dSPACE Release

Installing dSPACE Software

Release 2024-A – May 2024

dSPACE

How to Contact dSPACE

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How to Contact dSPACE Support

If you encounter a problem when using dSPACE products, contact your local dSPACE representative:

- Local dSPACE companies and distributors: https://www.dspace.com/go/locations
- For countries not listed, contact dSPACE GmbH in Paderborn, Germany.
  Tel.: +49 5251 1638-941 or e-mail: support@dspace.de

You can also use the support request form: https://www.dspace.com/go/supportrequest. If you are logged on to mydSPACE, you are automatically identified and do not have to add your contact details manually.

If possible, always provide the serial number of the hardware, the relevant dSPACE License ID, or the serial number of the CmContainer in your support request.

Software Updates and Patches

dSPACE strongly recommends that you download and install the most recent patches for your current dSPACE installation. Visit https://www.dspace.com/go/patches for the software updates and patches themselves and for more information, such as how to receive an automatic notification when an update or a patch is available for your dSPACE software.

Contents

About This Document

Contents

This document shows you how to install and remove dSPACE software. It also describes the setup's automatic installation feature to make installation on multiple host PCs quicker and easier.

The appendix provides system requirements and gives other useful reference information.

Required knowledge

Knowledge in handling the host PC and the Microsoft operating system is assumed.

Printed document

A printed copy of this document is available on demand.
You can order it free of charge by using the following link:
https://www.dspace.com/go/requestreleasematerial

Symbols

dSPACE user documentation uses the following symbols:

Symbol	Description
⚠ DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazard that, if not avoided, could result in property damage.
Note	Indicates important information that you should take into account to avoid malfunctions.
Tip	Indicates tips that can make your work easier.
⍰	Indicates a link that refers to a definition in the glossary, which you can find at the end of the document unless stated otherwise.

Symbol	Description
📖	Follows the document title in a link that refers to another document.

Naming conventions

dSPACE user documentation uses the following naming conventions:

%name%   Names enclosed in percent signs refer to environment variables for file and path names.

< >   Angle brackets contain wildcard characters or placeholders for variable file and path names, etc.

Special Windows folders

Windows-based software products use the following special folders:

Common Program Data folder   A standard folder for application-specific program data that is used by all users.
`%PROGRAMDATA%\dSPACE\<InstallationGUID>\<ProductName>`
or
`%PROGRAMDATA%\dSPACE\<ProductName>\<VersionNumber>`

Documents folder   A standard folder for application-specific files that are used by the current user.
`%USERPROFILE%\Documents\dSPACE\<ProductName>\<VersionNumber>`

Local Program Data folder   A standard folder for application-specific program data that is used by the current user.
`%USERPROFILE%\AppData\Local\dSPACE\<InstallationGUID>\`
`<ProductName>`

Accessing dSPACE Help and PDF files

After you install and decrypt Windows-based dSPACE software, the documentation for the installed products is available in dSPACE Help and as PDF files.

dSPACE Help (local)   You can open your local installation of dSPACE Help:
- On its home page via Windows Start Menu
- On specific content using context-sensitive help via **F1**

PDF files   You can access PDF files via the 📄 icon in dSPACE Help. The PDF opens on the first page.

dSPACE Help (Web)   Independently of the software installation, you can access the Web version of dSPACE Help at https://www.dspace.com/go/help.

To access the Web version, you must have a *mydSPACE* account.
For more information on the mydSPACE registration process, refer to https://www.dspace.com/faq?097.

Safety Precautions

General Warning

Danger potential

Using dSPACE software can be dangerous. You must observe the following safety instructions and the relevant instructions in the user documentation.

Improper or negligent use can result in serious personal injury and/or property damage

Using the dSPACE software can have a direct effect on technical systems (electrical, hydraulic, mechanical) connected to it.

The risk of property damage or personal injury also exists when the dSPACE software is controlled via an automation interface. The dSPACE software is then part of an overall system and may not be visible to the end user. It nevertheless produces a direct effect on the technical system via the controlling application that uses the automation interface.

- Only persons who are qualified to use dSPACE software, and who have been informed of the above dangers and possible consequences, are permitted to use this software.
- All applications where malfunctions or operating errors involve the danger of injury or death must be examined for potential hazards by the user, who must if necessary take additional measures for protection (for example, an emergency off switch).

Liability

It is your responsibility to adhere to instructions and warnings. Any unskilled operation or other improper use of this product in violation of the respective safety instructions, warnings, or other instructions contained in the user documentation constitutes contributory negligence, which may lead to a limitation of liability by dSPACE GmbH, its representatives, agents and regional dSPACE companies, to the point of total exclusion, as the case may be. Any exclusion or limitation of liability according to other applicable regulations, individual agreements, and applicable general terms and conditions remain unaffected.

Data loss during operating system shutdown

The shutdown procedure of Microsoft Windows operating systems causes some required processes to be aborted although they are still being used by dSPACE software. To avoid data loss, the dSPACE software must be terminated manually before a PC shutdown is performed.

Basics on dSPACE Software Installation

Where to go from here

Information in this section

Obtaining dSPACE Software

Distribution

dSPACE Release 2024-A is distributed as follows:

- dSPACE software is delivered on two DVDs: All main products are contained on the DVDs.
- Each DVD is available as an ISO image. You can download the images from the dSPACE website at https://www.dspace.com/go/releasedownload.
- The complete content of both DVDs is also available as a merged ZIP file and can be downloaded from the dSPACE website at https://www.dspace.com/go/releasedownload.

  This download is useful if you want to install several dSPACE software products that are not contained on the same DVD.
- The following dSPACE products/tools can be downloaded from the dSPACE website as separate software packages with own setup programs. They are also part of the dSPACE Release and installed automatically with the related product sets.
  - DCI-GSI Configuration Package, at https://www.dspace.com/go/DCIGSI.
  - dSPACE Firmware Manager and dSPACE Firmware Archives at https://www.dspace.com/go/firmware.
  - dSPACE Installation Manager at https://www.dspace.com/go/im.

- The following dSPACE products/tools are not part of the dSPACE Release and can be only downloaded from the dSPACE website as separate software packages with own setup programs:
    - ConfigurationDesk for RapidPro at https://www.dspace.com/go/CFDRP.
    - dSPACE Profiler at https://www.dspace.com/go/profiler.

DVD contents

For information on which products each DVD contains, refer to Information About Product Sets on page 17.

About dSPACE Software Installation

Workflow

The software installation process is license-independent, as shown below. No license information and/or dongles are required during the installation. This simplifies the installation process significantly.
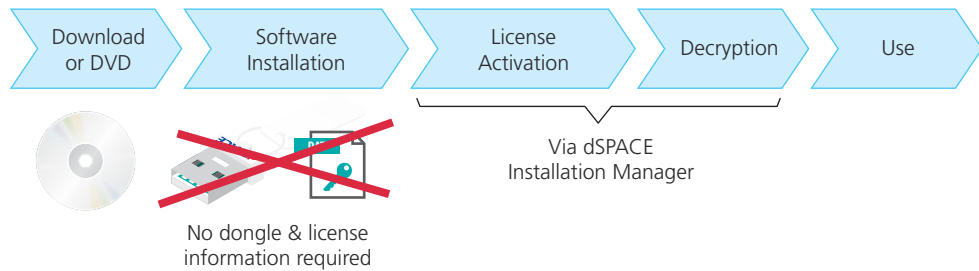
As a consequence, you can install the complete dSPACE Release without any license. However, specific parts of dSPACE software, the documentation, demo models, .NET code, etc. are installed in encrypted archives on your host PC.

> **Tip**
>
> License activation and decryption do not require administrator rights, so the end users can perform these steps themselves.

License activation   After software installation, license activation is necessary to run license-protected dSPACE software. License activation is done via a database (dSPACE License Central) and uses a ticket-based system.

Decryption   To use the full functionality of the installed dSPACE software, you have to decrypt the files which are installed in encrypted archives on your host PC. You can only decrypt parts of the dSPACE installation for which you have licenses. Use dSPACE Installation Manager for decrypting them.

Using dSPACE Installation Manager

dSPACE Installation Manager is required to activate licenses and decrypt files. Furthermore, it lets you manage all the dSPACE installations available on your host PC. For example, it provides detailed information on installed products and supports the integration of dSPACE software into a MATLAB® installation.

> **Note**
>
> You cannot use dSPACE Installation Manager to install dSPACE software or modify dSPACE installations (add or remove software) on your host PC.

For a short feature overview, refer to Introduction to the dSPACE Installation Manager on page 15.

Installation methods

The dSPACE Setup provides two installation methods:

- Interactive installation with manual input (= standard installation)

  For instructions, refer to Installing dSPACE Software Products on page 43.
- Preconfigured automatic installation in unattended mode

  With this method, you can record an initial interactive installation and store your installation configuration to a configuration file. Later, you can use this file to install dSPACE software on multiple host PCs automatically in unattended mode.

> **Note**
>
> In record mode no software is installed on your host PC. You only save your settings to a configuration file.

Recorded configuration file

Automatic installation in unattended mode

Record

Installation on one PC   Installation on multiple PCs
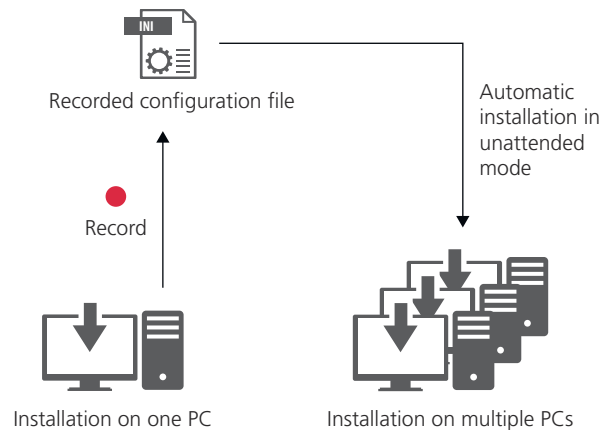
For basics and instructions on initializing and running a preconfigured automatic installation, refer to Automating Installation Tasks on page 63.

Using dSPACE software on virtual machines (VM)

You can operate several dSPACE software products installed on virtual machines. For more information, refer to Using dSPACE Software on Virtual Machines (VMs) on page 51.

