



SimXpert 2020

Installation and Operations Guide

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Installation and Operations Guide

Introduction

Introduction

The SimXpert Installation and Operations Guide will provide detailed instructions on how to install and configure SimXpert.

The guide is intended to assist System Administrators through the installation of SimXpert. The installation instructions are drafted, assuming that you have basic administration knowledge of the operating system you are working on.

For more specific details, refer to the appropriate section of this guide for the operating system on which the software will be installed.

Organization of This Guide

The guide is organized into the following chapters:

- [Required Hardware and Software Configurations](#)
- [Installing on Microsoft Windows](#)
- [Installing on Linux](#)

Overview of the SimXpert System

SimXpert uses the FLEXlm licensing system. FLEXlm functions as a stand-alone nodelock license server or as a distributed license system. For other issues and questions, please consult the Flexera documentation at their web site, <http://www.flexerasoftware.com/>.

The SimXpert software system consists of several components:

- The core SimXpert pre- and postprocessor
- The CDE database system
- SimXpert workspaces
- The FLEXlm licensing system
- The on-line help system

The name SimXpert refers both to the pre- and postprocessing components, and to the system as a whole.

SimXpert Pre- and Postprocessor

SimXpert is an interactive, multi-discipline simulation environment with integrated solvers and Enterprise Compute connectivity. All pre- and postprocessing, translation, and solver capabilities are accessed from within this graphical environment.

Online Documentation

The SimXpert HTML Help system is a hybrid JAVA/JAVA Script Help system that will be displayed in the SimXpert environment. On Unix systems you may select to view the help system in a standalone browser, we recommend that you use Firefox 1.5 or later.

To specify a desired standalone browser on Unix systems, use the variable `MSC_SX_HELPBROWSER`. If this is set, the value indicates which executable to start as the help browser. In case starting that executable fails, an error message is printed to the standard error stream. The default value is "mozilla". Example: **setenv MSC_SX_HELPBROWSER firefox.**

The SimXpert help system includes a .PDF file of the MSC Nastran Quick Reference Guide (QRG). The contextual help from within SimXpert contains many links to specific pages of the QRG which open in a web browser. For these specific page links to work, the browser used needs to have an embedded .pdf viewer, otherwise the links will open the .pdf file to the first page of the document in a separate PDF viewer application. Currently, 64-bit versions of Internet Explorer do not have an embedded PDF viewer and therefore will result in the QRG being opened to the first page, and not the specific page referenced by the contextual help.

Required Hardware and Software Configurations

Memory and General Requirements

The following table shows the memory and disk space requirement for the SimXpert. SimXpert may actually run with fewer resources than shown, but we recommend these minimums for practical use.

Operating System	System Patches	Disk Space	Memory and Swap Space
Microsoft Windows 7 Enterprise, Professional, and Ultimate Editions (x64)	SP1	8-10GB	4 GB Minimum 16GB (or higher) Recommended Swap = 3-6 GB
Red Hat Enterprise Linux 5 (x86-64)	U4	12-14 GB	2 GB Minimum 16GB (or higher) Recommended Swap = 3-6 GB

For the latest information on supported platforms for upcoming releases of MSC products, please visit the following web site: <http://www.mscsoftware.com/Support/Platform-Support/Default.aspx>.

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

RAM and Swap Guidelines

RAM memory is much faster than disk-based swap memory, increasing the amount of RAM typically improves performance. Memory in this context is the sum of physical RAM and paging (swap) space.

Note: SimXpert could possibly generate memory, “memalloc,” errors when it is unable to obtain sufficient memory.

Microsoft Windows Requirements

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

Windows Requirements	
Hardware Platforms	Intel I3, I5, I7 and Professional Series Intel Xeon, Nehalem, and Westmere
Operating Systems	Windows 7 Enterprise, Professional, and Ultimate Editions (Service Pack 1, 64 bit).
Compiler Versions	Microsoft .NET 2010 (Version 10.0.30319.1), Microsoft .NET Framework Version 4.0.30319 and Intel Fortran Version 12.0.4.196 Build 20110427

Windows Requirements	
Compiler Versions- x64	Microsoft .NET 2010 (Version 10.0.30319.1), Microsoft .NET Framework Version 4.0.30319 and Intel Fortran Version 12.0.4.196 Build 20110427
Other	3 Button Mouse (Gaming mice on WIN7 OS are causing some crashes. This happens in particular with the middle mouse button and horizontal scrolling. These crashes can be avoided by disabling unwanted mouse features through hardware mouse settings. Tools>Options>Navigation and Selection will help you define desirable mouse functionality.)
Graphics Devices	1280x1024 or higher resolution (see Graphics Boards and OpenGL Acceleration, 7)

Graphics Boards and OpenGL Acceleration

Any graphics board that has a driver for Windows XP or Windows 7 and 1280x1024 or greater resolution should function with SimXpert. SimXpert uses standard native OpenGL acceleration and should benefit from any OpenGL acceleration such a graphics card provides. MSC Software recommends using a native OpenGL graphics card. MSC Software has, however, tested the following specific graphics adapters to verify compatibility with SimXpert on Windows. We cannot guarantee the functionality of other graphics devices.

