Actran 2024.1 Productline Installation

Hexagon AB and/or its subsidiaries

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1.1 Supported platforms and 's Lifecycle

Hexagon is committed to providing the ACTRAN community with releases on the most suitable and popular platforms for numerical simulation. Hexagon constantly monitors the market and evaluate the customers needs in order to remove old-fashion platforms from the supported list and add new ones that are the most relevant.

In this framework, ACTRAN has been compiled and tested on several platforms. The list of the supported platforms is available in the platform definition document, available at: https://hexagon.com/support-success/manufacturing-intelligence/design-engineering-support/platform-support.

Please contact Hexagon if your platform is not in the list.

Remarks:

- "Windows N" is not supported.
- Supported GPUs: NVIDIA Tesla P100, V100 and A100.
- OpenGL is needed to use the Actran graphical interfaces.

Installing and using ACTRAN graphical user interfaces (ActranVI, PLTViewer, WaterfallViewer and WorkflowManager) on linux operating systems require to have the following packages:

- xcb-util-image
- xcb-util-wm
- xcb-util-keysym
- xcb-util-renderutil
- xcb-util-cursor
- libxkbcommon-x11

### 1.1.1 Hexagon’s lifecycle

In order to rationalize the portfolio of platforms, a Product Lifecycle Management (PLM) has been set-up. A dedicated platform evolves in time from the BeginOfSales status to successively the EndOfSales, the EndOfLife and finally the EndOfSupport status.

#### 1.1.2 BeginOfSales

A platform supporting Actran is at BeginOfSales when we provide an external release built on this platform.

#### 1.1.3 EndOfSales

At any point in time, any supported platform can be decided to be at its EndOfSales. This may happen when a platform is unpopular or if the vendor of the platform marked the platform to be at its EndOfSales. From this point onward, we target to perform one last major release of Actran on this platform. Afterwards, this platform reaches its EndOfLife.

#### 1.1.4 EndOfLife

At that time, a last minor release of Actran is performed. Bug-fixes on this platform may be provided until its EndOfSupport, depending on their origin.

#### 1.1.5 EndOfSupport

At this point, no support at all will be provided anymore on this platform. The time between EndOfLife and EndOfSupport is maximally one year.

### 1.2 Online download of Actran

Actran can be downloaded from the https://mscsoftware.flexnetoperations.com website.

#### 1.2.1 Windows platforms

Simply launch the graphical installer and follow the given instructions.

Windows Firewall may block some MPI features on all public and private networks. In case of a Windows Security Alert pop-pup appears, please allow access to the needed processes to communicate on these networks.
1.3 Setting up the Actran licensing server

1.2.2 Unix/Linux platforms

Execute the installer in a prompt and follow the given instructions.

1.3 Setting up the Actran licensing server

The Actran usage is controlled by FLEXnet. The set up of a minimal FLEXnet server is described here. It is however strongly advised to contact your organization’s FLEXnet manager, who will be able to set up the server in compliance with your local rules related to licensing management.

The MSC licensing tool can be downloaded from the https://mscsoftware.flexnetoperations.com website.

To setup the Actran licensing, execute the installer downloaded and follow the given instructions.

To obtain a valid license file for this server, please contact the Hexagon Support Team.

1.4 Advanced - Parallel version

Please refer to https://hexagon.com/support-success/manufacturing-intelligence/design-engineering-support/platform-support for more details about:

- the MPI libraries used within the parallel Actran version;
- the supported interconnects.

The selected standard is IntelMPI. This version is entirely integrated within the Actran productline.

1.5 Installation Directory

In the installation directory, besides the folders related to the different Actran releases, two other folders are available.

Figure 1.1: Bin and conf folders
The bin folder contains the script launched in background by Actran when executing the application. The script must not be modified in any case. The conf folder contains two files the user can edit. The user can have a look to the actran.in.template which specifies the syntax to follow in the actran.ini file. This last one contains the default version that will be executed when launching the application. It can also contains the path to the license file which will be used in case the MSC_LICENSE_FILE environment variable can not be specified due to user rights.

Figure 1.2: Conf folder
2.1 Preliminary Note

This document contains all relevant instructions regarding the Actran software installation. Following this procedure ensures that you will easily have a working installation. Furthermore, this is the most efficient way for the Hexagon Support Team to help you solving any issue. It is thus strongly advised to strictly follow the guidelines below step by step. However, in some special occasions, the guidelines cannot be followed (specific parallel installation, etc). In these situations, you can contact the Hexagon Support that will help you to choose the best option.

2.2 Supported Platforms

Actran has been compiled and tested for several platforms. Platforms are defined by the processor, the operating system, the runtime environment, etc. A Productline is a set of executables and libraries that correspond to a specific version of Actran for a specific platform. Refer to the platform definitions document available here (https://hexagon.com/support-success/manufacturing-intelligence/design-engineering-support/platform-support) to know which platforms are supported. Please contact Hexagon Support if your environment is not in this list.

2.3 Download Actran

The installers related to the different platforms can be downloaded from the MSC Download center (https://mscsoftware.flexnetoperations.com/)
2.4 Installation on Windows Platforms

To set up Actran, please launch the .exe installer and follow the instructions.