Introduction to the dSPACE Setup Program

Design and functionality

The setup program has been designed to simplify the installation process. dSPACE Setup also supports removing a complete dSPACE Release, as well as modifying and repairing an existing installation.

dSPACE Setup is the central setup program for all dSPACE software products. It has a modern, clean user interface:
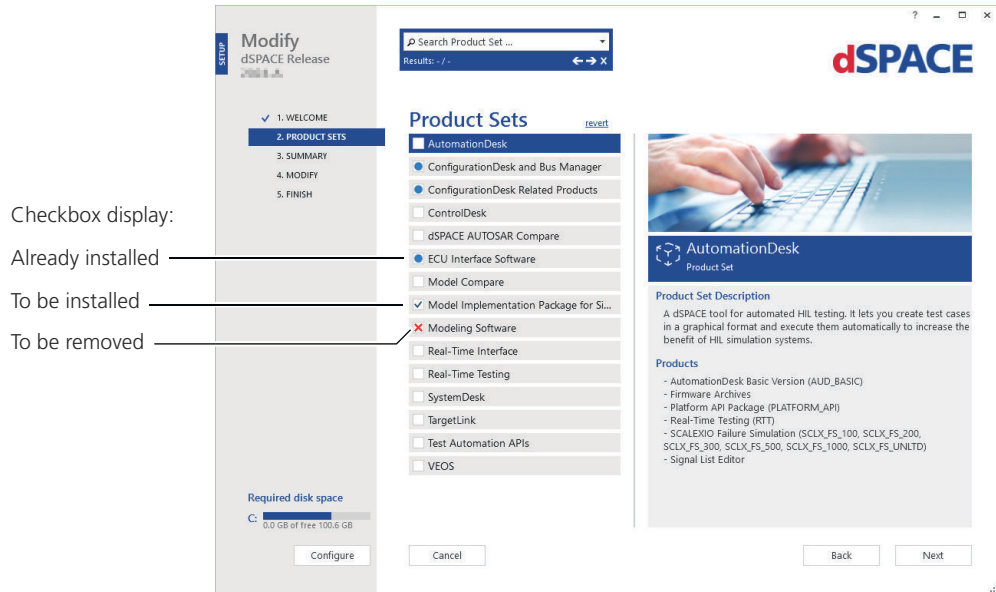
Checkbox display:

Already installed

To be installed

To be removed

As shown above, you can select product sets from a flat list. There is no complex tree of installable software components you can or must select from, requiring detailed knowledge about which component is located where.

Installation on product set level

dSPACE software is installed in larger units, called product sets. Each set contains software components and options that are typically used together. Product sets provide a good balance between disk space requirements and usability.

You can install and uninstall software only on the product set level. It is not possible to add or remove single products.

Keep in mind that a specific product can be contained in several product sets. However, each product will be installed only once, regardless of how many product sets contain it.

Products in a product set   dSPACE Setup provides a description of the selected product set on the right-hand side of the window. The description also lists all products of the product set, including their order numbers. If you select a product set, the listed products are selected for being installed on your host PC.

For an overview of all available product sets and their contained products, refer to Mapping Between Products and Product Sets on page 17.

Search products   If you do not find the product that you want to install in the product set list, you can enter the product name or order number (e.g.,

RTICAN) in the search field in dSPACE Setup. The matches are highlighted in the product set description field. The related product set is highlighted as well.

A product can be part of multiple product sets. You can switch between the matches to see if one of the related products sets is already installed.
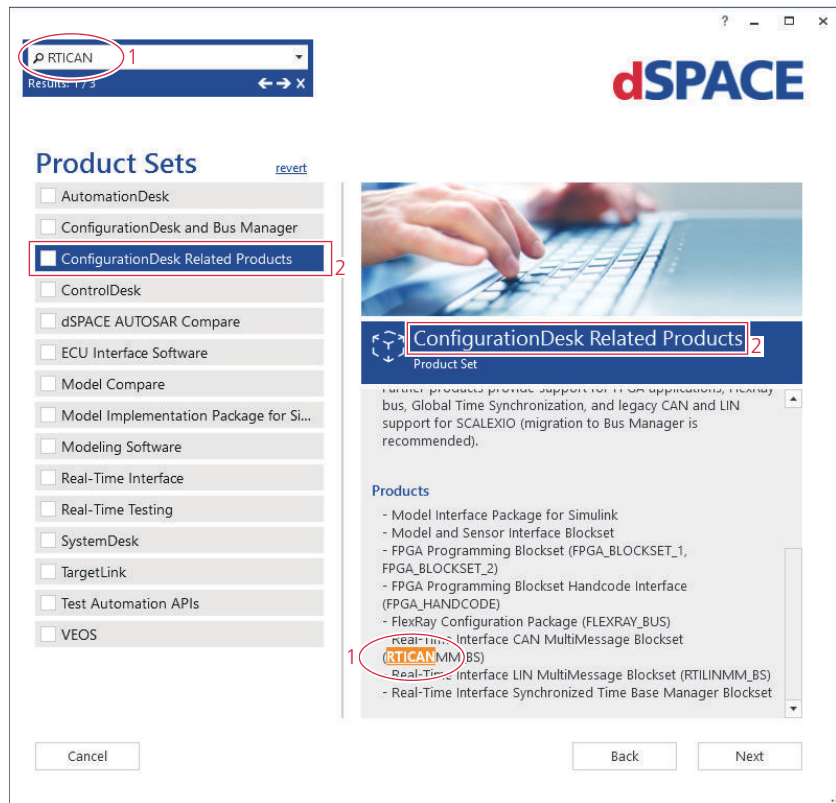
Note

Due to technical changes in the dSPACE order management, certain order numbers have to be changed. This will not happen for customers of all countries at the same time. Therefore, both the old and the new order numbers will apply for this transition period. For details, refer to Mapping Between Products and Product Sets on page 17.

Installation progress   A progress bar visualizes the progress of the installation process regarding all selected product sets in percentage. Below the progress bar, the current installation step is displayed.

Multiple installations

Note

Multiple installations of the same Release are not supported. You can install only one instance of a product set (for example, ControlDesk, AutomationDesk, Model Compare, ECU Interface Software, VEOS, TargetLink) on your host PC.

However, you can install different Releases of a product set on your host PC.

Configure the host PC to shut down after installation

The installation is performed without any user interaction during the installation process. The new setup collects all required information before the installation starts. You can specify to shut down your host PC after the installation. This lets you complete dSPACE software installation without having to be physically present.

> **Note**
>
> Make sure that no application or software product is running on the host PC, because this might prevent the host PC from shutting down. This can be the case if an application contains unsaved changes, for example.
>
> You also have to observe the notes in Protecting the Installation Process Against Blocking on page 36.

Accessing dSPACE Setup

You can access the setup program (`Install_Release.exe`) as follows:

- Via the root directory on both dSPACE DVDs.
- Via the root directory of the downloaded installation files (mounted ISO images or unpacked ZIP files).
- After the initial installation of dSPACE Release 2024-A: Via the Windows Control Panel (**Programs - Programs and Features - dSPACE Release 2024-A**).

SYNECT is available on DVD 1 and has its own setup program (`Install_Synect.exe`).

dSPACE products/tools that can be downloaded from the dSPACE website as separate software packages also have their own setup programs, identifiable by their names (for example, `Install_FirmwareManager.exe`). However, the features, the workflow, and the design of the setup programs are always the same.

Installation from merged data   It is recommended to install the dSPACE software from a merged folder. Therefore, copy the contents of both dSPACE DVDs to a common folder. This enables you to install product sets from both DVDs in one step without changing the medium. For example, for unattended installations it is easier to install the software from a merged folder to prevent interrupting automatic installations.

When you copy the files and folders to a common merged folder, confirm any requests for folder and/or file replacement that Windows displays.

> **Tip**
>
> You can also download the complete content of both DVDs as a merged ZIP file from the dSPACE website.

Introduction to the dSPACE Installation Manager

Purpose

dSPACE Installation Manager lets you manage all the dSPACE installations on your host PC, lets you activate licenses and decrypt encrypted archives of dSPACE installations.

Installation

The dSPACE Installation Manager is installed automatically during dSPACE software installation. It can also be downloaded from the dSPACE website and installed separately.

Feature overview

The following illustration shows the features of the dSPACE Installation Manager.

PC with your dSPACE installations

Selected installation

View details
- Display details of selected installation and installed products.
- Display dSPACE extensions (add-ins, solutions) that are integrated into dSPACE products.

Get information on available software updates
(as of version 22.2)

Activate/deactivate installation
Switch between installations.

Connect dSPACE installation to MATLAB installation

Decrypt encrypted archives of dSPACE software installations

Manage licenses
- View available licenses.
- Activate/deactivate licenses.
- Update licenses.

Collect diagnostics information for dSPACE Support

Compatibility

dSPACE Installation Manager is downward-compatible with the last eight dSPACE Releases. So you can always use its latest version to manage the installations on your host PC.

Information About Product Sets

Where to go from here

Information in this section

Mapping Between Products and Product Sets

Product sets

dSPACE software is installed in larger units, called product sets. Each set contains all software components and options that are typically used together. Product sets provide a good balance between disk space requirements and usability.

Mapping tables

The following tables show dSPACE products and their order number. They are mapped to the product sets they are contained in.

The last column shows, which products are part of the RCP and HIL software package. These software products are installed in a common folder (RCP and HIL installation). dSPACE Installation Manager can handle the products in the RCP and HIL installation only as a unit.

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
ASM Batterie Library	ASM_L_BAT	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_BAT_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Brake Hydraulics Library	ASM_L_BH	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_BH_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Diesel Exhaust Library	ASM_L_DEXH	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_DEXH_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Drivetrain Basic Library	ASM_L_DTB	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_DTB_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Electric Components Library	ASM_L_EC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_EC_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Engine Diesel Library	ASM_L_ED	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_ED_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Engine Diesel InCylinder Library	ASM_L_EDIC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_EDIC_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Engine Gasoline Library	ASM_L_EG	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_EG_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Engine Gasoline InCylinder Library	ASM_L_EGIC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_EGIC_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Environment Library	ASM_L_ENV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_ENV_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM ASM Fuel Cell Library	ASM_L_FC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_FC_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM InCylinder Base Library	ASM_L_ICB	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_ICB_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
ASM Kinematics and Compliance Testbench	ASM_L_KNC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Pneumatics Library	ASM_L_PNM	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_PNM_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Turbocharger Library	ASM_L_TC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_TC_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Trailer Library	ASM_L_TRA	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_TRA_RTC	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Traffic Library	ASM_L_TRF	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_TRF_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Truck Library	ASM_L_TRU	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_TRU_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
ASM Vehicle Dynamics Library	ASM_L_VD	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
	ASM_L_VD_RTV	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
AutomationDesk Basic	AUD_BASIC	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bus Manager	BUS_MANAGER	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calibration API Package	CALIBRATION_API	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-
Compiler for ConfigurationDesk platforms	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compilers for dSPACE platforms	CCPPPC	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
	MLBX_COMP	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
ConfigurationDesk	CFD_I_100	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CFD_I_200	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
	CFD_I_300	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CFD_I_1000	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	CFD_I_UNLTD	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk MultiCore	CFD_I_MC	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk MultiProcessor	CFD_I_MP	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk CAN Module	CFD_I_CAN	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk LIN Module	CFD_I_LIN	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk Ethernet Module	CFD_I_ETH	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ConfigurationDesk XCP Module	CFD_I_XCP	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk	CONTROLDESK	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk Bus Navigator Module	CONTROLDESK_BNV	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk ECU Diagnostics Module	CONTROLDESK_DIAG	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk ECU Interface Module	CONTROLDESK_ECU	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk Operator Version	▪ CONTROLDESK_OPERATOR (old) [1] ▪ CONTROLDESK_OPER (new)	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ControlDesk Signal Editor Module	CONTROLDESK_SE	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
Data Dictionary Manager	DSDD_MANAGER	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
DCI-GSI Configuration Package	-	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	-
dSPACE AUTOSAR Compare	DARC	-	-	-	-	✓	-	-	-	-	-	-	✓ 2)	✓ 2)	-	-	-
dSPACE BUS API	BUS_API	-	✓	-	✓	-	-	-	-	-	-	-	-	-	✓	✓	-
dSPACE CAN API	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
ECU Flash Programming Tool	DSPACE_ECU_FLASH	-	-	-	✓	-	✓	-	-	-	-	-	-	-	-	-	-
ECU Interface Base Package	EIF_BASE	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface Binary Code Management for ARM	EIF_BCM_ARM	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface Binary Code Management for MPC5XXX	EIF_BCM_MPC5XXX	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface Binary Code Management for TriCore	EIF_BCM_TRICORE	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface Binary Code Management for V850X	EIF_BCM_V850X	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓

Product	Order Number	Product Set														
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
ECU Interface On-Target module for ARM	EIF_OT_ARM	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface On-Target module for MPC5XXX	EIF_OT_MPC5XXX	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface On-Target module for TriCore	EIF_OT_TRICORE	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
ECU Interface On-Target module for V850X	EIF_OT_V850X	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓
Failure Simulation Package	FAILURE_SIM	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-
Firmware Archives	-	✓	✓	-	✓	-	✓	-	-	✓	✓	-	-	-	-	-	-
Firmware Manager	-	-	✓	-	-	-	✓	-	-	-	✓	-	-	-	-	-	-
FlexRay Configuration Blockset	FLEXRAY_BUS	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓
FlexRay Configuration Tool	FLEXRAY_BUS	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
FPGA Programming Blockset for Vitis™ Model	FPGA_BLOCKSET_1	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
FPGA Programming Blockset for HDL™ Coder	FPGA_BLOCKSET_2	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓

Product	Order Number	Product Set														
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
FPGA Programming Blockset Handcode Framework	FPGA_HANDCODE	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
HighTec C Compiler for Freescale MPC5xxx	HIGHTECC_MPC5XXX	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
HighTec C Compiler for Infineon TriCore	HIGHTECC_TRICORE	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
HighTec C Compiler for Renesas V850/RH850	HIGHTECC_V850X	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
Model Container Utility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
Model Compare	MOC	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-
ModelDesk	MODELDESK	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	✓
Model Interface Package for Simulink	-	-	-	✓	-	-	-	✓	-	✓	-	-	-	-	-	-	✓
Model and Sensor Interface Blockset	-	-	-	✓	-	-	-	✓	-	✓	-	-	-	-	-	-	✓
Platform API Package	PLATFORM_API	✓	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-
Real-Time Testing	RTT	✓	-	-	✓	-	-	-	-	-	-	✓	-	-	✓	-	-
Real-Time Interface	RTI	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
Real-time libraries for DS1104, MicroAutoBox II, and MicroLabBox	-	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
Real-time libraries for MicroAutoBox III, MicroLabBox II, and SCALEXIO systems	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RTI Bypass Blockset	EIF_BASE	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-	-	✓
RTI CAN Blockset	RTICAN_BS	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI CAN MultiMessage Blockset	RTICANMM_BS	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI E-Motor Control Blockset	RTI_EMC_BS	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI Ethernet I/O Package	RTI_ETHERNET_IO	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI FlexRay Configuration Blockset	FLEXRAY_BUS	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI LIN MultiMessage Blockset	RTILINMM_BS	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI Multiprocessor	RTI_MP	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI RapidPro Blockset	RTI_RP_BS	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
RTI Synchronized Time Base Manager Blockset	-	-	-	✓	-	-	-	-	-	-	✓	-	-	-	-	-	✓

Product	Order Number	Product Set															
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
RTI Watchdog Blockset	RTI_WATCHDOG_BS	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓
Signal List Editor	-	✓	-	-	✓	-	-	-	-	-	-	-	-	-	✓	-	-
SystemDesk Modeling Module	SYD_MOD	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-
SystemDesk V-ECU Generation Module	SYD_GEN	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-
TargetLink Base Suite	TBS	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
TargetLink AUTOSAR Module	TAS	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
TargetLink Adaptive AUTOSAR Module	TAAS	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
TargetLink Module for MATLAB Code	TMMLC	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
TargetLink Module for Operating Systems - OSEK	TMOS_OSEK	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
Target Optimization Module/C16x	TOM_C16X_TASKING	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
Target Optimization Module/SH2	TOM_SH2_SHC	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
Target Optimization Module/Tricore	▪ TOM_TRICORE_TASKING (old) [1] ▪ TOM_TRIC_TASK (new)	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-

Product	Order Number	Product Set														
		AutomationDesk	ConfigurationDesk and Bus Manager	ConfigurationDesk Related Products	ControlDesk	dSPACE AUTOSAR Compare	ECU Interface Software	Model Implementation Package for Simulink	Model Compare	Modeling Software	Real-Time Interface	Real-Time Testing	SystemDesk	TargetLink	Test Automation APIs	VEOS	Part of RCP and HIL software
TargetLink Simulation Module	TSM	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-
VEOS - Base	VEOS_BASE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
VEOS - Virtual CAN	VEOS_CAN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
VEOS - Virtual ECU	VEOS_ECU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
VEOS - Virtual Automotive Ethernet	VEOS_ETH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
VEOS - Virtual LIN	VEOS_LIN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	-
XCP Host Blockset	XCP_HOST_BS	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-	✓

1) Due to technical changes in the dSPACE order management, this order number has to be changed. This will not happen for customers of all countries at the same time. Therefore, both the old and the new order numbers will apply for this transition period.

2) The dSPACE AUTOSAR Compare product set is automatically selected.

SYNECT product sets

The SYNECT setup (`Install_Synect.exe`) contains all products that are required to install and run SYNECT, including the required SYNECT servers. The available product sets (SYNECT, SYNECT Server, SYNECT License Server, Microsoft SQL Server Express for SYNECT) are usually not installed on a single PC. They are installed on separate PCs for clients, server and licenser server connected in a common network.

ConfigurationDesk for RapidPro

As of dSPACE Release 2021-B, ConfigurationDesk for RapidPro is no longer part of the dSPACE Release. You can download it from the dSPACE website as a separate software package with its own setup program. Refer to https://www.dspace.com/go/CFDRP.

Product Sets on DVDs

Which product set is on which DVD?

Product Set	DVD 1	DVD 2
AutomationDesk	-	✓
ConfigurationDesk and Bus Manager	✓	-
ConfigurationDesk Related Products	✓	-
ControlDesk	-	✓
dSPACE AUTOSAR Compare	-	✓
ECU Interface Software	✓	-
Model Compare	-	✓
Model Impementation Package for Simulink	✓	-
Modeling Software	✓	-
Real-Time Interface	✓	-
Real-Time Testing	-	✓
SystemDesk	-	✓
TargetLink	-	✓
Test Automation APIs	-	✓
VEOS	-	✓

Product Set for SYNECT[1]	DVD 1	DVD 2
SYNECT	✓	-
SYNECT License Server	✓	-
SYNECT Server	✓	-
Microsoft SQL Server Express for SYNECT Server	✓	-

[1] The product sets for SYNECT are accessible via `Install_SYNECT.exe`.

ConfigurationDesk for RapidPro

As of dSPACE Release 2021-B, ConfigurationDesk for RapidPro is no longer part of the dSPACE Release. You can download it from the dSPACE website as a separate software package with its own setup program. Refer to https://www.dspace.com/go/CFDRP.

What Do You Want To Do?

What Do You Want To Do?

Overview of possible tasks The following table gives you an overview of possible tasks and guides you to the respective source of information.

What Do You Want To Do?		Required dSPACE Tool	Refer To ...	
Install dSPACE Software	Install dSPACE software initially	dSPACE Setup	How to Install dSPACE Software on page 43	This document
	Add software to an existing installation			
	Install patches		How to Install dSPACE Software Updates and Patches on page 47	
	Install dSPACE software automatically in unattended mode on multiple host PCs		How to Install dSPACE Software Automatically on Multiple Host PCs in Unattended Mode on page 67	
	Install dSPACE Bypassing Services		Installing dSPACE Bypassing Services on page 49	
Use dSPACE software on virtual machines		—	Using dSPACE Software on Virtual Machines (VMs) on page 51	
Handle dSPACE licenses (CodeMeter licensing technology)	Activate dSPACE licenses	dSPACE Installation Manager	License Activation	Working with CodeMeter Licensing Technology 📖
	Deactivate dSPACE licenses		License Deactivation	
	Update dSPACE licenses		License Update	
	Moving activated licenses		Moving Activated Licenses between CmContainers	
	Borrow licenses		License Borrowing	
	Work with floating network licenses: Establish connection between server and client		How to Set Up the dSPACE License Server	
			How to Set up a Connection Between Client and Server	

What Do You Want To Do?		Required dSPACE Tool	Refer To ...	
Decrypt encrypted archives of dSPACE software installations		dSPACE Installation Manager	How to Decrypt Encrypted Archives of dSPACE Software Installations	Managing dSPACE Software Installations 📖
Manage dSPACE installations	View details of dSPACE software installations	dSPACE Installation Manager	How to View dSPACE Installations and Installed Products	Managing dSPACE Software Installations 📖
	Change the connection between dSPACE software and a MATLAB installation		How to Change the MATLAB Connection	
	Activate a dSPACE installation		How to Activate a Single dSPACE Installation	
	Get information on available software updates		Getting Information on Available dSPACE Software Updates	
Remove dSPACE software	Remove single dSPACE products sets	dSPACE Setup	How to Remove Product Sets of dSPACE Release 2024-A on page 58	This document
	Remove the complete dSPACE Release 2024-A		How to Remove the Complete dSPACE Release 2024-A on page 61	
	Remove dSPACE software automatically in unattended mode		How to Remove the Complete dSPACE Release 2024-A Automatically in Unattended Mode on page 70	
Troubleshooting		—	Checking dSPACE Installations on page 75	
		dSPACE Setup	How to Repair a dSPACE Software Installation on page 77	
Collect diagnostic information for dSPACE Support		dSPACE Installation Manager	How to Collect Diagnostic Information via dSPACE Installation Manager	Providing Diagnostic Information 📖

Before You Start

Motivation

Before starting the installation, you should familiarize yourself with the installation workflow. You also have to check if the preconditions and required settings for a proper installation are met.

Where to go from here

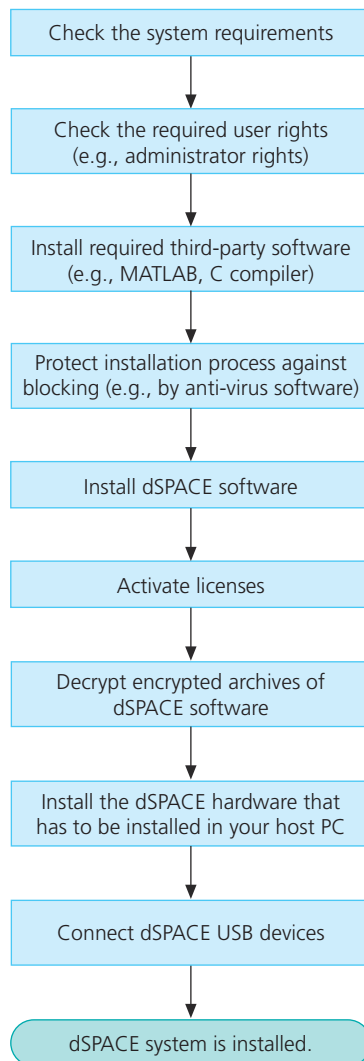Information in this section

Installation Workflow

Installation workflow

NOTICE

Changing the installation sequence might lead to unpredictable results or even corrupted the software installation.