MSC Software recommends using a native OpenGL graphics card. SimXpert uses standard native OpenGL acceleration and should benefit from any OpenGL acceleration that a graphics card provides. Any graphics board that has a driver for Linux, and 1280x1024 or greater resolution should function with SimXpert. MSC Software has tested the following graphics adapters to verify compatibility with SimXpert on Linux.

- AMD FirePro V3800, V3900, V4900, V5800, V5900, V7750, V7900, V9800
- NVidia Quadro FX570, FX 580, FX 1800M, FX 2700M, FX3700, K1100M, K2000, 400, 4000, 5000, 6000
- HP Laptop: ZBook 15 K2100M, ZBook 17 K5100M, Zbook 14, EliteBook 8540w, EliteBook 8740w, EliteBook 8570w, EliteBook 8770w.
HP Workstation: Z820, Z620, Z420, Z400, Z800, XW4600
- Dell Laptop: Precision M4800, Precision M6800, Inspiron M6500, Inspiron M6600
Dell Workstation: T7500, T3400, T3500, T3610

Note:

Not all graphics cards tested on all OS levels. The latest graphics drivers should be used.

OpenGL Rendering Problem

1. When running an OpenGL application, the application may fail or user may face issue in picking the entity. And also user may face issue in Visualizing the model.

