cannot continue.
```
- Resolution 3:** Patran, like any software using file locking, requires NFS and RPC file locking daemons on the client and NFS server. These names of these daemons will be differ between platforms.
- Problem 4:** Objects cannot be rotated using two button mouse.
- LINUX** I have a two button mouse. Pressing both buttons at the same time does not seem to emulate the third button and I am unable to rotate items in Patran
- Resolution 4:** Assuming that you have installed the Linux drivers associated with your mouse, check the XF86config file (part of XFree86). You can turn on/off middle mouse button emulation. Note that XFree will look at XF86config-4 etc. before looking at XF86config.
- Problem 5:** As Patran support for 32 platform is discontinued, how to open an old 32 bit Patran database in the latest version of Patran?
- Windows**  
**LINUX** I have an old database created by an older version of 32-bit Patran on Linux. Can I open it in 64-bit Patran on Windows?
- Resolution 5:** A Linux 32-bit Patran database can be opened directly in latest version of Patran on Linux 64-bit. It can then subsequently be ported to Patran on a Windows 64-bit system.
- Problem 6:** Patran hangs while importing Nastran Input deck or fails to import it on Linux platform.
- LINUX** I attempt to import Nastran Input deck but Patran either hangs or fails to import it.
- Resolution 6:** The Korn shell (ksh) is required to be installed on Linux operating system for importing Nastran Input deck. Please make sure, it is properly installed.

## Cosmetic Problems and Questions

This section covers warnings and cosmetic problems such as colors or fonts. It also includes several frequently asked questions about Patran and related products.

**Problem 1:** Unable to allocate x colors

Windows  
LINUX

When I execute Patran, I get the error:

```
Unable to allocate 120 colors. Lower the
"graphics_colors" setting in settings.pcl (but not less
than 64).
```

**Resolution 1:** This indicates one of the following:

- Your workstation or X terminal does not have enough bit planes of color to support at least 120 colors. Patran requires the workstation, or X terminal, have at least 256 simultaneous colors (8bit planes).
- There are other X applications that are concurrently being displayed on your workstation or X terminal, that have allocated colors from the terminal's color lookup table, and Patran is unable to allocate 120 colors.

Either reduce the default 120 colors specified in the `settings.pcl` file, or exit one or more of the other X applications that are running. See [The settings.pcl File, 47](#).

**Problem 2:** Bad colors; bad font

Windows  
LINUX

When I start up Patran, either the colors look funny, the font lettering looks too large, or I must manually cursor place each Patran window that pops up on the screen.

**Resolution 2:** Make sure that you properly loaded the Patran application resource files from the Patran installation files. See [LINUX Application Resources and Fonts, 45](#).

**Problem 3:** How do I Change fonts?

Windows  
LINUX

I would like to override the default font that Patran uses with one that I prefer. Is there a way to do this?

**Resolution 3:** See [LINUX Application Resources and Fonts, 45](#).

**Problem 4:** How do I take advantage of the 3D graphics accelerator card; hardware graphics?

Windows  
LINUX

The Patran 3D driver seems to run slow even though my workstation has a graphics accelerator board. Is there a way to have Patran to take advantage of the graphics board?

**Resolution 4:** Yes, through the `settings.pcl` file that is usually located in the user's home or default directory. See [The settings.pcl File, 47](#). For additional information on the Patran 3D graphics driver see [TCP/IP Requirements, 82](#).

- Problem 5:** Fonts in Patran Help on LINUX are too small to read  
LINUX
- Resolution 5:**
1. In Firefox go to the Tools/Options Menu and select the Content tab.
  2. Select the Default font and Size.
  3. Select Advanced.
  4. Deselect 'Allow pages to choose their own fonts, instead of my selection above'.
  5. Click OK.
  6. Click OK in the Content window.
  7. Restart Help.
- Problem 6:** No Open Motif libraries on SUSE11 SP2  
LINUX
- Error Message:
- ```
Error while loading shared libraries: libXm.so.4: cannot
open shared object file: No such file or directory.
```
- Resolution 6:** Install Open Motif libraries manually. They are not part of the default installation of SUSE11 SP2 operating system.
- Problem 7:** Font problem on RHEL6.3/RHEL5.7
LINUX
- Warning:
- ```
Cannot Convert String adobe-newcentury-rulebook-medium-
r-normal-...to -type Fontset System shutdown.
```
- Resolution 7:** Fonts are not installed properly. Re-install the fonts.
- Problem 8:** Missing or partially drawn widgets and forms RHEL6.3  
LINUX
- Some widgets are partially drawn or totally missing on forms and in particular scrolling a form upwards causes the form's widget graphics to partially disappear.
- Resolution 8:** This is an X library incompatibility. An older version of the library is needed. Create the following symbolic link or ensure that it exists in \$P3\_HOME/lib:
- ```
ln -s /usr/lib64/libXm.so.3.0.2 $P3_HOME/lib/libXm.so.4
```

- Problem 9:** In Patran viewport on RHEL6.7, solid geometry and its mesh are not appearing properly in smooth shaded mode.
- LINUX** The reason behind this problem might be the old graphics driver installed on the system.
- Resolution 9:** Please update the graphics driver on your system.
-
- Problem 10:** Patran classic version overlapping issue with task bar on RHEL7.1
- LINUX** When the classic version of Patran is invoked with GNOME Classic environment session type on RHEL 7.1 platform, the menu items that overlap the task bar fail to open the corresponding forms.
- Resolution 10:** Please set the screen resolution to maximum or reduce the font size. For more details on font settings, please see: [LINUX Application Resources and Fonts, 45](#).
- If the problem persists, we recommend you to use another Linux window manager such as KDE or GNOME.
-
- Problem 11:** Unable to set XLFD font in Patran.
- Windows** XLFD font name is not supported in the new version of Patran. This is a limitation of
LINUX the new user interface.
- Resolution 11:** You need to pass Font family name as command line argument to set respective font for Patran.
- Raw font strings (XLFD) are no longer supported.
-
- Problem 12:** Minimize, Maximize, and Restore buttons not visible on the latest Linux platforms.
- LINUX**
- Resolution 12:** Switch ON the ‘Minimize’ and ‘Maximize’ toggles in the ‘Window Titlebars’ section of the ‘Tweaks’ application for displaying them in Patran’s title bar.
-
- Problem 13:** When accessing Patran on a remote Linux machine via MobaXterm (or Putty), the graphics viewport screen flickers while navigating (rotate/pan/zoom) the model.
- LINUX**
- Resolution 13:** Change the viewport background color to a non-gradient (i.e. any plain solid color) color.

Problem 14: When accessing Patran on a remote Linux (RHEL) machine via MobaXterm, the graphics viewport screen fails to render the model and does not respond to any mouse operations.

LINUX

Resolution 14: Set the environment variable ‘`__GLX_VENDOR_LIBRARY_NAME`’ to ‘`mesa`’ over the remote connection through MobaXterm. This ensures that the OpenGL renderer switches to Mesa’s software renderer (e.g. LLVMpipe or softpipe) and resolves the problem.

Problem 15: While accessing Patran via XRDP and VGL on a remote Linux machine, Patran’s graphics viewport becomes transparent if its background color is set to any non-gradient solid color.

LINUX

Resolution 15: Set the “`xserverbpp`” (i.e. the color depth in bits per pixel) variable to 24 in [Xvnc] section of “`xrdp.ini`” file (located at ‘`/etc/xrdp`’ directory) to resolve the transparent background problem.

(The XVNC’s X-Server uses a default color depth of 32 bpp (8 bits per pixel each for RGBA values). It causes the transparency in Patran’s graphics viewport.)

Crash Reporting System

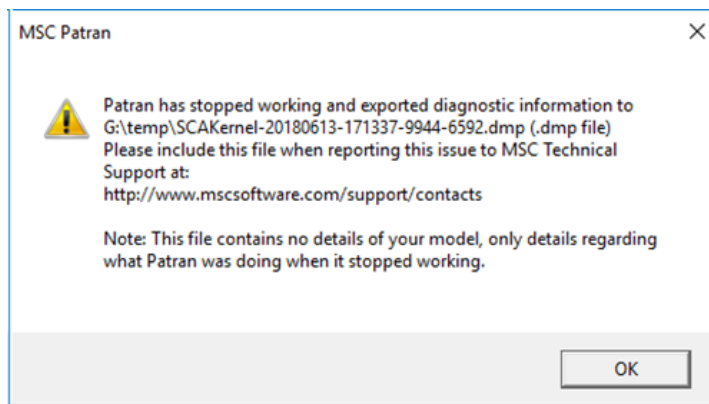
A new crash reporting system is introduced in Patran 2019, which is meant to help Hexagon make the Patran application as robust as possible.

The crash reporting system is supported on both Windows and Linux platforms. When Patran crashes, it shows the following message and records the information about abnormal termination in diagnostic files.

Diagnostic files are not created if Patran becomes unresponsive due to resource shortages, secondary application crashes, and in certain un-handled circumstances such as large memory issues or security problems.

To report such defects, users are requested to describe the scenarios and steps to reproduce the crash in a separate document and send with the generated diagnostic (.dmp) file to the Hexagon Technical Support Team. This information is critical for Hexagon to identify the root cause and fix the application as appropriate.

Windows:



Linux:

On Linux platforms, crash related messages record in the console output terminal with a similar message:

"Warning: Patran has stopped working and exported diagnostic information to current directory (.dmp file). Please include this file when reporting this issue to Hexagon Technical Support at: <http://www.mscsoftware.com/support/contacts>

Note: This file contains no details of your model, only details regarding what Patran was doing when it stopped working.

FLEXIm and Licensing Problems

This section covers problems starting or installing the FLEXIm license servers, and problems Patran has communicating or obtaining licenses from those servers.

General FLEXIm Troubleshooting

Most licensing problems manifest themselves with a security error in Patran or one of its modules, preferences, etc. Check the following information to determine the cause of the license problem. First check the paths and server names in the `license.dat` file [Installing the MSC.License Server Using a New LINUX Server, 110](#).

One of the following conditions must be met for Patran to locate licenses:

- A `license.dat` file containing valid nodelock codes and defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 36](#)).
- If the problem workstation is the FLEXIm license server, it must have a `license.dat` file that includes valid network “FEATURE” codes and correct “SERVER” and “DAEMON” lines. The `license.dat` must be defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 36](#)).

- A `license.dat` that includes a “SERVER” line that references a valid FLEXlm server running the `lmgrd` and `msc` daemons. The `license.dat` must be defined by the `MSC_LICENSE_FILE` environment variable (see [Environment Variables, 36](#)).
- An `MSC_LICENSE_FILE` environment variable that references the hostname and port id of a valid FLEXlm server running the `lmgrd` and `msc` daemons. See [Environment Variables, 36](#) for information on this environment variable.

The `lmdiag` Utility

FLEXlm also provides a diagnostic utility that may indicate why licenses cannot be checked out.

LINUX:

```
/MSC.Software/MSC.Licensing/11.13/lmutil lmdiag -c <license_file_path>
```

Windows:

Use `lmtools.exe`

Where `<license_file_path>` is the full path (including filename) to the `license.dat` file. If the `-c` option is not used, `lmdiag` will operate on a `license.dat` file in the current directory.

FLEXlm Common Problems and Resolutions

Problem 1: Cannot connect to license server

**Windows
LINUX**

I think I have done everything correctly, and Hexagon still cannot connect to my license server. What can I do?

Resolution 1:

You appear to have a valid `lmgrd` and `msc` daemon running on a server, but the software cannot locate licenses. First run the FLEXlm diagnostic utilities to see if there are additional error messages:

LINUX:

```
/MSC.Software/MSC.Licensing/11.13/lmutil lmdiag -c  
<license_file> -n  
/MSC.Software/MSC.Licensing/11.13/lmutil lmstat -a -c  
<license_file>
```

Windows:

Use **Lmtools** in the FlexLm installation

Also check the `lmgrd.log` file on the server to see if any problems occurred in startup.

Next check the following possible causes:

1. The software is not referencing the correct license file or server.

Set the `MSC_LICENSE_FILE` environment variable (in `.cshrc` or `site_setup`) to the correct `license.dat` file (that has the same `SERVER` line as the license file that was used to start `lmgrd`).

LINUX:

```
% setenv MSC_LICENSE_FILE <path>/license.dat
```

Windows:

Set under **Control Panel|System|Advanced|Environment Variables**

or reference the server and port directly (requires no `license.dat` file on client):

```
% setenv MSC_LICENSE_FILE port@host_name
```

2. The server machine is down.

(continued)

(cont.)

3. The vendor daemon is not running. Both the `lmgrd` and `msc` daemons must be running on the server. Check the `lmgrd.log` file to determine why `lmgrd` did not start `msc` and ensure that the `VENDOR` line includes the correct path, etc.
4. The client does not recognize the hostname on the `SERVER` line or set with `MSC_LICENSE_FILE`. Make sure that the local machine can `ping` or `rsh` to `host`. Also, try the telnet test below.
5. The network is down. Same as above.
6. You are running the license file on the server in an old version of FLEXlm. Hexagon recommends at least FLEXlm v11.13.
7. TCP is not running properly on the client or host. See information on installing TCP/IP under Windows.
8. The port selected in the `license.dat` file and the port given to the software via `MSC_LICENSE_FILE` are not the same, or the port is being used by something else.

You can test TCP access to a host and port with the following telnet command:

```
% telnet <hostname> <portnum>
```

9. Note that this will not allow you to login (`telnet` is not actually listening at that port), but it should connect.

Problem 2: Invalid lmhostid

**Windows
LINUX**

My lmgrd tells me that the **hostid** is wrong, or not what it expected. What does that mean?

Resolution 2: If the **hostid** is not correct, you should see something like this in the lmgrd.log file:

```
16:36:58 (MSC) Wrong hostid on SERVER line for license
file:
16:36:58 (MSC) SERVER line says AAAAA, hostid is
"YYYYY"
```

The codes must be regenerated with the output from **lmhostid** or **mscid**:

Windows:

Execute the lmhostid command from the command prompt:

```
c:\>MSC.Software\MSC.Licensing\11.13\lmutil lmhostid
```

This will list the possible 'hostid's' of the machine.

Please choose the Ethernet adapter local area connection hostid, wireless is not preferred.

(Using command ipconfig /all you could check the adapter type)

LINUX:

```
/MSC.Software/MSC.Licensing/11.13/lmutil lmhostid
```

This **hostid** must match the id on the SERVER line of the license.dat file. Note that the codes must have been generated with the correct **hostid** on the SERVER line. If the code does not match, the you will need to obtain new codes from Hexagon.

```
SERVER <hostname> 0000578258 1700
```

Problem 3: FLEXlm: Invalid License File Syntax (-2,134)
Windows
LINUX I get the following error message when attempting to start lmgrd:

```
FLEXLM ERROR MESSAGE:INVALID LICENSE FILE SYNTAX (-
2,134)
```

Resolution 3: Sometimes e-mail alters authorization code files in such a way that may cause problems. You may manually edit the file `license.dat` file.

1. The following is an example of invalid line breaks:

```
FEATURE PATRAN MSC 1997.0801 15-SEP-1998 0
BC32DE95C6860513D696 \ VENDOR_STRING=OPT:PT=PA_V
DA,PA_IGES_Access,PT=PA_ProENGINEER,PT=PA_CATIA,PT=PA_
ACIS
_SAT_Access,PT=PA_NX_Access
```

In this example the `VENDOR_STRING` line was broken in the words `PA_VDA` and `PA_ACIS_SAT_Access`.

2. The following is an example of a continuation character being out of place:

```
FEATURE PA_PATRAN MSC 1998.0801 15-SEP-1998 0
3CB2FE1595049C009A19
\
HOSTID=DEMO ISSUED=05-AUG-1998 ck=248 SN=0
```

The line continuation sign “\” has moved to the following line. It needs to be placed back on the end of the previous line.

Problem 4: Compatibility between FLEXlm versions

Windows
LINUX When attempting to start my `lmgrd` I get an error can't read data when attempting to connect. What is the problem? Are all FLEXlm versions compatible?

Resolution 4: You may be using a version of `lmgrd` incompatible with that of the vendor daemon, Hexagon. The `lmgrd` daemon must be the same to that of Hexagon vendor daemon.

Problem 5: Multiple products use FLEXlm

Windows
LINUX I have products from several companies at various FLEXlm version levels. Do I have to worry about how these versions work together?

Resolution 5: If you are not combining license files from different vendors, the simplest thing to do is make sure you use the tools (especially `lmgrd`) that are shipped by each vendor.

`lmgrd` will always correctly support older versions of vendor daemons and applications, so it is safe to use the latest version of `lmgrd`. If you have combined license files from two vendors, you **MUST** use the latest version of `lmgrd`.

If you have received two versions of a product from the same vendor, you **MUST** use the latest vendor daemon they send you. An older vendor daemon with a newer client will cause communication errors.

Ignore letters appended to FLEXlm versions, for example, v6.0a. The appended letter indicates a patch, and does not indicate any compatibility differences.

Problem 6: FLEXlm `lmgrd`: lost lock

LINUX I get error messages at the prompt or in the `lmgrd.log` file:

```
Lost lock
```

Resolution 6: There is a corruption or someone deleted the `lockMSC` lockfile. This file is created in `/usr/tmp` by the MSC daemon (`c:\flexlm` on Windows):

```
% ls -/usr/tmp/lock*
-rw-r--r-- 1 user eng 0Aug 18 08:23 lockMSC
```

If this file is deleted without shutting down the daemons, or if there is a second MSC daemon running, you will encounter lock problems.

Kill all `lmgrd` and `msc` daemons with `lmdown -c <license_file>` or with the `kill` command. Then run `lmgrd` again. It should write a new `lockMSC` file.

Check that the system does not have a cron or shell, etc. utility to delete the contents of `/usr/tmp` periodically.

On the Windows platform, the lock file will typically be found in
`%P3_HOME%\MSC.Licensing\11.13\`.

Problem 7: FLEXlm `lmgrd`: “Inconsistent encryption”; “Bad code”

Windows
LINUX In my `lmgrd.log` file, there are the following messages:

```
9/27 9:52:08 (MSC) Inconsistent encryption code for
FEATURE
or
9/27 10:08:16 (MSC) Bad code for FEATURE
```


Resolution 7: If you find the following errors when running the `lmgrd`:

There are several possible causes:

1. The `SERVER` or `FEATURE` line in the `license.dat` file was changed or entered incorrectly. A common cause is that the `hostid` on the `SERVER` line was modified.

You may not modify any codes, dates, or ids in the `license.dat` file. A new file must be generated with the correct ids.

2. The codes were not generated correctly perhaps as the result of a miscommunication of or typographical error in the `hostid`.
3. There is a problem with the format of the license file such as an invalid line wrap.

Problem 8: Windows client cannot get licenses from LINUX server

Windows My Windows client cannot obtain FLEXlm licenses from a LINUX server. LINUX clients work fine.

Resolution 8: Check the following possibilities.

- TCP/IP must be installed and functioning on the client. The Windows client should be able to connect via `telnet` (though not necessarily be able to login) to the server.
- The Windows client must recognize the hostname. Reference the TCP address (i.e. `MSC_LICENSE_FILE=27500@192.21.10.1`) instead of the server hostname (i.e. `MSC_LICENSE_FILE=27500@server1`).
- The hostname listed in the `license.dat` file on the server must be recognizable by the client. For example, the Windows client must be able to ping `server1` if the `SERVER` line in the `license.dat` file is `SERVER server1`. . . . It is possible to use the address in the `license.dat` file. Edit `license.dat` on the server to read:

```
SERVER 192.21.10.1 nnnnnnnn 27500
```

Then restart the `lmgrd` daemon with the `lmreread` command (see [Replacing Codes on an Existing LINUX Server, 113](#)).
- Add the server to the DNS search path of the Windows client. Go to the **Control Panel | Network | Protocols** form. Edit the **Properties** of the TCP/IP protocol. Add the address of the license server to the DNS search list.

- Problem 9:** Restrict licenses to specific users or workstations
Windows
LINUX
Resolution 9: I want to restrict license availability to certain users or workstations. Is there a way to do this?
The FLEXlm options file can restrict availability of licenses (even particular products) to certain users or clients. For more information please contact Hexagon Support at: msc_lic.support@mscsoftware.com
- Problem 10:** Set up redundant servers
Windows
LINUX
Resolution 10: I want to spread my licenses over multiple servers to improve reliability. Is this possible?
Yes. FLEXlm allows licenses to be spread across three simultaneous servers of which at least two must be running to obtain licenses. You must request this from your Hexagon sales representative. For more information please contact Hexagon Support at: msc_lic.support@mscsoftware.com
- Problem 11:** Obtaining license file from Hexagon
Windows
LINUX
Resolution 11: How do I get licenses now that I have the product?
Contact your Hexagon sales representative. You must have the `lmhostid` for your server available. See [Obtain a Patran License File for Your Server, 110](#).

Changes of Behavior in QT version of Patran

Following is a list of behavioral changes in the *QT* version of Patran compared the *Classic* version:

- The following display symbols for graph data points are not supported: FillDiamond, FillTriangle, FillArrowhead, Hexagon and FillHexagon.
- Chart control does not support different colors for different XY plot Curve Titles on the legend, hence the option is not visible.
- Chart control does not support Integer label format, hence this option is not available.
- Some options in XY Plot under Modify XYWindow, Legend and Modify Title are only available interactively through direct editing. They have been removed from the user interface. For example, the Legend cannot be moved to X, Y locations for a given value. Although, the Legend can be moved to five (5) pre-defined positions.. This can be done by right-clicking on the Legend.
- The viewport design has changed to adopt a multiple document user interface (MDI) with a tabbed view. In tabbed view, the Minimize, Maximize & Close buttons do not appear, but they do appear in tiled view. To tile the viewports, use the **Menu | Viewport | Tile** menu or in the right-bottom corner there are two (2) buttons provided to tile and cascade viewports.
- Right Click Menu or the Context Menu on the file or folder in the File Dialog does not show the same options as compared to the previous File Dialog. The only options available are: Show Hidden Files and New Folder.

- The File Dialogue preserves the name of the previously selected file.
- The **Line Color** option in **Model Tree Configuration** has been removed.
- The mouse does not move/focus to other windows while the Right Mouse Button (RMB) menu is displayed. Instead it shows the RMB menu items for the previously selected option.
- When the color of a graph object (such as an axis) changes to blue when clicked is an indication that the object is highlighted or selected.
- Patran is unable to call 'CallPCL(pclFunctionName)' API on Linux if the PCL function is defined within the double quotes (“...”).
- To load an icon (.xbm file) through PCL customization, the file definitions should not contain special characters such as "/". A possible solution is to replace the special character with "." or "_"
- Software Rendering is not supported. Hence, the **Hardware Rendering** toggle on the *Graphics Preference* form cannot be turned OFF and **2D Graphics** animation method on the *Results* form is not available.
- An additional variable `HTML_TEXT_ENCODING` is required to be set for Acumen:

```
set HTML_TEXT_ENCODING=<CHARSET>
```

where `<CHARSET>` is the character set encoding used in the HTML files (UTF-8, SHIFT-JIS, etc)

Example:

```
set HTML_TEXT_ENCODING=UTF-8
```

```
set HTML_TEXT_ENCODING=SHIFT-JIS
```

This variable displays correct character sets in the HTML widget. QT's Web Engine module usually detects the appropriate character set encoding, through the meta header information in the HTML files/content. But if it fails to display the characters correctly, setting this variable enforces the Web Engine to set the required encoding and display the characters correctly.

- The File Dialog used in the Acumen framework displays only English characters. It does not support other languages such as Japanese characters.
- Insight timer procedure does not get called during an animation run if there is also simultaneous mouse clicking on menu/widgets. This also can cause rendering issues in some cases.
- The default font type in Patran 2019 is changed to “Tahoma”. You can choose a different font type by passing the parameter `"-fn "` while starting Patran.

A

Installing the MSC.License Server

- Overview 110
- Installing the MSC.License Server Using a New LINUX Server 110
- Installing MSC.Licensing Using a New Windows Server 112
- Replacing Codes on an Existing LINUX Server 113
- Replacing Codes on an Existing Windows Server 114
- Uninstalling FLEXlm on LINUX 115
- MSC_LICENSE_FILE and LM_LICENSE_FILE 115
- Additional Documentation 116

Overview

The following steps are a simple summary of FLEXlm installation as it pertains to Patran. The MSC Licensing software is now delivered via its own Product Page on the SDC. Installers for the MSC Licensing software are provided on a number of hardware platforms. Delivering the MSC Licensing software separately from the individual Hexagon products provide the updates to the licensing software more effectively. For more specific information, or information on integration with other products using FLEXlm, consult the FLEXlm documentation. See [Additional Documentation, 116](#). If there are any questions, please contact Hexagon Technical Support for assistance.

When Patran executes, it locates the license file using the variable `LM_LICENSE_FILE` or `MSC_LICENSE_FILE` set to a port number and a server name, e.g. `27500@SERVER_NAME`.

The current variable value is displayed in the session file, e.g.

```
$# FLEXlm initialization complete.  Acquiring license(s) ...  
$# License File: 27500@SERVER_NAME
```

The `lmgrd` daemon determines what node and port are associated with the vendor daemon, `msc`, and returns that information to Patran. The application then contacts the vendor daemon which grants licenses if they are available.

Note: License borrowing is currently not supported.

Installing the MSC.License Server Using a New LINUX Server

Obtain a Patran License File for Your Server

To obtain a license file from Hexagon, you need to determine the `hostid` of the machine that will function as your license server. On LINUX workstations the Flexlm installation program (e.g. `msc_licensing_helium_linux64_a.bin`) obtains this information for you, or you can run the `lmhostid` utility.

```
# /MSC.Software/MSC.Licensing/Helium/lmutil lmhostid
```

Send the `hostid` to your Hexagon sales representative to obtain your permanent license. Flexlm utilities are available at:

https://mscsoftware.subscribenet.com/control/mnsc/product?child_plnID=593623

Place the License File on the Server

The Flexlm installation program (e.g. `msc_licensing_helium_linux64_a.bin`) automatically installs the `license.dat` file if you provide it during installation.

If you have other FLEXlm products you will need to integrate the new Patran license. See [Additional Documentation, 116](#) for documents that will provide instructions.

The license file may be located anywhere on your license server. Hexagon recommends locating it in `/MSC.Software/MSC.Licensing/Helium/license.dat`.

Clients with network-licensed software installations are encouraged to employ the most recent versions of the FLEXlm and Hexagon licensing daemons (`lmgrd`, `lmutil`, `msc`). These binaries maintain downward compatibility, and regular upgrades are recommended, regardless of whether or not the current software application level requires the upgrade. Updates are available at:

https://mscsoftware.subscribenet.com/control/mnsc/product?child_plneID=593623

Check Paths and Server Names in the license.dat File

Check that the `license.dat` file for your installation contains the correct server and port settings.

Below is an example of a license file supplied by Hexagon:

```
-----Begin File-----
# The authorization line length has necessitated display on multiple
# lines. A "\" is used to signify a line continuation. Please enter
# the codes exactly the way they are printed, including the "\"
# continuation character. The VENDOR_STRING field on a feature line must be
# entered on one line only, and must not span more than one line.
SERVER UNKNOWN 0026b985c80b 27500
DAEMON MSC /user_defined_path/msc
FEATURE PATRAN MSC 2013.0712 12-jul-2013 1 4C5DD08866C8 \
VENDOR_STRING=OPT:PT=PA_ACIS_SAT_Access,PT=PA_ProENGINEER,PT=PA_CATIA,PT=PA_IG
ES_Access,PT=PA_NX_Access\
HOSTID=0026b985c7ed ISSUED=11-jan-2013 ck=119 \
SN=1094232-534a9d3eacafbd10430e-d4f2
-----End File-----
```

- The first 5 lines are comments. They can be removed or ignored.
- On the 6th line, `SERVER` must be in all caps followed by the hostname, then the `lmhostid`, then the port the daemon will run on.
- The hostname can be determined by typing “hostname” on the machine you wish to be your license server. Replace “UNKNOWN” on the `SERVER` line with this hostname.
- Verify the `lmhostid` listed on the `SERVER` line by running `'lmutil lmhostid'` command. If the `lmhostid` is not correct, new codes must be generated. Contact your local Hexagon sales office.
- The default port is defaulted to 27500 but can be any free port. If you don't know what ports are free, use the default.

The 7th line is the `DAEMON` line.

- `DAEMON` must be in all caps, followed by `MSC` which also must be in all CAPS. This is followed by the path to the `msc` vendor daemon executable.
- The executable is found in the `'/MSC.Software/MSC.Licensing/Helium/'` directory.

Here is an example of the changes needed to be made for the above file. In this example, the server name is `ind-Ashu`, the installation directory is `/msc`, and port 27500 is busy (27501 is free).

```
# The authorization line length has necessitated display on multiple
# lines. A "\" is used to signify a line continuation. Please enter
# the codes exactly the way they are printed, including the "\"
# continuation character.The VENDOR_STRING field on a feature line must be
# entered on one line only, and not span more than one line.
```

```
SERVER ind-Ashu 0026b985c80b 27500
DAEMON MSC c:/Program Files/MSOFTWARE/MSOFTWARE.LICENSING/Helium/msc.exe
FEATURE PATRAN MSC 2013.0712 12-jul-2013 1 4C5DD08866C8 \
VENDOR_STRING=OPT:PT=PA_ProENGINEER,PT=PA_CATIA,PT=PA_NX_Access,PT=PA_IGES \
HOSTID=0026b985c7ed ISSUED=11-jan-2013 ck=119 \
SN=1094232-534a9d3eacafb10430e-d4f2
```

Start the Manager Daemons

On the license server, start the license manager daemon with the FLEXlm script. Do not execute this as root since it may create a security risk on your network.

```
% /MSC.Software/MSOFTWARE.LICENSING/Helium/lmgrd -c license.dat -l lmgrd.log
```

If the license.dat file is located in /MSC.Software/MSOFTWARE.LICENSING/Helium, this script will start the following daemons:

- lmgrd - the server daemon
- msc - the vendor daemon

Set the lmgrd Daemon to Execute on Reboot

If you are installing using the Flexlm installation program (e.g. msc_licensing_helium_linux64_a.bin) on LINUX, the remaining steps should be done automatically.

Modify the /etc/inittab script to start the lmgrd daemon as a user (this is all one line):

```
msc1:23456:once:su:username -c '(umask 022;
/MSC.Software/MSOFTWARE.LICENSING/Helium/lmgrd -c <license_path> -l <log_file>)'
```

Where \$P3_HOME is the actual installation location and license_path is the location of the license.dat file (i.e. /MSC.Software/MSOFTWARE.LICENSING/Helium/license.dat), and log_file is the file to which the daemon will write messages.

Set Up Clients to Access the Floating License

For setting the file location on clients, set the MSC_LICENSE_FILE environment variable to “<port>@<hostname>”. See [Environment Variables, 36](#) for information on setting environment variables for Patran.

Installing MSC.Licensing Using a New Windows Server

Obtain a Patran License File for Your Server

To obtain a license file from Hexagon, you need to determine the hostid of the machine that will function as your license server.

Execute the 'msc_licensing_helium_windows64_a.exe' available at:

<https://mscsoftware.subscribenet.com/control/mnsc/download?element=11042537>

Execute the `lmhostid` command from the command prompt:

```
c:\Program Files\>MSC.Software\MSC.Licensing\Helium\lmutil lmhostid
```

This will list the possible 'hostid's' of the machine.

Please choose the Ethernet adapter local area connection hostid, wireless is not preferred.

(Using command `ipconfig /all` or `getmac -v` you could check the adapter type)

Place the License File on the Server

The FLEXlm installation portion of the `setup.exe` utility automatically installs the `license.dat` file if you provide it during installation.

If you have other FLEXlm products you will need to integrate the new Patran license. See [Additional Documentation, 116](#) for documents that will provide instructions.

The license file may be located anywhere on your license server. Hexagon recommends locating it in `$P3_HOME\MSC.Licensing\Helium\license.dat`.

When the FLEXlm installation is complete you will be asked to restart your system.

Using Lmtools.exe to Configure FLEXlm

You can use the `lmtools.exe` utility to start/stop, configure, and diagnose your FLEXlm license server. You can access the `Lmtools` utility from the shortcut in the Start menu at `Start>Programs>MSC.Software>MSC.Licensing Helium>FLEXlm Configuration Utility Helium`.

Set Up Clients to Access the Floating License

The `MSC_LICENSE_FILE` environment variable provides the location of licenses to Patran. It can be set in `Control Panel\System\Environment` either with the path and file name to the `license.dat` file, or to `<port>@<hostname>`. See [Environment Variables, 36](#) for information on setting environment variables for Patran.

Replacing Codes on an Existing LINUX Server

Follow these steps if you have an existing Patran installation (Version 7.0 or later) and have received new codes (as a renewal, change, etc.).

Edit the New License File

Place the new codes as a license file in the same directory as the existing `license.dat` file. Name it `license_new.dat`. Change the `SERVER` and `DAEMON` lines in the new license file to include the same port number, server name, and paths as the existing file. For example:

```
SERVER server1 123465 27500
```

```
DAEMON MSC C:/Program Files/MSOFTWARE/MSOFTWARE.Licensing/Helium/msc.exe
```

Replace License File

Rename the existing license.dat file to license_old.dat, and rename the new file to the current license file name (i.e. license.dat):

```
# mv license.dat license_old.dat  
# mv license_new.dat license.dat
```

Restart Daemon

Restart the daemons as follows:

```
# msc/MSOFTWARE/MSOFTWARE.Licensing/Helium/lmdown -c <path>/license.dat  
# MSC.SOFTWARE/MSOFTWARE.Licensing/Helium/lmgrd -c <path>/license.dat
```

Replacing Codes on an Existing Windows Server

Follow these steps if you have an existing Patran installation (version 7.0 or later) and have received new codes (as a renewal, change, etc.).

Edit the New License File

Place the new codes as a license file in the same directory as the existing license.dat file. Name it license_new.dat. Change the SERVER and DAEMON lines in the new license file to include the same port number, server name, and paths as the existing file. For example:

```
SERVER server1 123465 27500  
DAEMON MSC C:\Program Files\MSOFTWARE\MSOFTWARE.Licensing\Helium\msc.exe
```

Replace License File

Use Windows Explorer to rename the existing license.dat file to license_old.dat, and the new file to the current license file name (i.e. license.dat).

Stop and Restart the FLEXIm Service

Using lmttools.exe, available at: c:\Program Files\MSOFTWARE\MSOFTWARE.Licensing\Helium\

1. Click on service/license file and select CONFIGURATION USING SERVICES.
2. Select appropriate license server in box below (if you have more than one).
3. Click ON START/STOP/REREAD Tab.
4. Select stop server and then after a minute start server.

This should restart the flexlm server to use new file.

Uninstalling FLEXlm on LINUX

To uninstall FLEXlm on LINUX, follow this procedure.

Uninstall the license server

To uninstall the server run this command:

```
/MSC.Software/MSC.Licensing/Helium/uninstall
```

Remove the server

To manually uninstall the FLEXlm server remove the following files:

- /MSC.Software/MSC.Licensing/Helium/uninstall
- /MSC.Software/MSC.Licensing/Helium/MSC
- /MSC.Software/MSC.Licensing/Helium/lmgrd

You will also need to remove the entry for the "msc" daemon from /etc/inittab.

The FLEXlm installation is now completely removed.

Reinstalling FLEXlm

If you do not wish to remove the FLEXlm files manually, you can instead reinstall the FLEXlm server. In order to override the previous installation you must install FLEXlm in the same location with the same options as your previous installation.

MSC_LICENSE_FILE and LM_LICENSE_FILE

By default, all FLEXlm products use the environment variable `LM_LICENSE_FILE` to define the location of the license file (i.e. `license.dat`), or the server and port number (i.e. `27500@servername`). This includes Patran products. For example:

```
# setenv LM_LICENSE_FILE /MSC.Software/MSC.Licensing/Helium/license.dat
```

This presents a problem, however, when Patran is used in the same environment with other products (CAD packages, solvers, etc.) that also use FLEXlm. If the `LM_LICENSE_FILE` variable is set to the Patran license file location, these other products may not locate their licenses and vice versa.

For this reason, all Hexagon products use their own variable, `MSC_LICENSE_FILE`, to identify the location of the license file, or the server and port number. Hexagon recommends using `MSC_LICENSE_FILE` for all Hexagon products. However, for all intents and purposes, these variables are equivalent.

```
# setenv MSC_LICENSE_FILE  
/MSC.Software/MSC.Licensing/Helium/license.dat
```

If both environment variables are set, Patran will use the `MSC_LICENSE_FILE` setting.

If you wish more information on `LM_LICENSE_FILE` consult the Flexera's supplied documentation (see [Additional Documentation, 116](#)). For additional information on the `MSC_LICENSE_FILE` variable see [Environment Variables, 36](#).

Additional Documentation

The MSC Licensing User's Guide in PDF format can be found at
<installation_dir>/MSC.Licensing/Helium/.

To obtain additional information and information on auxiliary products such as FlexAdmin, visit the Flexera Software World Wide Web site:

<http://www.flexerasoftware.com/>

B

Testing the Installation

- Test Patran 118
- Test Application Preferences 119
- Test Patran CAD Access 124

Test Patran

The following test procedure verifies that you have properly installed Patran. \$P3_HOME refers to the installation location.

Patran Test Procedure

Login and Change to a Scratch Directory

Login as a normal user (not root) on each workstation that will be running Patran and change to a scratch directory that has at least 6 Mb of disk space (or run in the default directory on Windows).

Start Patran Using the patran Command

1. Start Patran

Linux method:

```
% patran
```

(Make sure \$P3_HOME/bin is part of your command search path.)

When the Patran *Command Line* form appears, the following messages should appear in the window:

```
## Session file patran.ses.xx started recording at <date & time>
## Recorded by: PATRAN Version X.X
## FLEXlm initialization complete. Acquiring license(s)...
## PATRAN X.X has obtained 1 concurrent license(s)...
```

The Patran main form should then display.

Windows method:

Choose Start \ (All) Programs \ MSC.Software \ Patran

The Patran main form should then display.

2. Once the Patran “heartbeat” on the right side is gray, select **File** with the left mouse button. While holding the mouse button down, slide the cursor down to **New** and release the button. A form titled *New Database* will appear.
3. Move the cursor in the box under the heading “File Name.” Press the left mouse button and enter the name “**test.**” Press **OK**.

The following messages should appear in the *Command Line* form:

```
## Copying $P3_HOME/template.db to test.db
## Copy complete. Opening new database.
## Database version X.X created by Release X.X successfully opened
...
## Creating journal file test.db.jou at <date & time>
```

The Patran graphics viewport should appear.

4. Click on the “Geometry” button. Select **Create/Solid/XYZ** on the Geometry form and click “Apply.” This should create a simple Hyperpatch.
5. Exit Patran by selecting **File/Quit**.

Exit Patran

1. Close the `test.db` database and exit Patran by placing the cursor anywhere in the Patran main form and pressing <Control Q>; or select **Quit** from the **File** menu.
2. Remove the files, `test.db`, `test.db.jou` and `patran.ses.01`.
3. The files `settings.pcl` and `.patran.EventMaps` may also have been created. If so, delete those as well.

Test Application Preferences

If you have licensed one or more of Patran's Application Preferences, follow the test procedures in this section.

Setup

Copy and Execute the Example Patran Session File

1. Login as a normal user (not root) on each workstation that has Patran and the Application Preference installed, and change to a scratch directory with at least 7 Mb of disk space:

```
% cd <scratch_dir>
```

2. Copy *one* of the session files listed in into the scratch directory:

Test Session File Names for Patran Application Preferences

Abaqus Preference	<code>\$P3_HOME/test_files/pat3_abaqus.ses</code>
ANSYS Preference	<code>\$P3_HOME/test_files/pat3_ansys5.ses</code> (5.x or 6.x)
Marc Preference	<code>\$P3_HOME/test_files/pat3_mscmarc.ses</code>
MSC Nastran Preference	<code>\$P3_HOME/test_files/pat3_mscnastran.ses</code>

Start Up Patran and Execute the Session File

1. Change to a scratch directory and open Patran. Do not create a new database.
2. Select File from the Patran main form and pick Session| Play. The Play Session File form appears.
3. Select the session file listed under "Session File List." Press Apply.

The session file begins to execute and creates a new Patran database called `test_interface.db`, it then creates a finite element model for the specific Application Preference and creates an input file for the appropriate Finite Element Analysis program.

Verify the Output Files

1. To see if the interface ran successfully, check for the following files in the scratch directory:
 - `patran.ses.01`
 - `test_interface.db`
 - `test_interface.db.jou`

- test_interface.inp (For Abaqus)
 - test_interface.prp (For ANSYS)
 - test_interface.dat (For Marc)
 - test_interface.bdf (For MSC Nastran)
 - test_interface.jba (For ANSYS)
 - test_interface.msg.01 (For ANSYS, Abaqus, and Marc)
2. List the **test_interface.msg.01** file to verify there were no errors during the execution. Some test result files may contain warning messages concerning coordinate transformations. Ignore these warning messages.

Verify Analysis Program Submittal From Patran

The session file you ran did not submit the model to an analysis program (for example, Abaqus, MSC Nastran, etc.). If you have an analysis program available locally or remotely, follow these steps to test the analysis link:

1. Configure analysis environment variables in site-setup. The installation program should have done this install. See Environment Variables for more information.
2. Reopen the `test_interface.db` file in Patran, by selecting Open Database under the File menu.
3. Disable Analysis Manager by entering the following command at the command prompt (the bottom line on the main Patran form):

```
analysis_manager.disable()
```

If you have the Analysis Manager installed, licensed, and configured, see the next section.
4. Choose Analysis from the Patran main form. The Analysis form appears. Make sure “Action” is set to Analyze, “Object” is set to Entire Model, and “Method” is set to Full Run.
5. Press Select Load Cases (Select Subcase for some preferences). A form titled Select Load Cases appears (Subcase Select for some preferences). If the “Default” load case appears under Selected Load Cases, press OK to close the form. If the “Default” load case only appears under Available Load Cases, cursor pick “Default” and then press OK.
6. Press Apply on the Analysis form. Patran executes the interface again, but it also submits the model to the analysis program.
7. When the job completes, check the output from the analysis code to confirm that the analysis completed successfully. For example, the output file for MSC Nastran will be `test_interface.f06`.

Test the Analysis Manager

Follow the instructions below if you are licensed to run the Analysis Manager and you have installed it using the installation program. This test procedure assumes you have configured the Analysis Manager to run with MSC Nastran.

Note:

When Nastran 2019 FP1 and Marc 2019 FP1 are installed in their default installation directory locations (e.g., <C:\Program Files\MSC.Software\...>), Analysis Manager does not work in combination with Patran on the Windows operating system. If you need to run Analysis Manager, it is required to install Patran, Nastran, and/or Marc in directories names that do not contain a space.

Run the Analysis Manager

1. Login as a normal user (not root) on each workstation where you have installed Patran and the Analysis Manager.
2. Change to a scratch directory that has at least 7 Mb of disk space and copy the following file:

```
% cp $P3_HOME/test_files/test_p3am.dat .
```

Start Up the Analysis Manager

1. Start up the Analysis Manager by entering the following:

```
% p3_mgr 1 dat test_p3am 1
```
2. When the the Analysis Manager window appears, press the Apply button (or Submit on Windows). This will automatically submit the `test_p3am.dat` file for analysis. You will hear a beep (on Linux only) when the Analysis Manager has submitted the job. Press the OK button (or Monitor on Windows) on the small form in the center of the monitoring window that appears after a successful submission.
3. An Analysis Manager monitoring window should appear, enabling you to check the status of the analysis job during runtime. When the analysis job completes, you should see a check mark (✓) at the end of the window's graphics bar and you should hear a beep. On Windows, click on the job name under the "Monitor | Completed Jobs" tree tab.

If any errors occur, exit Patran and run administration tool tests as described in Analysis Manager Setup for Linux or Analysis Manager Setup for Windows for more information. Specify the non-privileged user name that is used in the configuration tests. Usually, the Network Host test and the Network Disk test will uncover any problems.

For further information on testing and administering the Analysis Manager, please read [System Management](#) (Ch. 7) in the *Patran Analysis Manager User's Guide*.

Test Laminate Modeler

To test the installation of the Laminate Modeler module, you will need to run an example model such as [Example: Laminated Plate](#) (p. 149) in the *MSC Laminate Modeler User's Guide*.

1. Login as a normal user (not root) on each workstation that will be running Laminate Modeler, and change to a scratch directory that has at least 6 Mb of disk space.
2. Change to a scratch directory, open Patran, and create a new database.
3. Follow the instructions for the example problem in the Laminate Modeler manual.

Test Patran Thermal

Follow the instructions below if you are licensed to run Patran Thermal.

Copy and Execute Patran Session File

1. Login as a normal user (not root) on each workstation, and change to a scratch directory with at least 7 Mb of disk space.
2. Copy the Patran Thermal example session file by entering:

```
% cp $P3_HOME/test_files/test_thermal.ses .
```

Start Up Patran and Execute the Session File

1. Open Patran. Do not create a new database.
2. Select File from the Patran main form and pick **Session | Play**.
3. Select `test_thermal.ses` and press **Apply**.

The `test_thermal.ses` file creates a new Patran database called `test_thermal.db`. It then creates a finite element model for Patran Thermal and executes Patran Thermal.

Verify the Output Files

1. When the session file completes, wait for the Thermal job to complete.
2. To verify that Patran Thermal completed successfully, check to see that the following files are in the scratch directory:
 - `patran.ses.01`
 - `test_thermal.db`
 - `test_thermal.db.jou`
 - `test_thermal.ses`
 - `test_thermala` (directory)
3. Next, enter the directory

```
% cd ./test_thermala
```
4. Then enter the following command:

```
% qstat
```

or

```
% $P3_HOME/bin/qstat
```

(if not in your path)

5. Check to see that the following output appears with no errors by comparing the output to the following example:

```
executing $P3_HOME/p3thermal_files/lib/qstat . . .
***>>> Status File Number 1 <<<***
CPU Time: 0 Hours 0 Minutes 1.61 Seconds
Time = 0.0000000000D+00 SECONDS (Steady State Run)
Iteration # Node # Max Delta Temperature(K) Relax Value
-----
      1      22 -1.0229D+02 1.9086225D+02 1.00000D+00
      2      18 -3.3054D+01 2.3430853D+02 1.00000D+00
      3      13 -1.9924D+01 2.2268794D+02 1.00000D+00
      ...
      31       4  1.9311D-04 1.1103411D+02 1.54534D+00
      32       5  9.5501D-05 1.1232712D+02 1.54534D+00
CPU Time: 0 Hours 0 Minutes 1.90 Seconds
***>>> Q/TRAN STOP <<<***
```

6. Delete the files in the scratch directory.

Test Patran CAD Access

If you will be accessing a CAD system for modeling purposes, locate the appropriate test procedure in this section and test the CAD link. This section includes test procedures for the following CAD Access program:

- ACIS Access
- CATIA Access
- CATDirect
- Pro/ENGINEER Access
- Unigraphics
- STEP AP

Test ACIS Access

You must have access to a ACIS export file (.sat) to test ACIS Access.

Start Patran and Open a New Database

1. Login as a normal user to a workstation that has Patran installed.
2. Change to the default directory where the ACIS intermediate file resides.
3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the .sat File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled "Import" appears.

2. Change “Object” to “Model”, “Source” to “ACIS”.
3. Select a valid “.sat” file and press “Apply”. You should see messages in the Patran Command window indicating that the file is being read. The model should then appear in the Patran viewport.
4. If the import fails, check that you are correctly licensed for the product.

Test CATDirect and CATIA Access

You must have access to either the CATIA v4 model file (CATDirect), or the CATIA v5 CATPart file, or the CATXPRES intermediate file (CATIA Access) to test this product.

Note that Patran CATDirect and CATIA Access are licensed separately.

Start Patran and Open a New Database

1. Login as a normal user (not root) on a workstation that has Patran.
2. Change to the directory where the CATXPRES intermediate file or CATIA model resides.
3. Execute Patran by entering:

```
% patran
```
4. On the Patran main form, choose File. Then choose New and open a new database file called `test.db`.

Access the CATIA Database File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled “Import” appears.
2. Change “Object” to “Model”, “Source” to “CATIA”, and “File Type” to “CATIA v4 Model” or “CATIA v5 CATPart” or “CATIA v5 CATProduct” for Direct Access or “CATXPRES File” for CATIA Access.
3. Select either a valid CATIA model file (CATDirect) or a valid CATXPRESS intermediate file (CATIA Access).

You should see messages in the Patran Command window indicating that the model or intermediate file is being read:

```
CATIA Model File Traversal Completed.
```

The model should now appear in the Patran viewport.

4. If the import fails, check that you are correctly licensed for the product.

Test the ProENGINEER Access

Execute Patran and Create a New Database

1. Login as a normal user to a workstation that has ProENGINEER Access and Pro/ENGINEER installed.
2. Change to the default directory where the ProENGINEER intermediate file resides.

3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the ProENGINEER Part File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled Import appears.
2. Change “Object” to Model and “Source” to Pro/ENGINEER on the form, and select with the cursor the part file under the “Pro/ENGINEER Files” column, or enter the part file name under “Import File.”

You should receive messages in the Patran Command window stating Patran is accessing the Pro/ENGINEER part or assembly file. The Pro/ENGINEER model should appear in Patran viewport.

If Patran did not successfully access ProENGINEER, verify the installation and make sure the workstation is licensed for ProENGINEER Access and Pro/ENGINEER.

Test Unigraphics Access

A Unigraphics part file that was created by UG NX 5.0 or higher is required to test Unigraphics Access.

Start Patran

1. Login as a normal user and change the directory to where a Unigraphics part file resides.
2. Execute Patran by entering:

```
% patran
```
3. Select New... under the File menu. Place the cursor in the box under File Name and press the left mouse button. Enter a name of the new Patran database file (e.g., `test.db`). Press OK.

Access the Unigraphics Part File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled Import appears.
2. Set “Object” to Model and “Source” to Unigraphics-NX on the form, and select with the cursor the part file under the “Unigraphics Files” column, or enter the part file name under “Import File.”
The geometry stored in the Unigraphics part file should appear in the Patran viewport.
3. Exit Patran by selecting Quit under the File menu.
4. Delete the files created by Patran.

Test STEP Access

You must have access to a STEP export file (.stp) to test STEP Access.

Start Patran and Open a New Database

1. Login as a normal user to a workstation that has Patran installed.
2. Change to the default directory where the STEP intermediate file resides.
3. Execute Patran by entering:

```
% patran
```
4. Choose File from the Patran main form and then choose New to open a new database file called `test.db`.

Access the .stp File

1. Once the Patran graphics viewport appears, select Import... under the File menu. A form titled "Import" appears.
2. Change "Object" to "Model", "Source" to "STEP".
3. Select a valid ".stp" file and press "Apply". You should see messages in the Patran Command window indicating that the file is being read. The model should then appear in the Patran viewport.

If the import fails, check that you are correctly licensed for the product.



Patran QT using Exceed

- Remote Session with Exceed 130
- Environment Settings 133

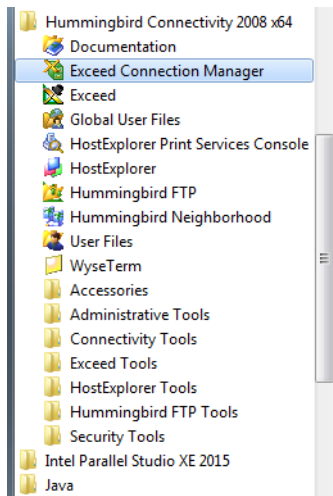
Remote Session with Exceed

When using Patran (QT version) on Linux through Remote Session with Exceed, some configuration changes are required to be made in Exceed. Some environment variables may also need to be defined.

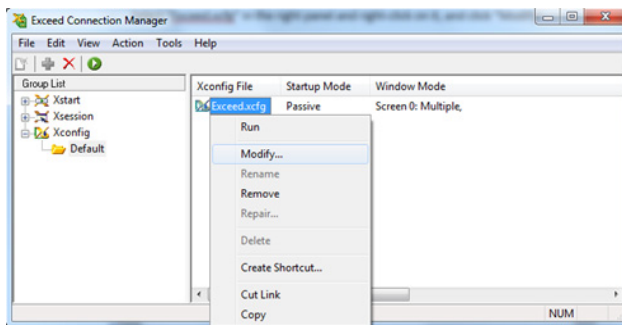
If you face any problem while using Patran on Linux through Remote Session, follow the following instructions.

Modify Exceed Configuration

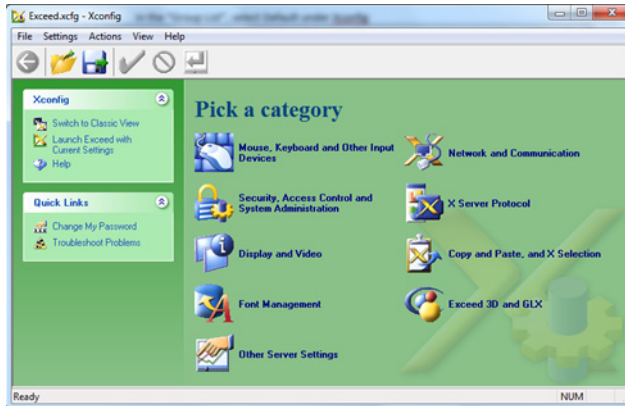
1. Open Exceed Connection Manager (look in “Start -> All Programs”)



2. In the “Group List”, select Default under Xconfig
3. Select “Exceed.xcfg” in the right panel and right-click on it, and click “Modify”



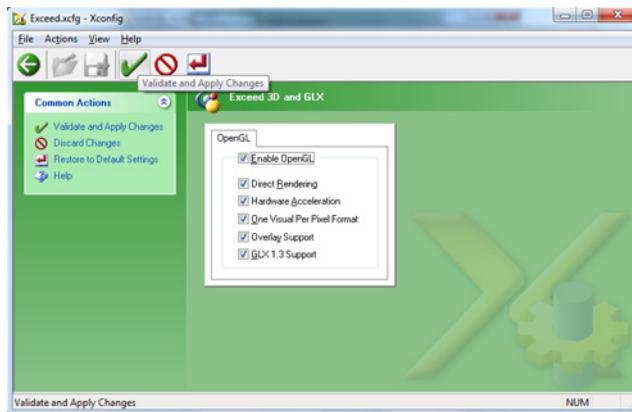
4. After clicking “Modify”, the Exceed Configuration window comes up as shown below:



Categories to be Modified

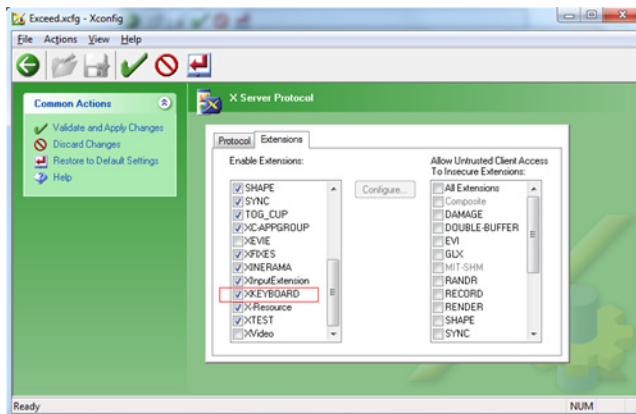
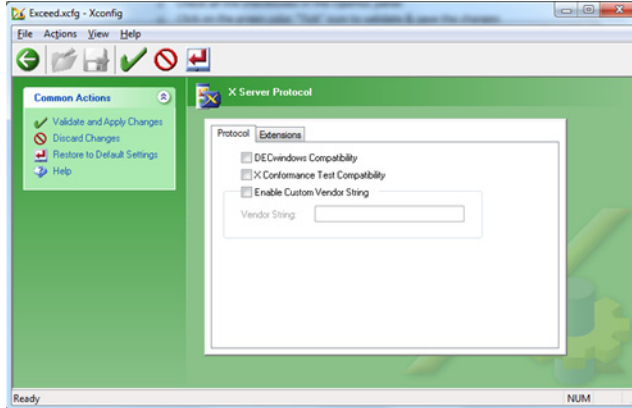
Exceed 3D and GLX

1. Select all the checkboxes in the OpenGL panel
2. Click on the green color “Tick” icon to validate & save the changes



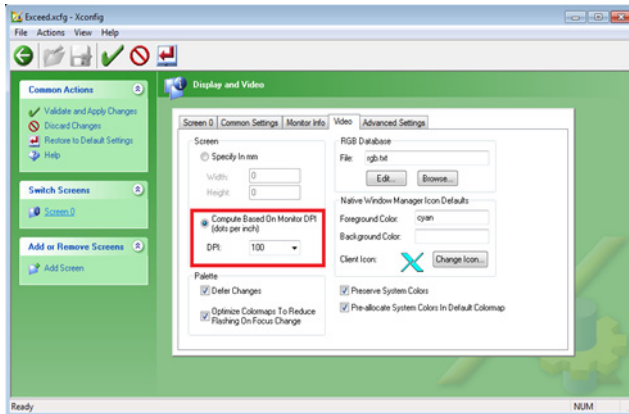
X Server Protocol

1. Click on “Extensions” tab
2. Enable the XKEYBOARD, RANDR, XVIDEO options
3. Click on the green color “Tick” icon to validate & save the changes



Display and Video

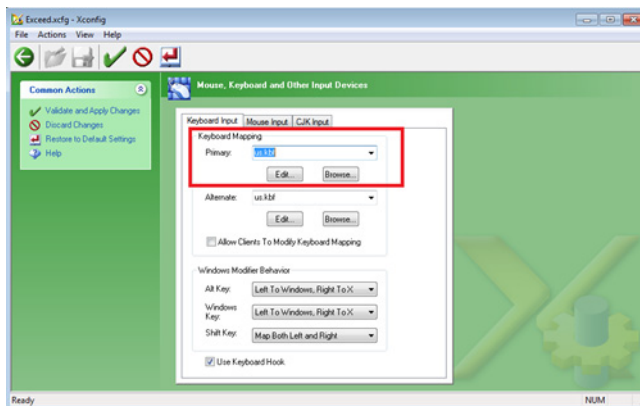
1. Click on Video section
2. Set the DPI to 100



Mouse, Keyboard and Other Input Devices

1. If there is an issues with the keyboard input, the Keyboard Mapping needs to be updated, where the Primary keyboard should be selected appropriately (for example, in the current case “us.kbf” is selected).

Note, by default the “Auto Select” option will be set.



Environment Settings

OpenGL Rendering Problem

1. When running an OpenGL application, the application may fail with the following error, “Error: couldn’t get an RGB, Double-buffered visual”

2. Newer versions of the GLX library favour direct software rendering over accelerated indirect rendering. So, when using OpenGL it's best to set the environment variable `"LIBGL_ALWAYS_INDIRECT"` with value as "1", which forces indirect rendering to be used.
3. For convenience, this variable can be added to the startup or login scripts, for example,
`"export LIBGL_ALWAYS_INDIRECT=1" (Bash Shell)`
`"setenv LIBGL_ALWAYS_INDIRECT 1" (C Shell)`

Index

Patran Installation and Operations Guide

Numerics

- 3D driver features, 86
- 3D graphics settings, 47

A

- Analysis Manager
 - Install LINUX, 32
 - Install Windows, 17
 - test, 121
- application resource file, 46
- application resources, 45

B

- base.db, 58

D

- database
 - PDB databases, 57
 - transport, 59
 - upgrading, 57
- database transport, 59
- dbport utility, 59
- definition files, 53
- DRANAS_NAST_MEM, 44

E

- Ease-of-use enhancements
 - Load/BCs, 62
- environment variables, 36, 54
- errors
 - unable to allocate colors, 94

F

- FLEXlm, 109
 - additional.fmumentation, 116
 - installation, 10
 - license.dat, 111, 113, 114
 - license.dat file, 25, 98
 - LINUX server, 110
 - LM_LICENSE_FILE variable, 115
 - MSC_LICENSE_FILE environment variable, 98
 - MSC_LICENSE_FILE variable, 42, 112, 115
 - nodelock codes, 98
 - replacing codes, 113, 114
 - Windows server, 112
- fonts, 45

G

- GUI
 - Behavior Change, 106

H

- Hardware, 62
- hardware graphics, 86
- Hardware Rendering, 107

I

- installation
 - testing Patran Analysis Manager, 121
 - testing Patran Thermal, 123
- Interbase
 - uninstalling, 20, 33

L

- license.dat file, 25, 98, 110, 113
- limit command, 56
- Linux
 - requirements, 83
 - window managers, 83
- LM_LICENSE_FILE variable, 115

Imdiag utility, 99
Load/BCs enhancements, 62

M

Marc, 119
msc daemon, 111
MSC Marc, 58
MSC_LICENSE_FILE, 98, 112, 115
MSC_LICENSE_FILE variable, 42
mscinfo, 62
MSCP_NIFIMP_BLOCKCOUNT, 44
MT_HEARTBEAT, 44

O

OpenGL, 86
Operating systems, supported, 62

P

p3 command
 options, 53
p3_printers.def file, 53
p3_user_menu.def file, 53
p3convert, 57
p3quickpick.def file, 53
p3toolbar.def file, 53
paging disk space, 64
Patran
 applic. resource file, 46, 53
 command line options, 53
 environment variables, 38, 54
 p3epilog.pcl file, 53
 settings.pcl, 47
PATRAN 2 Preference, 58
Patran Abaqus, 58, 119
Patran Analysis Manager
 applic. resource file, 46
Patran ANSYS, 58, 119
Patran CATIA
 testing, 125
Patran Dytran, 58
PATRAN file, 46
Patran LS-DYNA3D, 58
Patran MSC Nastran, 58, 119

Patran Thermal, 58
 NT installation, 15, 31
 testing, 123
Patran Unigraphics
 testing, 126
pcl files, 47
PDB
 memory use, 42
PDB databases, 57
Platforms, supported, 62
problems and resolutions, 89

Q

qstat utility, 123

R

random access memory, 64
resource limits, 57

S

settings.pcl, 94
 graphics_colors, 87
shell resources, 56
Site Setup, 36
site_setup file, 36
Software Rendering, 107
spaceball, 11
Supported OS levels, 62
Supported platforms, 62

T

template.db file, 58
troubleshooting, 89

U

upgrading databases, 57

W**Windows**

- analysis preferences, 12
- directories, 11
- environment variables, 36
- graphics boards, 84
- requirements, 65
- TCP/IP, 6, 82
- uninstalling, 20