- Read the instructions carefully before starting an installation. Install the components of your system in exactly the order specified.
- Observe all warnings that are given.
- Do not install dSPACE hardware in the host PC (e.g., DS1104) or connect dSPACE USB devices (e.g., RapidPro hardware) before software installation is completed. Failing to do so will cause problems with assigning dSPACE device drivers correctly.

The following flow chart shows the installation sequence required for installing dSPACE software.

```
┌─────────────────────────────────────┐
│   Check the system requirements      │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│   Check the required user rights     │
│   (e.g., administrator rights)       │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Install required third-party software│
│   (e.g., MATLAB, C compiler)         │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Protect installation process against │
│  blocking (e.g., by anti-virus software)│
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│       Install dSPACE software        │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│         Activate licenses            │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│    Decrypt encrypted archives of     │
│         dSPACE software              │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│  Install the dSPACE hardware that    │
│  has to be installed in your host PC │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│     Connect dSPACE USB devices       │
└─────────────────────────────────────┘
                  │
                  ▼
╭─────────────────────────────────────╮
│      dSPACE system is installed.     │
╰─────────────────────────────────────╯
```

License activation   After software installation, license activation is necessary to run license-protected dSPACE software. Use dSPACE Installation Manager for activating licenses. Refer to License Activation (Working with CodeMeter Licensing Technology 📖).

Decryption   To use the full functionality of the installed dSPACE software, you have to decrypt the files which are installed in encrypted archives. You can only decrypt parts of the dSPACE installation for which you have licenses. Use dSPACE Installation Manager for decrypting them. Refer to Decrypting Encrypted Archives of dSPACE Software Installations (Managing dSPACE Software Installations 📖).

Related topics

Notes on Installing and Using Third-Party Software

Required third-party software

Some dSPACE products require specific third-party products to be installed first to ensure correct operation and full functionality. Refer to Overview of Required Third-Party Software on page 90.

> **Note**
>
> Though it is possible to install third-party software after you install dSPACE software, it is strongly recommended to install it before you install dSPACE software.
>
> There is one exception: Python is part of the dSPACE software installation and is therefore installed together with the dSPACE software. We strongly recommend the following:
>
> - Do not install Python in the same version as the one delivered with the dSPACE software before installing the dSPACE software.
> - Remove an existing Python installation before installing dSPACE software if the existing Python version is the same as the one delivered with the dSPACE software.

Providing legal notes for using third-party software

Several dSPACE software products use or contain third-party software. The third-party components may be subject to additional terms and conditions or terms and conditions that deviate from the ones that apply to the dSPACE software. Copyright notices and license terms of third-party components must be adhered to. If the user is required to be explicitly informed of and to comply with the terms and conditions of third-party components, the relevant information on terms and conditions is stated in separate OSSAcknowledgements files for each dSPACE product.

You can find the OSSAcknowledgements files as follows:

- In the **Legal** folders accessible via the root directory on both dSPACE DVDs and the root directory of the downloaded installation files (mounted ISO images or unpacked ZIP files).
- After you install the dSPACE software in the **<main installation path of dSPACE Setup>\<subfolder of InstallationSet>\Legal** folder.

Enabling Windows 8dot3name creation option

> **Note**
>
> It is strongly recommended that the Windows **8dot3name creation** option is enabled for all drives (drives used for installation and drives used for work) before you install third-party software, such as MATLAB®/Simulink®, and the dSPACE software.

If the option is disabled during software installation, serious errors can occur when you run the dSPACE software. For example, the build process might be aborted. To repair an installation that was installed while the **8dot3name creation** option was disabled, you have to install dSPACE software and required third-party software again.

For instructions on checking the setting and enabling the option, refer to https://www.dspace.com/faq?346 or to the Microsoft Windows documentation.

Settings in Windows for user locale and system locale must match

MATLAB reads the user locale and system locale settings that are specified in Windows operating systems. The user locale and the system locale must match. If these settings are not the same, the system might not behave as expected when working with MATLAB and dSPACE software.

For instructions on checking and changing the settings, refer to https://www.mathworks.com/help/matlab/matlab_env/setting-locale-on-windows-platforms.html?s_tid=gn_loc_drop.

This affects all MATLAB versions and all Windows operating systems, that are supported by dSPACE.

Modify rights for MATLAB startup file required

If you want to work with dSPACE software that requires MATLAB, the dSPACE software must be integrated into a MATLAB installation. Only integrated dSPACE software is prepared for use with MATLAB.

For this, dSPACE Setup modifies the MATLAB startup file of the MATLAB installation during installation or later by changing the integration (via dSPACE Installation Manager).

When MATLAB starts, it automatically executes the `matlabrc.m` file. dSPACE Setup and dSPACE Installation Manager try to modify this file by adding the `dspacerc` function call to the script.

dSPACE software does not check whether MATLAB is installed on a network drive or locally on your host PC. You must have modify rights for the `matlabrc.m` file and the MATLAB folder that contains it:

- If you do not have modify rights, dSPACE Setup and dSPACE Installation Manager cannot integrate dSPACE software and display an error message.
- If you have modify rights, dSPACE Setup and dSPACE Installation Manager modify `matlabrc.m` automatically.

Notes when using global environment variables for proxy configuration

For the communication between different dSPACE software products, dSPACE software uses the gRPC protocol which is based on the HTTP protocol. Therefore, the functionality of the software can be influenced by the following global environment variables: HTTP_PROXY, HTTPS_PROXY, and GRPC_PROXY.

If your network administrator uses these global environment variables for the proxy configuration, their settings may cause the dSPACE software not to work correctly.

As a precaution, you should define a setting that ensures trouble-free operation with the dSPACE software by excluding the communication with localhost from the proxy configuration. For this, create the **NO_PROXY** environment variable on your host PC if it does not yet exist. Then set its value to **127.0.0.1, localhost**. You can set this value before or after installation of the dSPACE software.

Required User Rights

Required rights for software installation

You need unrestricted administrator rights to install dSPACE software and manage dSPACE installations.

You can check whether your user account has administrator rights in the followings ways:

- Via the Control Panel of your operating system.

  From **Start – Windows System – Control Panel – User Accounts**, select **Change account type**.

  If your user name is associated with the *Administrators* group, you have administrator rights.

- Via dSPACE Installation Manager.

  From **Start – dSPACE Installation Manager**, select **dSPACE Installation Manager**.

  Check the status bar of dSPACE Installation Manager at the bottom of the screen.

  If the status bar is red and displays **Restricted**, you do not have unrestricted administrator rights.

Required rights for license activation and decryption

License activation and decryption of encrypted parts of the dSPACE software does not require administrator rights. Therefore users without administrator rights can perform these steps themselves.

Required rights for integrating into MATLAB	If you want to work with dSPACE software which requires MATLAB, dSPACE software must be integrated into a MATLAB installation. To support this, modify rights are required for the MATLAB startup file. Refer to Notes on Installing and Using Third-Party Software on page 33.

Required rights for ModelDesk	To change objects in the 3-D object library as a user with restricted rights, you need write access to the library root folder.
	This is necessary because objects in the library are also modified if you work with the ModelDesk Road Generator or ModelDesk Traffic Editor.

Protecting the Installation Process Against Blocking

Motivation	To ensure that the installation finishes without blocking or interruptions, you have to specify some settings before you start the setup. In particular, this is required in the following cases: ▪ To automatically shut down the host PC after the installation. This lets you complete software installation without having to be physically present. ▪ To install dSPACE software in the setup's unattended mode.

Disabling system protection software	Make sure that the installation is not blocked by system protection software like Windows Defender, firewalls, or anti-virus software. It is recommended to disable this software (except Windows Firewall) during installation.

Required settings for decrypting dSPACE Help	After you installed dSPACE software, Help contents cannot be decrypted if document encryption for `.doc` files is enabled on your host PC via a digital rights management (DRM) system. If you cannot remove this security setting, you have to define an exception for the following files, for example, by adding them to the related whitelist of your DRM system: ▪ `C:\Program Files\Common Files\dSPACE\HelpDeskAccess\bin\HelpInstaller.exe` ▪ `C:\Program Files\Common Files\dSPACE\HelpDeskAccess\bin\HelpInstallerHandler.exe`

Avoiding power-saving states	The installation process must not be interrupted by your host PC activating a power-saving state triggered by a user action or by Microsoft Windows. An interrupted dSPACE installation process cannot be continued after you have started your host PC again. It is recommended to disable all power-saving states, for example, the sleep or the hibernation state during installation.

**Enabling Windows
8dot3name creation option**

> **Note**
>
> It is strongly recommended that the Windows **8dot3name creation** option is enabled for all drives (drives used for installation and drives used for work) before you install third-party software, such as MATLAB®/Simulink®, and the dSPACE software.

If the option is disabled during software installation, serious errors can occur when you run the dSPACE software. For example, the build process might be aborted. To repair an installation that was installed while the **8dot3name creation** option was disabled, you have to install dSPACE software and required third-party software again.

For instructions on checking the setting and enabling the option, refer to https://www.dspace.com/faq?346 or to the Microsoft Windows documentation.

**Disabling Windows User
Account Control (UAC)**

It is recommended to disable Windows User Account Control (UAC) during the installation of dSPACE software. If you cannot disable it, note the following Windows behavior:

- If UAC is enabled, the setup programs run with the administrator account instead of the user account. Therefore, it is important that the administrator account has access to the required drives, particularly to the required network drives.
- If a device driver installation is necessary, the system might display messages for the device drivers asking if you want to install the software. Select **Always trust software from...** and click **Install**. If you do not click **Install** and therefore abort the driver installation, the dSPACE software will not work correctly. For information on suppressing security warnings, refer to the following section.

Installing Root Certificates Required for Using dSPACE Software

Introduction

As of dSPACE Release 2020-B, all dSPACE executable files are digitally signed with a dSPACE certificate. To check this certificate, a valid chain of trust must be established on the PC on which the dSPACE software is installed. Part of the chain of trust are root certificates, which are available from trusted certification authorities and are installed via the Windows update mechanism.

As of dSPACE Release 2022-B, CodeMeter Runtime (from Wibu-Systems) is also digitally signed with a specific certificate.

> **Note**
>
> - If the dSPACE software is installed on a PC with Internet access, the root certificates (including the certificate required for CodeMeter Runtime) are automatically installed on the PC via the Windows update mechanism. No further user actions are required.
> - If you want to install dSPACE software on a PC without an Internet connection, the root certificates must be installed manually on your PC. dSPACE strongly recommends installing the certificates before installing the dSPACE software. It is possible that the security software installed on your PC blocks the installation of the dSPACE software if no root certificates are available on your PC.

Checking already installed certificates

You can check if the required certificates are already installed on your PC via the Certificate Manager of Windows. In the **Trusted Root Certification Authorities** folder, the following entries must be displayed among others:

- Certum Trusted Network CA

  Serial number: 04:44:c0
- GlobalSign Root R1

  Serial number: 04:00:00:00:00:01:15:4b:5a:c3:94
- GlobalSign Root R3

  Serial number: 04:00:00:00:00:01:21:58:53:08:a2
- GlobalSign Code Signing Root R45

  Serial number: 76:53:fe:ac:75:46:48:93:f5:e5:d7:4a:48:3a:4e:f8
- VeriSign Universal Root Certification Authority

  Serial number: 40:1a:c4:64:21:b3:13:21:03:0e:bb:e4:12:1a:c5:1d
- Required only for CodeMeter Runtime: DigiCert Trusted Root G4

  Serial number: 05:9B:1B:57:9E:8E:21:32:E2:39:07:BD:A7:77:75:5C

> **Tip**
>
> To access the **Certificate Manager**, type `certmgr.msc` in the search field of the Windows taskbar, and press **Enter**.