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)
```

Windows Certified Hardware

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics 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

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
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
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

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
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
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

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
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
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

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
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
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
HP Z840	Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX4100	4 GB	21.19.141.0
HP Z840	Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX5100	8 GB	21.19.141.0
HP Z840	Intel(R) Xeon(R) E5-2643 v3@ 3.4GHz (2 processors)	AMD Radeon Pro WX7100	8 GB	21.19.141.0
HP Z440	Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX4100	4 GB	21.19.141.0

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
HP Z440	Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX5100	8 GB	21.19.141.0
HP Z440	Intel(R) Xeon(R) CPU E5-1630 v3 @ 3.70GHz (8 CPUs)	AMD Radeon Pro WX7100	8 GB	21.19.141.0
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	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics 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
HPZBOOK1 4	Intel Core i-7 5600 U CPU @ 2.60 GHz	AMD FirePro M4150	4GB	14.301.1002.1006
HPZBOOK1 5u	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	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics 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

Brand-Model	CPU	Graphics Card	Graphics Card Memory (GB)	Graphics Card Driver
Dell Precision 7510	Intel(R) Core(TM) i7-6920HQ CPU @ 2.90GHz ~2.90GHz	AMD FirePro W5170M	2GB	15.201.1701.0
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

Matlab / Simulink Compatibility

SimXpert 2020 supports **Matlab / Simulink R2011a** for Motion co-simulation on Windows.

Linux Requirements

SimXpert supports the following Linux hardware and software.

Linux Requirements	
Hardware Platforms	Intel I3, I5, I7 and Professional Series Intel Xeon, Nehalem, and Westmere
Operating System	RedHat 5.4, 5.5, 5.6, 5.7, 6.0
Motif Version	Open Motif 2.2.3*
Compiler Version	Intel C/C++ version 12.0.4.196 Build 27042011 and Intel Fortran, version 12.0.4.196 Build 27042011
Compiler Version x64	Intel C/C++ version 12.0.4.196 Build 27042011 and Intel Fortran, version 12.0.4.196 Build 27042011
Window Manager	KDE 3.0 or later, Gnome (Enlightenment)
3D Graphics Library Version	Must install vendor supplied OpenGL video driver.
Other	3 Button Mouse
Graphics Devices	1280x1024 or higher Graphics Card (see below)

*SimXpert for Linux requires Motif 2.2 to run. Open motif rpm files are currently not available from either Red Hat or SuSe. They can be downloaded free of charge from <http://www.openmotif.org/download>. MSC has certified that open motif version 2.2.3-2 works correctly for SimXpert

Tested Systems

MSC has tested SimXpert for Linux on the following computer systems:

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

SimXpert and MD 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 512 MB to 2 GB.

Supported CAD Systems

The table below shows which versions of CAD files are supported on which platforms in SimXpert for the Import as Parasolid option.

Import Geometry as Parasolid Supported Versions:

File Type	Supported Platforms	
	Win 7 (64 Bit)	Linux64
IGES	5.2 and 5.3	5.2 and 5.3