During the first installation of any Actran product, the installer defines the environment variable %ACTRAN_PATH% based on the installation directory. For next installations, the installer will automatically install the product line into the existing ACTRAN_PATH directory. The %ACTRAN_PATH% will be automatically added to the environment variable %PATH%.

Warning: Windows Firewall may block some features of intelmpi pmi_proxy.exe on all public and private networks. If a Windows Security Alert pop-up appears, please press the button Allow access to allow pmi_proxy.exe to communicate on these networks.
2.4 Installation on Windows Platforms

License Agreement
Please review the license terms before installing Actran 2024.1.

Press Page Down to see the rest of the agreement.

MSC Software Belgium SA
(Free Field Technologies Division)

Software License Agreement
(Rev May 2020)

MSC SOFTWARE BELGIUM SA ("MSC"), ACTING THROUGH ITS FREE FIELD TECHNOLOGIES DIVISION, IS WILLING TO LICENSE THE.

You must accept the agreement to install Actran 2024.1. Click next to continue.

- I accept
- I reject

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Choose Components
Choose which features of Actran 2024.1 you want to install.

Check the components you want to install and uncheck the components you don't want to install. Click Install to start the installation.

Select components to install:
- Actran
- Visual C++ Redistributable
- IntelMPI
- IntelMPI Windows service
- Easy launching
- ODB 2020
- ODB 2021
- ODB 2022

Space required: 3.7 GB

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Installation Complete
Setup was completed successfully.

Completed
- Extract: JSOGROUP.dll... 100%
- Extract: SMAFeaBackbone.dll... 100%
- Extract: lbfbentown Obesity_odb_2022.dll... 100%
- Extract: lbfbcore.dll... 100%
- Extract: lbfbpor.dll... 100%
- Extract: lbbfmd.dll... 100%
- Extract: msnp.dll... 100%
- Extract: vcruntime140.dll... 100%
- Output folder: C:\Program Files\MSC.Software\Actran\Actran_2024.1\utls\lbfbentown
- Completed

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Desktop Integration
How Actran integrates with the desktop.

- File association:
  - *.edt
  - *.plt
  - *.apf
  - *.sess
- Create shortcuts:
  - Create desktop shortcuts

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2.4 Installation on Windows Platforms

![Completion of Actran 2024.1 Setup]

Actran 2024.1 has been installed on your computer. Click Finish to close Setup.

- Show release notes

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2.5 Installation on Linux Platforms

To set up Actran, please launch the .run installer and follow the instructions. As an example, the installer related to the platform linux-libc212-x86-64 can be launched in a terminal using the following command:

```
sh linux-libc212-x86-64_Actran_2024.1.run
```

![Figure 2.1: Before launching the installation process, the installer automatically detects prerequisites](image1)

![Figure 2.2: You should accept the FFT agreements by typing accept to continue the installation](image2)

![Figure 2.3: The suggested installation path can be accepted or rejected by typing another installation path](image3)

![Figure 2.4: If not provided, the ACTRAN_PATH can be specified directly during the installation. For later installations, the installer will automatically install the productline into the existing ACTRAN_PATH directory](image4)

At the end of the installation, an embedded version of Intel MPI for parallel
computations will be installed. This embedded version can be directly used for parallel computations after proper sourcing of the productline.
2.6 Licensing

The MSC licensing tool can be downloaded from the MSC Download center (https://mscsoftware.flexnetoperations.com/). To setup the licensing, execute the installer downloaded and follow the given instructions.

2.7 Productline Tree

After the installation, the productline can be seen in the ACTRAN_PATH directory. First of all, the ACTRAN_PATH directory contains:

- The bin directory which contains the script launched in background by Actran when executing the application.
- The conf directory which contains the configuration file for initialization. This file can be edited by the user.
- The productline directory described below.

The productline directory contains the following:

- The bin directory contains all the executables and shell scripts callable by the user;
- The doc directory contains all the Actran User’s guides;
- The etc directory contains the sourcing shell script (backward compatibility with versions prior to Actran 2021);
- The lib directory contains all the required runtime libraries;
- The mpi directory contains the embedded version of Intel MPI;
- The user directory contains user defined data such as the materials library;
- The utils directory contains the odb2act utility;
- All the other subdirectories are used to launch at least one of the previous callable files (executables, shell scripts, Python scripts, etc).

For releases prior to Actran 2021, the productline tree is the following:

- A sourcing shell script which has the name of the productline (actran_2020) and comes with each productline. It is placed at the top level of the tree.
- The only other object at the top level of the tree is the root directory containing the productline itself (Actran_2020). The name of this directory is very important and cannot be modified (see afterwards).
• Inside the root directory of the productline, the bin directory contains all the executables and shell scripts callable by the user;

• Inside the root directory of the productline, the doc directory contains all the Actran User’s guides;

• Inside the root directory of the productline, the lib directory contains all the required runtime libraries;

• Inside the root directory of the productline, the mpi directory contains the embedded version of Intel MPI;

• Inside the root directory of the productline, the user directory contains user defined data such as the materials library;

• Inside the root directory of the productline, the utils directory contains the odb2act utility;

• All the other subdirectories are used to launch at least one of the previous callable files (executables, shell scripts, Python scripts, etc).
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