Installing certificates manually on PC with dSPACE software

If the dSPACE software is installed on a PC without an Internet connection, and the above listed certificates are not already installed on your PC, you have to download and install the required root certificates manually.

1. Download the following root certificates:
   - From Certum:
     https://www.certum.eu/en/cert_expertise_root_certificates/#id2

     Select the certificate with the serial number 0444C0 in the CRT format.

- From GlobalSign R1: https://secure.globalsign.net/cacert/Root-R1.crt

  The link leads directly to the certificate.

- From GlobalSign R3: https://secure.globalsign.net/cacert/Root-R3.crt

  The link leads directly to the certificate.

- From GlobalSign Code Signing Root R45:
  https://secure.globalsign.com/cacert/codesigningrootr45.crt

  The link leads directly to the certificate.

- From VeriSign: https://cacerts.digicert.com/universal-root.crt

  The link leads directly to the certificate.

- From Digicert (required only for CodeMeter Runtime):
  https://cacerts.digicert.com/DigiCertTrustedRootG4.crt

  The link leads directly to the certificate.

2. Open each of the downloaded files, for example, by double-clicking.

   The related Certificate window opens. Complete the following steps for each required root certificate.

3. On the General page, click the Install Certificate button.

   The Certificate Import Wizard opens.

4. Select either Current User or Local Machine (recommended setting) as store location and click Next.

   > **Tip**
   >
   > To use the local machine as store location, administrator rights are required.

5. Select Place all certificates in the following store.

6. Search and select the Trusted Root Certification Authorities store via the Browse button and click OK.

7. In the Certificate Import Wizard, click Next.

   An information window with the setting you have made is displayed.

8. Click Finish, to import the root certificate to the selected store.

Installation of dSPACE certificates in unattended mode

After downloading, you also can install the dSPACE certificates in unattended mode. However, this is only available for the Local Machine store and can be done as follows:

Open the administrative Command Prompt window and enter: `certutil.exe -addstore -enterprise -f -v root <Path to certificate file>`

Notes on Using dSPACE Help

Objective

To further improve the content and functionality of dSPACE Help, user behavior in the product is analyzed. The data collected is anonymous and cannot be used to identify you.

By default, you can decide at any time whether user behavior is analyzed. In addition, the analytics function can be permanently disabled during the installation of the dSPACE software.

PCs without Internet access

> **Note**
>
> If the PC on which the dSPACE software is installed does not have Internet access, no behavior data is sent. In this case, you do not have to explicitly disable it.

Disabling analytics function in dSPACE Help

When you start dSPACE Help for the first time after installing the dSPACE software, the following dialog is displayed, asking you to accept or decline the analytics functionality:
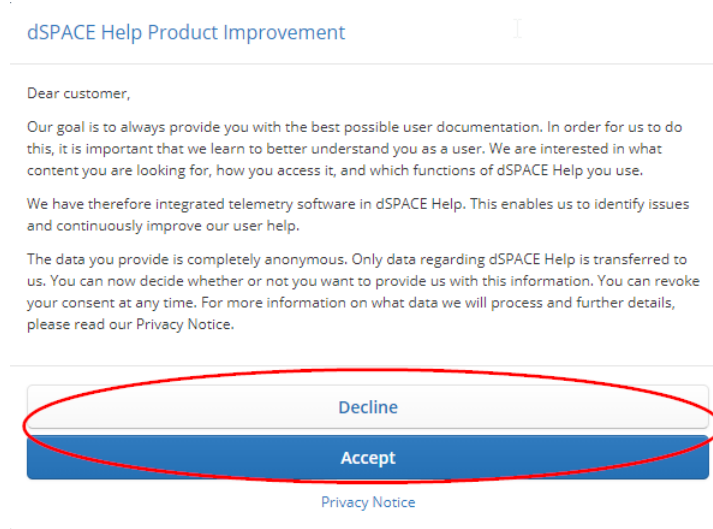
After that, you can change the setting you made at any time as follows:

1. From the footer in the dSPACE Help window, click **Privacy Notice**.

2. In the **Privacy Notice** window, use the **Allow the transmission of user data** slidebar to disable (left) or to enable the tracking (right).

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Matomo Telemetry Settings

Allow the transmission of user data.
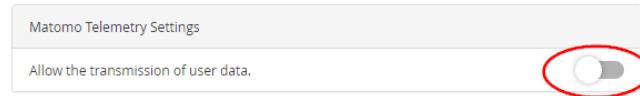
Disabling analytics function when installing dSPACE software

If you want to disable the analytics function right from the start, you have to add the following registry key via the Registry Editor on the local PC before installing the dSPACE software:

`HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\dSPACE\dSPACEHelp\DisableUserTracking`

When the dSPACE software is installed, the analytics function is then permanently disabled on the local PC and cannot be changed later by the user.

You can also use this method, for example, if you want to install the dSPACE software automatically on multiple host PCs and you want to disable the analytics function of dSPACE Help on these PCs during the installation.

Disabling analytics function after installing dSPACE software   After installing dSPACE software, it is also possible to disable the analytics function permanently on the local PC. For more information, contact dSPACE Support (https://www.dspace.com/go/supportrequest).

Installing dSPACE Software Products

Where to go from here

Information in this section

Information in other sections

How to Install dSPACE Software

Objective

To install dSPACE software, use dSPACE Setup. With dSPACE Setup, you can initially install dSPACE software and modify an existing dSPACE installation: Modify means adding a new software product (and the associated product set) or removing installed product sets in one step.

Installation from merged data

If you want the PC to shut down after the installation without having to be physically present, it is recommended to install the dSPACE software from a merged folder. Therefore, copy the contents of both dSPACE DVDs to a common folder on the PC or network drive. This enables you to install product sets from both DVDs in one step without changing the medium.

> **Tip**
>
> You can also download the complete content of both DVDs as a merged ZIP file from the dSPACE website.

Installation folder

The installation folder must not be a subfolder of an existing dSPACE installation.

You have to specify only the main installation path. dSPACE Setup then creates the required subfolders for the dSPACE installations. Some dSPACE tools have fixed installation paths that differ from the specified main installation path.

Automatic installation of basic software

Required basic software is automatically installed if the software is not on your PC yet, for example:

- Microsoft .NET Framework 4.8.1 if supported by the operating system, otherwise 4.8
- Microsoft .NET 6.0
- Microsoft Visual C++ 2012 Redistributable: Installed for dSPACE products that require the software.
- Python 3.11: Installed for dSPACE products that require Python.

Installing dSPACE Release 2023-A or later together with previous Releases

Installing products from dSPACE Release 2023-A or later on the same PC as products from dSPACE Release 2017-A or earlier is no longer supported and therefore not recommended.

A corresponding warning dialog is displayed during the software installation. If you do not confirm this warning, you cannot install products from dSPACE Release 2023-A and later if you already have installed products from dSPACE Release 2017-A or earlier on your PC.

Preconditions

- Your host PC meets specific requirements. Refer to Appendix: System Requirements on page 81.
- Your host PC has Internet access during installation of the software. If you want to install dSPACE software on a PC without an Internet connection, you have to manually install specific root certificates on the PC before installing the dSPACE software. Refer to Installing Root Certificates Required for Using dSPACE Software on page 37.
- The required third-party software is installed. Refer to Notes on Installing and Using Third-Party Software on page 33.
- You have unrestricted administrator rights. For other required rights, refer to Required User Rights on page 35.
- The installation process is not blocked. Refer to Protecting the Installation Process Against Blocking on page 36.
- You have access to the source media, e.g., dSPACE DVDs or downloaded installation files.

Method

To install dSPACE software

1 Close all running programs and finish all runnings deinstallation processes before installation.

2 Start dSPACE Setup.

Install Software Initially	Add and/or Remove Software
Execute `Install_Release.exe`. You can access dSPACE Setup as follows: ▪ Via the root directory on both dSPACE DVDs. ▪ Via the root directory of the downloaded installation files (mounted ISO images or unpacked ZIP files).	From **Start** – **Windows System** – **Control Panel** – **Programs and Features**, double-click **dSPACE Release 2024-A**.

Note

Some dSPACE products have their own setup program, which can be identified by their names:
▪ SYNECT (`Install_Synect.exe`)
▪ dSPACE tools that can be downloaded from the dSPACE website as separate software packages (e.g., `Install_Profiler.exe`)
The features, the workflow, and the design of the setup programs are always the same.

dSPACE Setup starts.
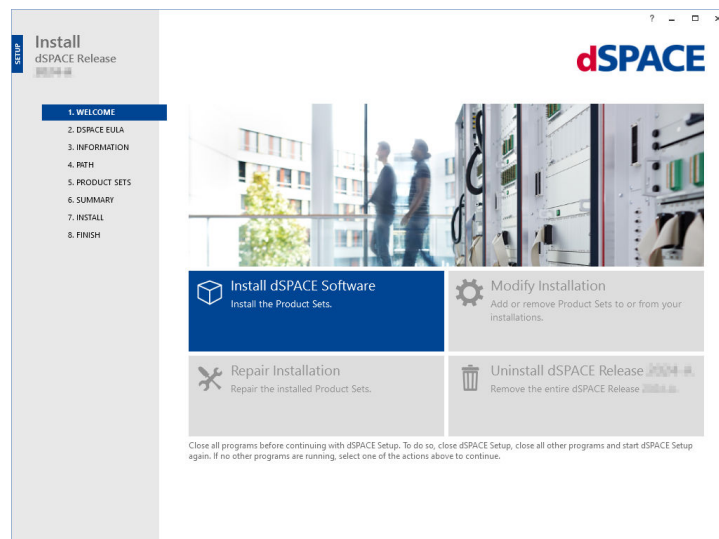
Depending on existing dSPACE software on your host PC, only one of the installation options is available (install software initially or modify an existing dSPACE installation).

3 Depending on your use case, select from the following options:

Install Software Initially	Add and/or Remove Software
Select Install dSPACE Software.	Select Modify Installation.
Specify the main installation path.	-

4 Select the product sets you want to install.
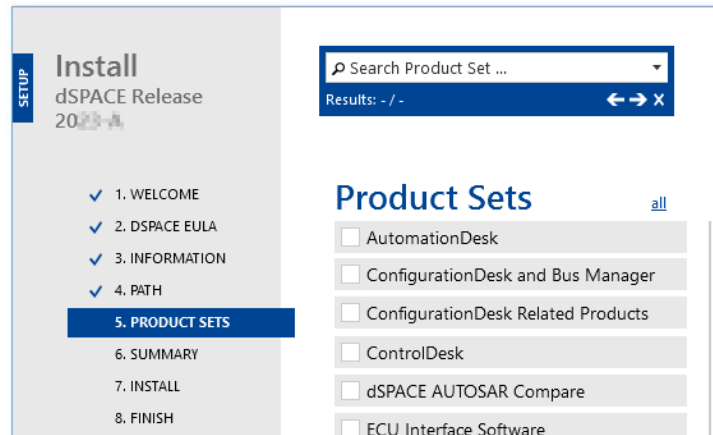
A check mark in a checkbox indicates product sets to be installed.