STEP	203/214/242	203/214/242
ACIS	All up to R27	All up to R27
CATIA V4	All 4.xx	All 4.xx
CATIA V5	R10 - R29	R10 - R29
Inventor	All up to 2019	All up to 2019
JT	7.0-10.2	7.0-10.2
Creo	13 to Creo 6	13 to Creo 6
Pro/Engineer	13 to Wildfire 5	13 to Wildfire 5
SolidWorks	99 to 2019	99 to 2019
UGNX	11 to NX CR	11 to NX CR

Installing on Microsoft Windows

Overview

SimXpert can be installed on Microsoft Windows using an interactive installation Wizard. This section describes the use of that installation utility as well as additional steps that may be required for modules and external programs.

Note: SimXpert has directories that go many levels deep. If you install SimXpert in a directory below the root, it is possible that you will exceed the directory length limit. Therefore, we recommend installing in the default location. Any disk drive can be used.

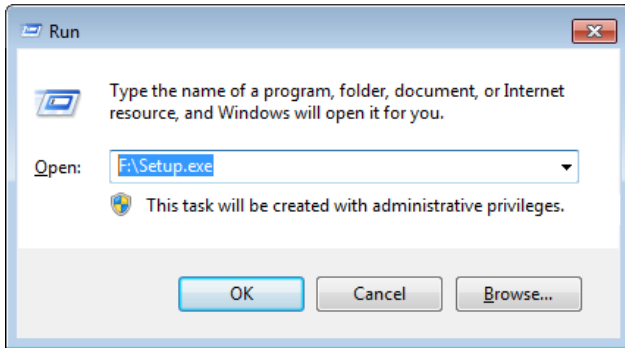
Installation Pre-requisites

1. Log in and exit all Windows programs. In general, you do not need administrator privileges to install SimXpert except as follows:
 - You must have permission to create the installation directory. You may need administrator privilege to grant this permission.
 - Installing the FLEXIm License Server requires administrator privilege.
 - To create installations visible by other users.
 - To utilize file association option.
2. If you are downloading from the Solutions Download Center, download the self-extracting archive (.exe) and follow these steps:
 - a. Copy the self-extracting archive (.exe) file to a temporary subdirectory with enough disk space. Make a note of this location.
 - b. Click on the files 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 the step above.

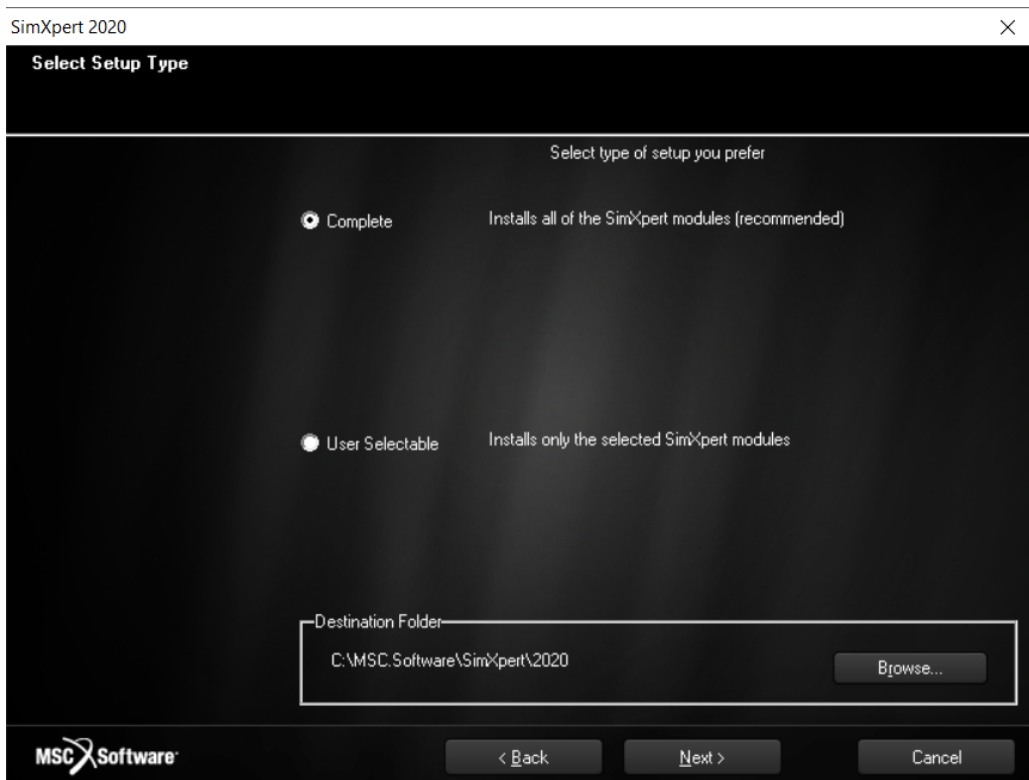
Installing from the DVD

Follow these steps to install SimXpert from DVD:

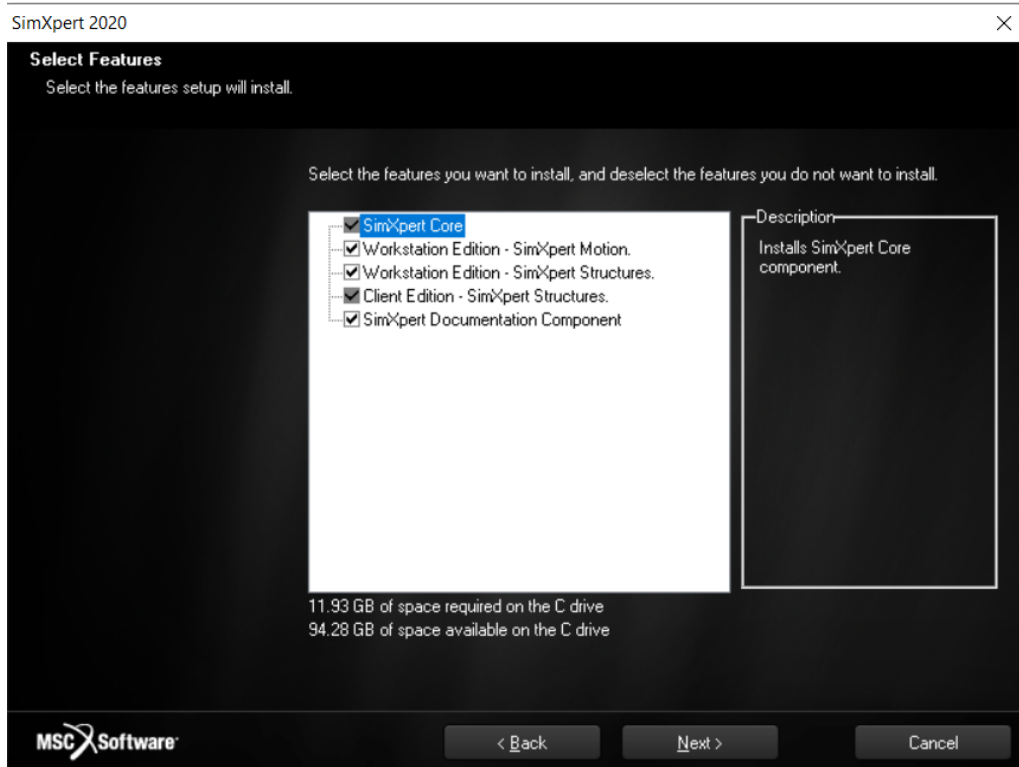
1. Insert the MSC SimXpert installation DVD into the optical drive of your computer and follow any one of the following step:
 - If Autorun window appears then the user need to select the 'Open Folder to View Files' option and run **setup.exe**
 - If installation does not start automatically then select **Run** from the Start menu. You should see the following dialog box on your screen.



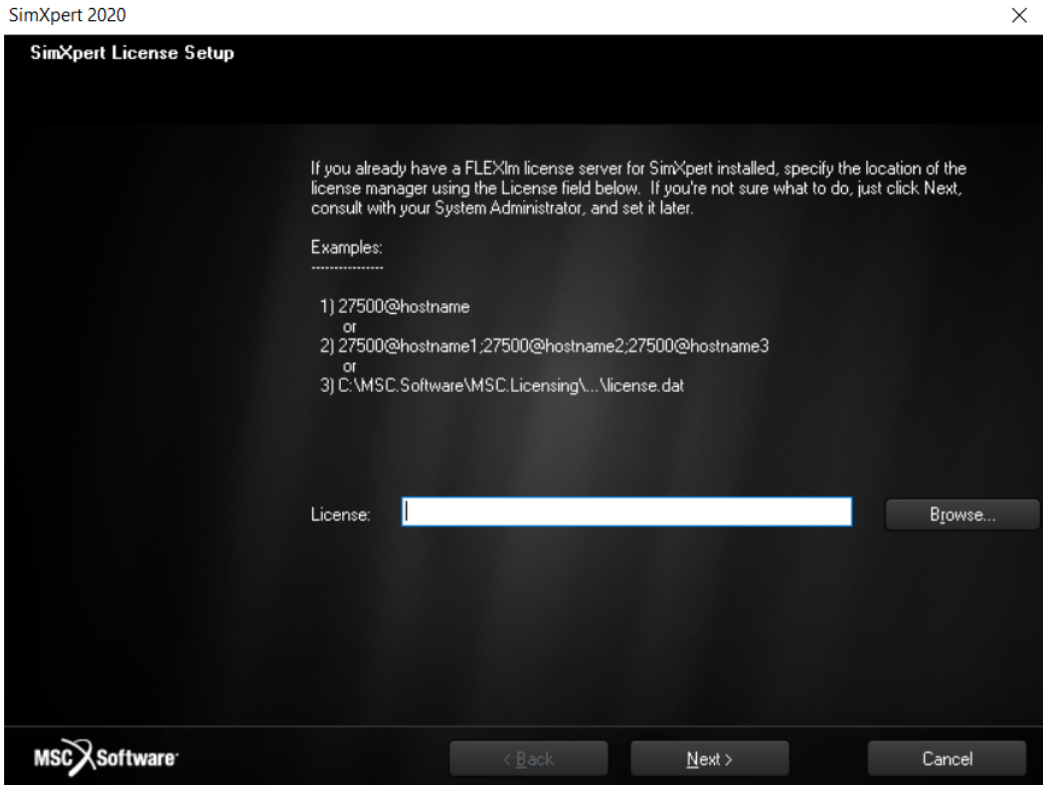
2. Type `x:\setup.exe` and click **OK**, where `x` is your media drive. This begins the SimXpert installation Setup Wizard. Setup attempts to verify the resources necessary to run SimXpert on Windows then opens the main setup window.
3. Select the type of installation. For complete installation, select **Complete**. You can click the **Browse** button to change the location of the MSC SimXpert installation.



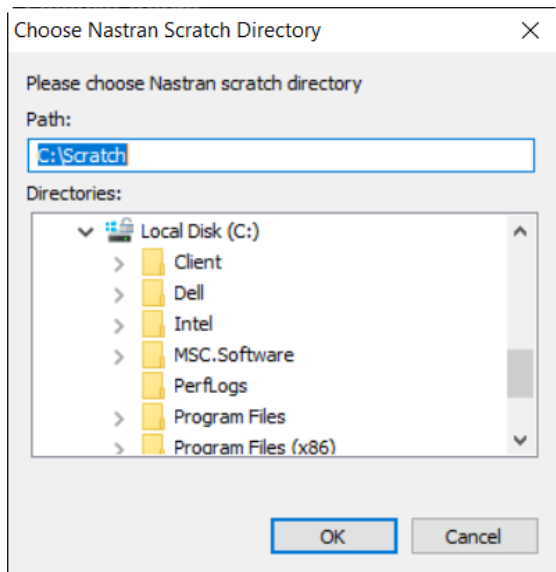
4. In case you selected **User Selectable** in the previous step, you need to select the MSC SimXpert components that you want to install. Every component is described in the Description box. Click **Next** after you have made your choices.



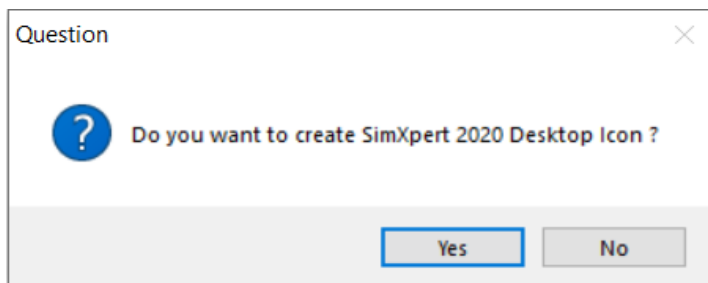
5. Enter License information and click **Next**.



- You will then be prompted to choose the scratch directory to be used by MD Nastran for its analyses.
If the Scratch directory is deleted, Nastran will not run and will not prompt any error.



- Click Yes to create MSC SimXpert icons on the desktop.



Configuring Solvers

MD Nastran Version Configuration

To configure which version of Nastran is used by SimXpert you will need to modify entries in the **simxpert.config.bat** and **SimXpertNastran.config** files. These files are located in *install_dir\SimXpert_version#\operating_system\bin*, for example:

C:\MSC.Software\SimXpert\2020\WIN8664\bin

Statements need to be modified as follows:

simxpert.config.bat