Valid for Modify Installation:

- Product sets with a blue dot are already installed and will remain installed. Clicking a blue dot changes it to a red X and selects a product set for being removed.
- If a product is contained in multiple product sets, it will not be removed until you remove the last product set that contains it.

> **Tip**
>
> If you are not sure which product set contains the product you want to add and/or remove, locate it via the search field. Type the product name into the field (Search Product Set ...) at the top of the window.

5 Click Next.

The Summary page opens.

6 Select the options to be executed after the installation has finished, i.e., select Shut down after ... and/or clear Start Installation Manager after ....

> **Tip**
>
> You can still change your selection after you have started the installation process.

7 Click Start to begin dSPACE software installation.

8 When prompted, restart your host PC.

> **Note**
>
> In some cases, the installation of dSPACE Help is not complete when you are prompted. Check the installation status and wait before restarting the PC. However, if you restart the PC before installation is complete, the installation of dSPACE Help is continued and then finishes without errors.

9 Log on as the same user directly after restart. This allows the system to complete the installation correctly. If you must log on with administrator rights, dSPACE Setup prompts you to do this.

> **Tip**
>
> If the Windows auto logon functionality is enabled on your PC, press the **Shift** key directly after restarting your PC, and hold the key until the logon screen opens. This lets you log on as the same user with administrator rights.

10 Go to https://www.dspace.com/go/patches and check the website for patches for your dSPACE installation.

11 Download and install the available patches. Refer to How to Install dSPACE Software Updates and Patches on page 47.

12 If applicable: Install dSPACE solutions. For instructions, refer to the documentation of the solution.

Result   You installed or modified dSPACE software.

Next steps   To work with your installed software, you have to activate the required licenses. For this, use dSPACE Installation Manager. Refer to License Activation (Working with CodeMeter Licensing Technology 📖).

After the required licenses are activated, you have to decrypt encrypted software archives of your dSPACE installation. For this, use dSPACE Installation Manager. Refer to Decrypting Encrypted Archives of dSPACE Software Installations (Managing dSPACE Software Installations 📖).

How to Install dSPACE Software Updates and Patches

Keeping your dSPACE installation up to date   dSPACE strongly recommends that you keep your dSPACE installations up to date. For example, software patches usually contain bug fixes for your dSPACE software.

Getting information on available updates and patches	There are two ways to get information on available updates and patches: ▪ Visit our website at https://www.dspace.com/go/patches periodically and download and install the most recent software updates and patches. ▪ Use dSPACE Installation Manager dSPACE Installation Manager 22.2 and later can check and display whether an update is available for your installed dSPACE software. This can be done manually or automatically. In the latter case, dSPACE Installation Manager uses notifications to inform you if an update is available. You can also download the update via the dSPACE Installation Manager.

> **Note**
>
> Be aware of the following restrictions:
> ▪ Only updates for dSPACE software released with dSPACE Release 2020-A and later are displayed.
> ▪ For the following software, no updates are displayed, even if updates are available:
>   ▪ dSPACE Firmware Manager, dSPACE Firmware Archives
>   ▪ dSPACE Installation Manager
>   ▪ Third-party software provided with a dSPACE Release, for example, software from Wibu-Systems
>   ▪ dSPACE software that is not delivered within a dSPACE Release, for example, software products from the dSPACE Solutions collection or AURELION
> ▪ Hotfixes are not supported and therefore not displayed in general.

For more information, refer to Getting Information on Available dSPACE Software Updates (Managing dSPACE Software Installations 📖).

Required tasks after installing software updates and patches	After the dSPACE installation was updated with a software update or a patch, check if dSPACE Installation Manager displays "Out of Date" archives on the Encrypted Parts page. In this case, you have to run the decryption process again for the patched installation.

Notes on removing updates, patches or hotfixes	To remove updates, patches or hotfixes of a specific dSPACE Release, you need the related dSPACE software source media during the removal process, such as the dSPACE DVD set or the merged contents of both DVDs. After removing software updates, patches or hotfixes, you also have to check if you have to run a decryption process again. This is the case if dSPACE Installation Manager displays files as out of date.

Preconditions	▪ You have administrator rights. ▪ The dSPACE product for which you want to install the software update or patch is installed on your host PC. ▪ Depending on the update or patch, the dSPACE installation that contains the product to be updated must be the active installation. In this case, the update

setup informs you that you have to activate the corresponding installation first. For instructions on how to activate an installation, refer to How to Activate a Single dSPACE Installation (Managing dSPACE Software Installations 📖).

Method	**To install dSPACE software updates and patches**
	1 Go to https://www.dspace.com/go/patches or use dSPACE Installation Manager.
	2 Check for updates and patches for your current dSPACE installation.
	3 Download and install available updates and patches.
	4 When prompted, restart your host PC.
Result	The dSPACE installation is updated with the software update or patch.
Next steps	Check, if you have to run a decryption process again with dSPACE Installation Manager. Refer to Decrypting Encrypted Archives of dSPACE Software Installations (Managing dSPACE Software Installations 📖).

Installing dSPACE Bypassing Services

Motivation	Before you can use the dSPACE Calibration and Bypassing Service and/or dSPACE Internal Bypassing Service, you have to install them in separate steps after you have installed the related product set (ECU Interface Software) via dSPACE Setup.
	The bypassing services are installed encrypted on your host PC. Their setup programs are not available until you have decrypted their installation files.
Workflow	The following flowchart shows the required sequence required to install dSPACE Calibration and Bypassing Service and/or dSPACE Internal Bypassing Service.

```
┌─────────────────────────────────┐
│  Install the ECU Interface Software │
│    product set via dSPACE Setup   │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│         Activate licenses         │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│     Decrypt encrypted archives of  │
│          dSPACE software          │
└─────────────────────────────────┘
                │
                ▼
┌─────────────────────────────────┐
│  Install dSPACE Calibration and   │
│  Bypassing Service and/or dSPACE  │
│   Internal Bypassing Service via  │
│         separate setup files      │
└─────────────────────────────────┘
```
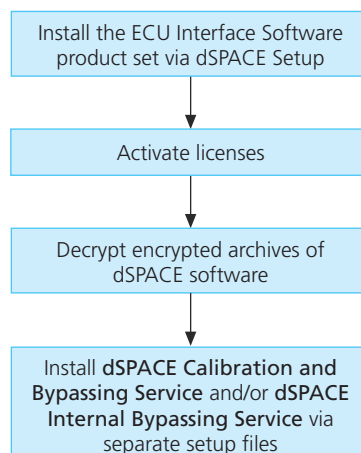
Accessing setup programs

After decryption, the following setup files reside in the `%ProgramData%\dSPACE\<InstallationGUID>\dsECU\Services` folder:

- `dSPACECalibrationAndBypassingService_<version>.exe`
- `dSPACEInternalBypassingService_<version>.exe`

> **Tip**
>
> You can access the `<InstallationGUID>` folder via the shortcut in the Windows Start menu.
> Select **Start – dSPACE RCP and HIL 2024-A – RCP and HIL 2024-A ProgramData Folder**.

Installation

Start the setup program and follow the instructions on the screen.

> **Note**
>
> You can select any existing folder as the installation folder or create a new one. Write permission for the installation folder is required.

Installation Notes for the SYNECT Server

Scenarios for working with a SYNECT server

You can use the SYNECT server and SYNECT clients in the following scenarios:

Scenario	Description
Development server	The SYNECT server and a SYNECT client are installed on the same PC. The SQL Server Express version that can be installed with the SYNECT server is used as a database. You can start the SYNECT server as a Windows service. HTTP communication between client and server is not encrypted. This scenario is useful for quick installation and configuration, testing, and development purposes. Do not use this scenario to cooperate with many users or work with large data. For instructions on quick server configuration, refer to Getting Started with the SYNECT Server (The SYNECT Server Guide 📖).
Production server	The SYNECT server is installed on a server PC. SQL Server is used as a database. The SYNECT server is operated as an application using *Internet Information services (IIS)*. Typically, the system administration installs the SYNECT server. Refer to Configuring Servers (The SYNECT Server Guide 📖).
Integrating system models	If you want to use SYNECT solely for integrating system models, it is sufficient to install and configure the SYNECT server as a development server. Use a production server for all other use scenarios.

Microsoft SQL Server 2019 Express installation	The dSPACE Setup provides an installation of Microsoft SQL Server 2019 Express, which you can use as pre-installed database for development servers.

You can install this preconfigured version by selecting the **Microsoft SQL Server Express for SYNECT Server** product set during setup. In this case, the database is installed together with the SYNECT server.

Do not install SQL Server 2019 Express if you want to perform one of the following tasks:

- Install the SYNECT server for a production server.

  In this case, install a supported version of SQL Server. Refer to the table above.

  > **Note**
  >
  > Do not install SQL Server 2019 Express on a PC with a server operating system such as Microsoft Windows Server 2016.

- Install the SYNECT server on a PC with a previously installed SQL Server 2019 Express installation, e.g., for migration scenarios.

  In this case, use the existing version as the SYNECT database.

Removing a SYNECT server   If you installed the SQL Server 2019 Express with the SYNECT server the databases that you created with SQL Server 2019 Express and the runtime are not removed when you remove the SYNECT server.

You can uninstall the SQL Server 2019 Express runtime via **Programs and Features** from the Windows Control Panel if it is no longer required by other (non-dSPACE) software installed on your PC.

Problems when installing Microsoft SQL Server Express for SYNECT Server   The installation of Microsoft SQL Server Express for SYNECT Server might not complete in the following cases:

- The installation of Microsoft SQL Server 2019 Express for SYNECT Server might not complete if SQL Server 2012 Native Client is installed.
- The installation of Microsoft SQL Server Express for SYNECT Server cannot be completed if the Windows service **Windows Modules Installer** is stopped.

For solutions, refer to Troubleshooting (The SYNECT Server Guide 📖).

Using dSPACE Software on Virtual Machines (VMs)

Introduction	You can operate several dSPACE products installed on virtual machines. However, some dSPACE products support VMs only with limitations, and other dSPACE products cannot be operated on VMs at all.

Usage restrictions

> **Note**
>
> The dSPACE End User License Agreement (EULA) prohibits:
> - Using a virtual machine for circumventing license protection mechanisms, for multiple use of an acquired license or for use outside the use determined by the license type.
>
> If you have any questions or encounter any problems, contact dSPACE Support (www.dspace.com/go/supportrequest).

Recommended virtual machine software

dSPACE tests the functionality of dSPACE software products with current VMware products and VM hardware compatibility version 10 and version 13.

You can use Windows, Linux, or macOS® as the host operating system.

Support of dSPACE software on virtual machines

> **Note**
>
> The following table shows the compatibility for all dSPACE products. For products that support VMs with limitations, the known limitations are listed. For these products, further limitations might apply depending on the use case.

Product	Full Support	Support with Known Limitations	No Support
AutomationDesk	—	✓ Known limitations: - Access to DS1104 R&D Controller Boards is not possible.	—
Automotive Simulation Models	✓	—	—
Bus Manager (stand-alone)	✓	—	—
Calibration API package	✓	—	—
ConfigurationDesk	✓	—	—
ControlDesk	—	✓ Known limitations: - Access to DS1104 R&D Controller Boards is not possible.	—
Data Dictionary Manager	✓	—	—
DCI Configuration Tool	✓	—	—
dSPACE AUTOSAR Compare	✓	—	—
dSPACE Bus API Package	—	✓ Known limitations: - The usage of USB interfaces is not supported.	—
dSPACE CAN API Package	—	✓ Known limitations: - The usage of USB interfaces is not supported.	—
dSPACE ECU Flash Programming Tool	✓	—	—
dSPACE FlexRay Configuration Package	✓	—	—
dSPACE Installation Manager	✓	—	—
ECU Interface Manager	✓	—	—
ECU bypassing target compiler	✓	—	—

Product	Full Support	Support with Known Limitations	No Support
Failure Simulation	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
Firmware Archives	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
Firmware Manager			
FPGA Programming Blockset	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
Model Compare	✓	—	—
Model Container Utility	✓	—	—
ModelDesk	—	✓ Known limitations: ▪ The Traffic Object Manager cannot show custom sensor points in the preview. ▪ Plotting occasionally does not start if a start trigger is used.	—
Model Interface Package for Simulink	✓	—	—
Platform API Package	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
Real-Time Testing	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
RTI Blocksets (Real-Time Interface)	—	✓ Known limitations: ▪ Access to DS1104 R&D Controller Boards is not possible.	—
Signal List Editor	✓	—	—
SYNECT	✓	—	—
SYNECT Server	✓	—	—
SYNECT License Server	✓	—	—
SystemDesk	✓	—	—
TargetLink	✓	—	—
VEOS	✓	—	—

Required knowledge for setting up a virtual machine

To set up a virtual machine, you must have knowledge about the technology of VMs.

In virtual environments, significantly higher latencies and lower network performance (network throughput) must be expected compared to physical PCs. dSPACE has no influence on this.

Using virtual machines in parallel If you use multiple VMs simultaneously on one PC, sharing of host resources such as CPU, network, and disk I/O bandwidth can cause timing issues. dSPACE recommends using a physical PC if high performance is required by an application.

Using a virtual machine on the host PC

System requirements PCs that host virtual machines with dSPACE software, must meet at least the requirements listed in Appendix: System Requirements on page 81. You are recommended to use a PC with more resources so that the software runs smoothly on a VM, because the VM software itself uses up some of the resources:

- The CPU speed and RAM size must be sufficient to run the operating system and the software on the host PC as well as the guest operating system and the application software on the VM.
- You also require sufficient free disk space to install the VM software and the software you want to run, just as you would if you were installing it directly on your PC.

Connecting dongle-based devices If you use dongle-based single-user licenses to use dSPACE software, you first have to connect the CmDongle to the host PC. Then you have to connect the **WIBU-Systems CodeMeter-Stick** device to the virtual machine on the host PC. For instructions, refer to the documentation of the VM software you use.

Using floating network licenses If you use floating network licenses, the virtual machine requires access to the dSPACE License Server. For further instructions, refer to How to Set up a Connection Between Client and Server (Working with CodeMeter Licensing Technology 📖).

Optimal display of dSPACE Help For an optimal display of the content in dSPACE Help, you have to activate the **ClearType** setting in the VM (= default setting).

You can access this setting from the Windows Start menu (**Start – Control Panel – Appearance and Personalization – Display – Adjust ClearType text**).

Using the 'Revert to snapshot' feature

> **NOTICE**
>
> **Using the 'Revert to snapshot' feature causes licenses to become invalid.**
>
> If you use the 'Revert to snapshot' feature in a VM, all software-based CmContainers on your host PC (dSPACE Activation Container and/or dSPACE Borrow Container) become invalid and the contained licenses are lost.
>
> - Do not use the 'Revert to snapshot' feature for VMs that contain software-based CmContainers with activated licenses.
> - Store the license information on CmDongles. There, the CmContainers do not become invalid after use the 'Revert to snapshot' feature.

Moving the virtual machine to a host PC with a different hardware configuration

> *NOTICE*
>
> **Moving the virtual machine to a PC with a different hardware configuration causes licenses to become invalid.**
>
> If you move your virtual machine to a host PC with a different hardware configuration, all software-based CmContainers on your host PC (dSPACE Activation Container and/or dSPACE Borrow Container) become invalid and the contained licenses are lost. This happens, for example, if the CPU type of the physical PC changes.
>
> - Do not move a virtual machine that contains software-based CmContainers with activated licenses to a host PC with a different hardware configuration.
> - Store the license information on CmDongles. There, the CmContainers do not become invalid after the virtual machine is moved.
> - However, if moving the virtual machine is absolutely necessary, contact dSPACE Support (www.dspace.com/go/supportrequest) beforehand to find solutions that can avoid major downtimes.

Removing dSPACE Software

Where to go from here

Information in this section

Information in other sections

Notes on Removing dSPACE Software

Removal only on product set level

dSPACE software is installed in larger units, called product sets. Therefore, you can uninstall software only on the product set level or on the release level. It is not possible to remove single products.

If you want to remove a specific software product from your host PC, you have to remove the related product set(s) or the complete release.

> **Note**
>
> Before removing a product set, check which products are contained in the set to ensure that you do not to remove any product you still need.

dSPACE Setup does not remove a product as long as it is used by another installed product set. Products are not installed multiple times.

Product Set 1 ✕	Product Set 2 ✕	Product Set 3
Product A	Product C	**Product A**
Product B	**Product A**	Product D
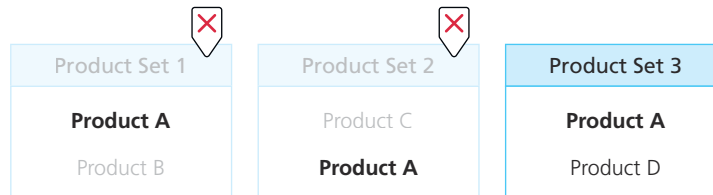
As shown in the example, a product that is to be removed (for example, Product A) might be included in multiple installed product sets. If you remove Product Sets 1 and 2, Product A remains on your host PC until you remove the last product set containing Product A (e.g., Product Set 3).

For an overview of available product sets and the contained products, refer to Mapping Between Products and Product Sets on page 17.

Effects of removing dSPACE software as of dSPACE Release 2017-B

If you remove one or several products sets, the complete dSPACE installation folder (as shown in the `Path` field in dSPACE Installation Manager) might be deleted. In this case, the following applies.

If the dSPACE installation folder is not empty after you remove software, because it contains modified files or user files, dSPACE Setup does the following:

- It renames the initial installation folder to `<Name of Installation>_UninstalledButNotEmpty`, e.g., to `dSPACE ControlDesk 6.2_UninstalledButNotEmpty`.
- It packs all the files in the folder to a ZIP archive below the renamed folder.

If you need the archived files later, you can manually extract the archive and copy the files back to the installation folder after installing the dSPACE software again. If you do not need the files any longer, manually delete the backup folders.

Removing software from dSPACE Release 2017-A and earlier

For the methods and more information on removing software from dSPACE Release 2017-A and earlier, refer to the *Software Installation and Management Guide* of the related dSPACE Release.

How to Remove Product Sets of dSPACE Release 2024-A

Objective

To remove a specific software product from dSPACE Release 2024-A, you have to remove the related product sets. It is not possible to remove single products.

> **Tip**
>
> You can also remove all products sets with one click. To do this, you have to use the setup's **Uninstall dSPACE Release 2024-A** functionality. Refer to How to Remove the Complete dSPACE Release 2024-A on page 61.

Preconditions

- You have unrestricted administrator rights.
- All dSPACE products, dSPACE Installation Manager and MATLAB are closed.
- You have access to the source media, e.g., dSPACE DVDs or downloaded installation files.

Method

To remove product sets of dSPACE Release 2024-A

1 Disconnect all dSPACE USB devices (e.g., RapidPro hardware) from your system.

2 From the Start - Control Panel menu, select Programs and Features and double-click dSPACE Release 2024-A.

dSPACE Setup starts.

> **Note**
>
> Some dSPACE products have their own entries in the Programs and Features folder, which can be identified by their names:
> - SYNECT (`dSPACE SYNECT <x>.<y>`)
> - dSPACE tools that you have downloaded from the dSPACE website as separate software packages (e.g., `dSPACE TargetLink Blockset <x>.<y>`)
>
> The features, the workflow, and the design of the setup programs are always the same.

3 Select Modify Installation.
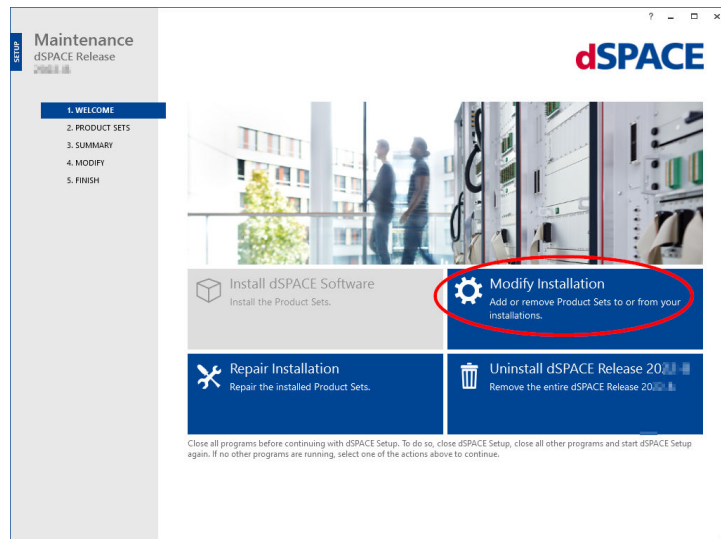
4   Select the product sets you want to remove.
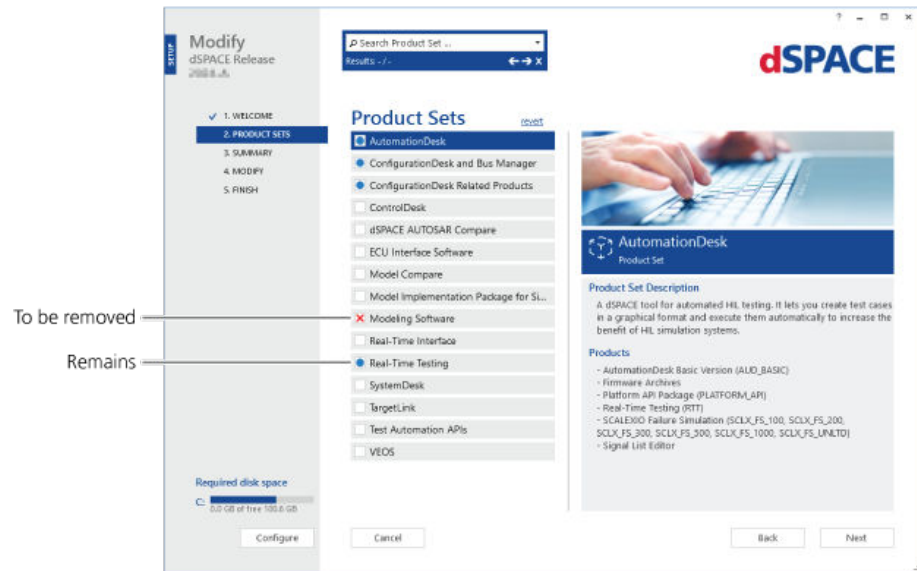
Product sets with a blue dot are already installed and will remain installed. Clicking a blue dot changes it to a red X and selects a product set for being removed.