```
IF NOT DEFINED MSCP_LOCAL_NASTRAN_CMD2004 (  
    set MSCP_LOCAL_NASTRAN_CMD2004=path\bin\mdnastran.exe  
)
```

```
IF NOT DEFINED MSCP_NASTRAN_CMD2004 (  
    set MSCP_NASTRAN_CMD2004=path\bin\mdnastran.exe  
)
```

SimXpertNastran.config

```
NASTEXE path\bin
```

```
NASTEXE_2005 path\bin
```

Where *path* is the Nastran installation folder, for example: C:\MSC.Software\MD_Nastran\2010

Motion Client Edition External Solver

Customers who purchased the motion client edition must set the external solver by selecting **Options** from the **Tools** menu. Then select Workspaces / Motion Workspace / Solver / Simulation Settings and select the check box for **Use External Solver** and provide the path to an MD Adams installation.

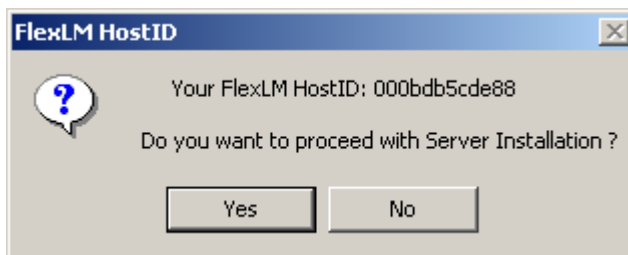
MSC.Licensing Installation (Optional)

SimXpert on Windows XP uses FLEXlm based licensing. If you already have FLEXlm setup as a license server for SimXpert, then you do not need to install FLEXlm.

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

Follow these steps to install FLEXlm:

1. Go to Setup Wizard.
2. Select MSC.Licensing from the main menu, the following dialog box appears.



3. Click **Yes** to proceed with Server Installation.
4. Server Install installs the FLEXlm server. The Setup Wizard will prompt you for an existing license.dat file (supplied by MSC), and will start the appropriate Windows services.

Note: It is highly recommended that you first acquire authorization codes from MSC.

FLEXlm licensing models and examples

MSC SimXpert uses one of the following FLEXlm licensing models:

- Named User licensing

The license provided by MSC Software for SimXpert authorizes a maximum number of users the ability to run SimXpert. Your SimXpert administrator manages the list of users that can run the software. Any Named user may log in and use SimXpert on any machine on the network on which the license server is reachable. When individual users consume multiple licenses, it is possible for the available license pool to be depleted, therefore denying access to other named users.

- OPTIONS file

The OPTIONS file contains the list of Named users of SimXpert. Your administrator maintains the OPTIONS file that lists the Named user login IDs. This way, you control who is a Named user and may change who is a Named user at any time. This is done by editing the file and restarting the license server using the FlexLM lmttools utility. No contact with MSC Software is needed to change the list of Named users.

Named user licensing requires that the path to the OPTIONS file be given on the DAEMON line. Please refer to FlexLM regarding various ways of creating an option file. Some examples are listed below:

```
# ----- Start of License File -----
#
SERVER test 001372blac16653e9e88d620aa22cf 1700
DAEMON MSC C:\MSC.Software\MSC.Licensing\10.8\msc
OPTIONS=C:\your_named_user_options_file
FEATURE SimXpert_Base_MSC 2007.1018 18-oct-2007 2 \
        3DF5E3B2324641CD2145 ISSUED=18-oct-2006 ck=221 \
        SN=1278576-f3f3b558c2772cfcbald
FEATURE SimXpert_WS_Structures MSC 2007.1018 18-oct-2007 2 \
        3DD5E34272E61847BDAB USER_BASED ISSUED=18-oct-2006 ck=72 \
        SN=778626-
```

All SimXpert features except SimXpert_Base need to be included in the options file. Sample options files follow:

Example 1:

```
INCLUDE SimXpert_WS_Crash USER user1
INCLUDE SIMX_Crash_Solver USER user1
INCLUDE SimXpert_WS_Motion USER user1
INCLUDE SimXpert_WS_Structures USER user1
INCLUDE SIMX_Structures_Solver USER user1
```

Example 2:

```
GROUP simxuser user1 user2
INCLUDE SimXpert_WS_Crash GROUP simxuser
INCLUDE SIMX_Crash_Solver GROUP simxuser
INCLUDE SimXpert_WS_Motion GROUP simxuser
INCLUDE SimXpert_WS_Structures GROUP simxuser
INCLUDE SIMX_Structures_Solver GROUP simxuser
INCLUDE SimXpert_WS_Thermal GROUP simxuser
INCLUDE SIMX_Thermal_Solver GROUP simxuser
INCLUDE SIMX_Crash_Solver_DMP GROUP simxuser
INCLUDE SIMX_CATDirect GROUP simxuser
INCLUDE SIMX_CATDirect_V5 GROUP simxuser
INCLUDE SIMX_ProE_Access GROUP simxuser
INCLUDE SimXpert_Geometry_Modeling GROUP simxuser
INCLUDE SimX_ST_NL_Solver GROUP simxuser
```

- Nodelocked

Allows use of MSC SimXpert only on a specifically named machine.

Following is an example of a nodelocked license file:

```
SERVER hostname hostid 1700
DAEMON MSC /your_path/msc
FEATURE V5i_Access MSC 2004.0531 29-apr-2004 8 4CFEF76D59E040FC1343 \
HOSTID=23456789 asset_info="10081+10084 AP209 Gateway (GWS)" \
ISSUED=29-apr-2003 ck=54 SN=1324476-7b13e038600a2cfc952
FEATURE CA_Gen_NASTRAN MSC 2004.0531 29-apr-2004 1 \
0CCEA79DA1987474CE48 HOSTID=23456789 \
asset_info="10081+10054+1003 MSC.Nastran Generative (GPN)" \
ISSUED=29-apr-2003 ck=48 SN=985526-7cfae6677b9688d67940
```

- Concurrent

Allows multiple uses of MSC SimXpert according to the number of licenses purchased.

Following is an example of a concurrent license file:

```
SERVER hostname hostid 1700
DAEMON MSC /your_path/msc
FEATURE CA_Access MSC 2004.0531 29-apr-2004 16 CC3E474D769449F91144 \
asset_info="10081+10084 AP209 Gateway (GWS)" \
ISSUED=29-apr-2003 ck=96 SN=1324476-57778154941b2cfc1719
```

```
FEATURE CA_Gen_NASTRAN MSC 2004.0531 29-apr-2004 2 \  
9C6EA7FD88D85842DEFB asset_info="10081+10054+1003 MSC.Nastran \  
Generative (GPN)" ISSUED=29-apr-2003 ck=167 \  
SN=985526-5a231d9776d588d6df96
```

Silent Installation

The SimXpert 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 SimXpert 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:

```
z:\setup.exe -r [-f1"c:\location\filename"]
```

Note: In the example above, the f1 is the number one, not an L.

The command assumes that the installation program is being executed from the SimXpert DVD-ROM mounted on drive z:, 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:\setup.exe -s -f1"c:\location\filename"
```

Installing on Linux

Overview

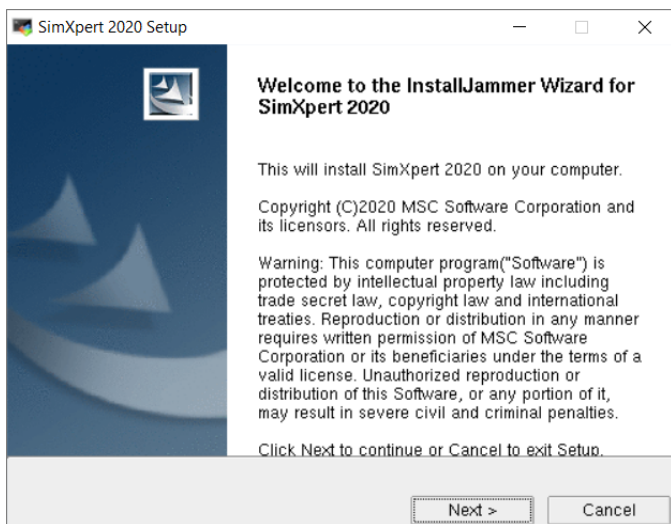
SimXpert on Linux uses an interactive installation Wizard. This section describes the use of that utility as well as additional steps which may be required for modules and external programs.

Note: SimXpert has directories that go many levels deep. If you install SimXpert in a directory below the root, it is possible that you will exceed the directory length limit. Therefore, we recommend installing in the default location. Any disk drive can be used.

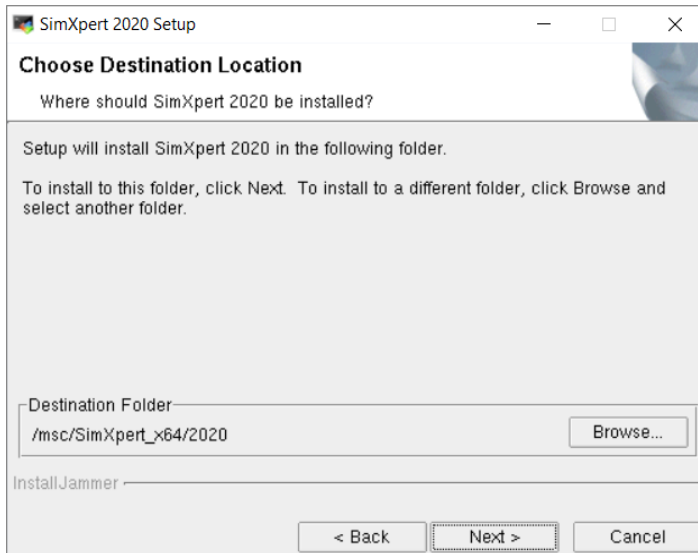
Creating SimXpert Installation

Follow these steps to install SimXpert on Linux:

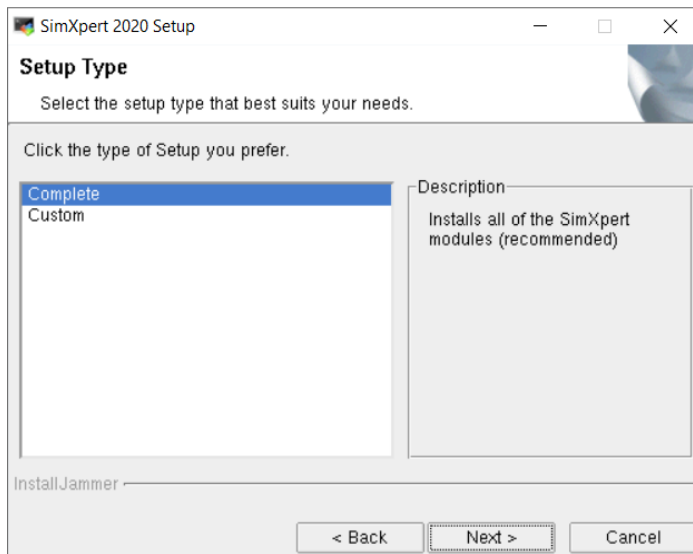
1. Type `/InstallPath/setupLinux.bin`. This begins the SimXpert on Linux installation Setup Wizard.



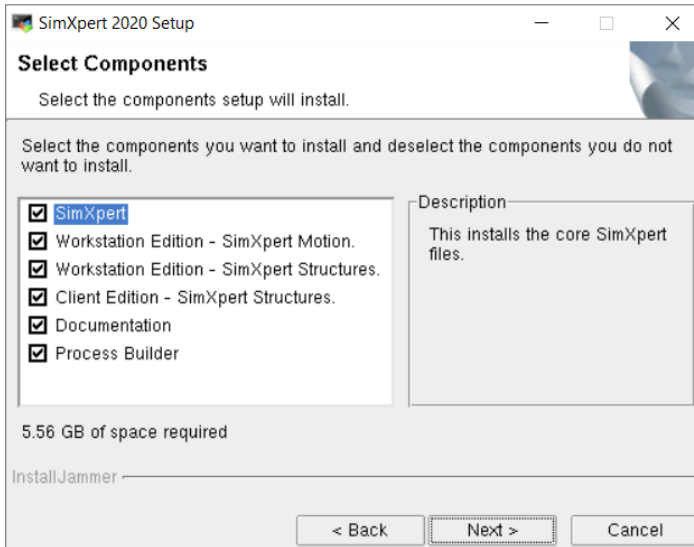
2. Choose the directory where you want to install SimXpert. You must have root privileges to install SimXpert in the /msc directory.



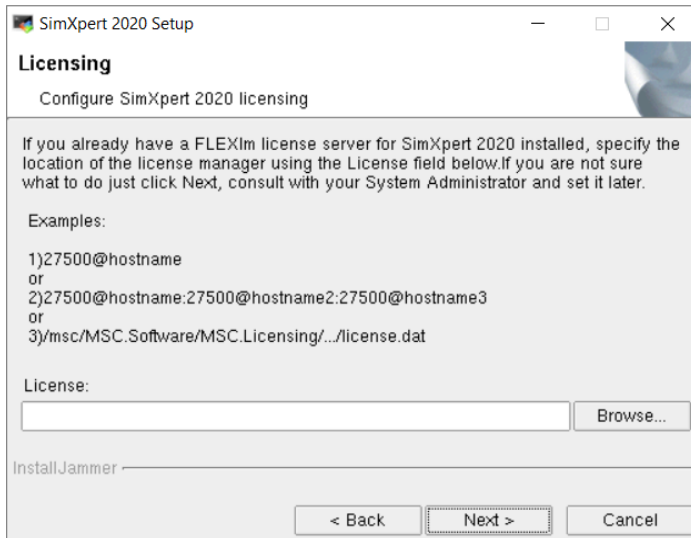
3. Choose whether to perform a 'Complete' or 'User Selectable' installation.



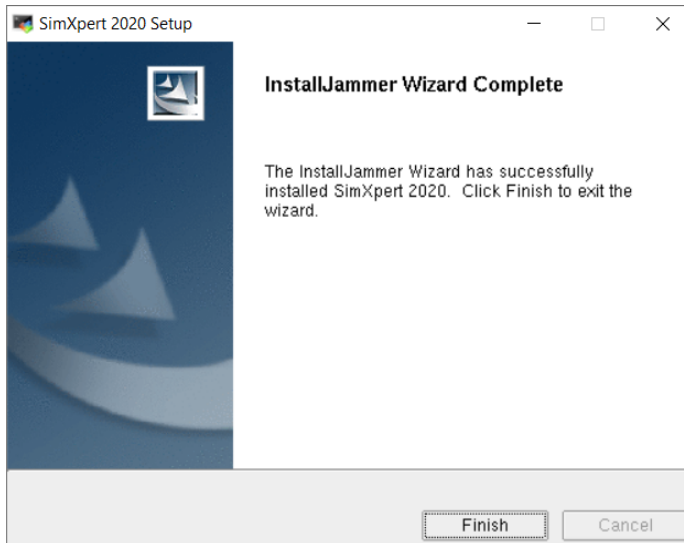
4. For the 'User Selectable' installation, confirm which features you would like to install and click **Next**. If the disk on which you are installing SimXpert does not have enough space, you will receive a warning message and the installation will stop.



5. At the end of the installation, the following Licensing information dialog box appears. Specify the location of the license manager, or click **Next** and set it later with the help of system administrator.



6. Click **Finish** to exit the installation wizard.



This finishes the installation of SimXpert.

Configuring Solvers

MD Nastran Version Configuration

To configure which version of Nastran is used by SimXpert you will need to modify entries in the **simxpert.config** and **SimXpertNastran.config** files. These files are located in *install_dir/SimXpert_version#/operating_system/bin*, for example: */MSC.Software/SimXpert/2020/LX8664/bin*

Statements need to be modified as follows:

simxpert.config

```
#
```

```
if [ -z "$MSCP_LOCAL_NASTRAN_CMD2004" ] ; then  
    export MSCP_LOCAL_NASTRAN_CMD2004=path/bin/mdnastran  
fi
```

```
if [ -z "$MSCP_NASTRAN_CMD2004" ] ; then  
    export MSCP_NASTRAN_CMD2004=path/bin/mdnastran  
fi
```

SimXpertNastran.config

```
NASTEXE path/bin
```

NASTEXE_2005 *path*/bin

Where *path* is the Nastran installation folder, for example: /MSC.Software/MD_Nastran/2010

Motion Client Edition External Solver

Customers who purchased the motion client edition must set the external solver by selecting **Options** from the **Tools** menu. Then select Workspaces / Motion Workspace / Solver / Simulation Settings and select the check box for Use **External Solver** and provide the path to an MD Adams installation.