> **Tip**
>
> If you are not sure which product set contains the product you want to remove, locate it via the search field. Type the product name into the field (**Search Product Set ...**) at the top of the window.

5   Click **Next**.

The **Summary** page opens.

6   Select the options to be executed after removal has finished, i.e., select **Shut down after ...** and/or **Start Installation Manager after ...**.

> **Tip**
>
> You can still change your selection, after you started the removal process.

7   Click **Start** to remove the selected software.

8   After removal has finished, restart your host PC when prompted.

Result

- You removed the selected product sets from your host PC.
- The dSPACE installation folders, as shown in the **Path** field in dSPACE Installation Manager, are deleted according to the rules described in Notes on Removing dSPACE Software on page 57.
- The dSPACE installation that you modified is now the *active installation*, even though it was an inactive installation before starting modifying the installation.

How to Remove the Complete dSPACE Release 2024-A

Objective

To remove all installed product sets of dSPACE Release 2024-A use dSPACE Setup's **Uninstall dSPACE Release 2024-A** functionality.

Keep in mind that SYNECT, dSPACE Installation Manager and other dSPACE tools with their own setup programs, for example, the Variable Editor must be removed in separate steps.

Preconditions

- You have unrestricted administrator rights.
- All dSPACE products, dSPACE Installation Manager and MATLAB are closed.

> **Tip**
>
> Access to the source media, e.g., dSPACE DVDs or downloaded installation files is not required.

Method

To remove the complete dSPACE Release 2024-A

1 Disconnect all dSPACE USB devices (e.g., RapidPro hardware) from your system.

2 From the **Start - Control Panel** menu, select **Programs and Features** and double-click **dSPACE Release 2024-A**.

The dSPACE setup program starts.
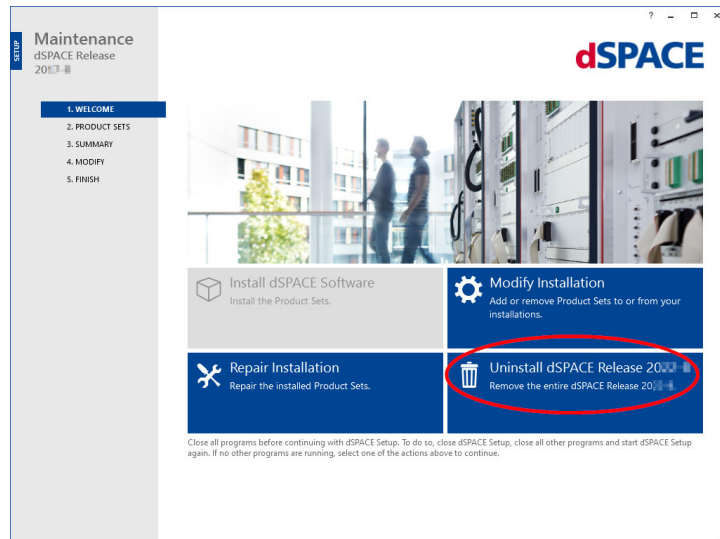
3 Select **Uninstall dSPACE Release 2024-A**.

The **Summary** page opens.

4 Select the options to be executed after removal has finished, i.e., select **Shut down after ...** and/or clear **Start Installation Manager after ....**

> **Tip**
>
> You can still change your selection, after you started the removal process.

5 Click **Start** to remove dSPACE Release 2024-A.

6 After removal has finished, restart your host PC when prompted.

Result

You removed all product sets of dSPACE Release 2024-A from the PC. The dSPACE installation folders, as shown in the **Path** field in dSPACE Installation Manager, are deleted according to the rules described in Notes on Removing dSPACE Software on page 57.

Next steps

Some basic software components still remain on the PC. Remove them via the Windows **Uninstall Program** function. To avoid problems, you must remove them in the following order:

1. Remove dSPACE Installation Manager.
2. Remove dSPACE Help.

Automating Installation Tasks

Installation

To simplify the software installation, all setup tasks can also be carried out automatically in unattended mode with a preconfigured configuration, for example, to install dSPACE software on multiple PCs.

Where to go from here

Information in this section

Basics on Preconfigured Automatic Installations

Motivation

If you want to install dSPACE software on multiple host PCs, you can use the automatic installation features of the setup to make installation quicker and easier.

Preconfigured automatic installations

The dSPACE setups are based on the MSI technology from Microsoft. They install the products MSI setups and make it possible to install preconfigured software automatically. It is therefore not possible to use third-party MSI deployment tools that use MSI transformations for automatic installation on multiple PCs.

For preconfigured automatic installations you have to use a record mode and an unattended mode. Using the record mode, you can record the installation configuration of dSPACE software. This configuration is saved to a configuration file with the *INI* file format (for example, `myReleaseInstallation.ini`). The

file contains all the settings you made while recording. Afterwards, you can use the recorded configuration file to install the software on multiple PCs in unattended mode.

> **Note**
>
> In record mode, no software is installed on your host PC. You only save your settings to a configuration file.

Recorded configuration file

Automatic installation in unattended mode

Record

Installation on one PC   Installation on multiple PCs
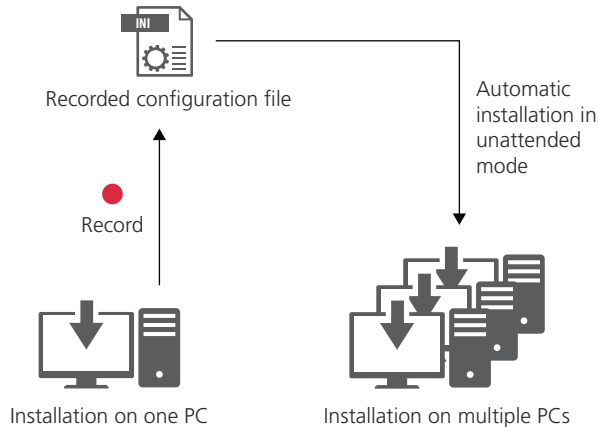
A log file tells you if the installation was completed successfully or if any errors occurred.

You can also automatically install several setups successively via a batch file in a queue.

Reusing the recorded ini file   As of dSPACE Release 2021-B, the recorded ini file can be reused for new setup versions if the following two conditions are met:

- The new setup version contains the same product sets as the setup used for recording.
- The versions of the existing EULAs has not changed with the new setup.

If the required conditions are not met, dSPACE Setup aborts the installation process and generates a corresponding error message.

Using record mode

To record setup tasks, the same setups are used (for example, `Install_Release.exe` or `Install_Synect.exe`) as for the interactive installation (i.e., standard installation).

You can access record mode of these setups via their command line utilities using `cmd.exe` from Windows.

> **Note**
>
> To run `Install_<xy>.exe`, it is recommended that you open a Command Prompt window with the Run as administrator option.

If you use long path and file names with spaces in the command line, enclose the names in double quotation marks. This indicates that spaces within the quotation marks are not command line delimiters.

Using unattended mode

For unattended setup tasks, a separate command line setup (`SetupCmd.exe`) is provided. This setup suppresses all user prompts during all installation tasks.

You can access the `SetupCmd.exe` command line setup via `cmd.exe` from Windows.

> **Note**
>
> To run `SetupCmd.exe`, it is required that you open a Command Prompt window with the **Run as administrator** option.

If you use long path and file names with spaces in the command line, enclose the names in double quotation marks. This indicates that spaces within the quotation marks are not command line delimiters.

Available commands for both modes

With the available commands and additional optional parameters, you can perform specific tasks. Refer to Commands and Parameters for Unattended Installations on page 71.

> **Note**
>
> Commands and parameters such as `--configonly` are case-sensitive.

Opening a help list

For help on the commands and parameters, open a Command Prompt window with the **Run as administrator** option and enter:

- `<Drive>\Install_<xy>.exe --help`: if you are using the setup in the record mode, for example, the `Install_Release.exe` setup
- `<Path>\SetupCmd.exe --help`: if you are using the setup in unattended mode

  The `SetupCmd.exe` is located in subfolders and not in the root folder. For example, on the dSPACE DVDs these are the `\RLS` and `\SYNECT` folders.

Obtaining the status of the installation process

If you install dSPACE software in unattended mode, no user interface is displayed. However, there is a dSPACE icon shown in the notification area on the taskbar.

Move the mouse pointer over the icon to see the current status of the installation process as a percentage. To open a more detailed progress window, you can double-click the tray icon at any time during the installation or use its context menu. In this window, a progress bar displays the progress of the overall installation process and the current installation step. Refer to the following illustration.
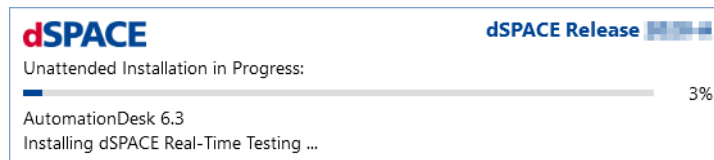
To display the progress window during unattended installations automatically, you can use the `--showprogress` parameter. You also can save the current progress to a separate log file, for example, to monitor the installation progress over the network. Refer to Commands and Parameters for Unattended Installations on page 71.

Executing setup tasks in a queue

You can use a batch file to execute a sequence of setup tasks:

1. Record each setup task in a separate configuration file.
2. Create a batch file containing commands and additional parameters, as shown in the following example.

Batch file example

```
<Path>\SetupCmd.exe --install --load "c:\_myReleaseinstallation.ini" --noreboot --ignorependingreboot
<Path>\SetupCmd.exe --install --load "c:\_mySYNECTinstallation.ini" --noreboot --ignorependingreboot
```

> **Note**
>
> To avoid circumstances that interrupt queued setup tasks, you must:
>
> - Add the `--noreboot` and the `--ignorependingreboot` parameters to the command. Refer to the previous example.
> - In the **Summary** dialog of dSPACE Setup: Clear the **Shut down after installation** and **Start Installation Manager after installation** checkboxes.
>   Restart the PC manually when the actions defined in the batch file are finished.

Installing patches

You can also install patches in unattended mode. For help on the available commands and parameters, open a Command Prompt window, go to the folder that contains the patch, and enter: `<Patchname>.exe --help`

To install a product together with its patch, use a batch file, as shown in the following example.

```
<Drive>\Install_Release.exe --install --load "c:\_myReleaseinstallation.ini" --noreboot --ignorependingreboot
<Drive>\Updates\<Patchname>.exe --install --noreboot --ignorependingreboot
```

Repairing an installation	If a software product displays errors messages, e.g., about missing files, the installation might be corrupted. You can repair it.

> **Note**
>
> If you want to repair dSPACE software, you have to select the product sets in record mode and save a separate configuration file. Store this configuration to a new file, for example, `_myRepairing.ini`. Use this configuration file with the command shown below.

Open a Command Prompt window (with the **Run as administrator** option) and type the following command to repair an installation:

To install dSPACE software on multiple host PCs: `<Drive>\Install_<xy>.exe --repair --load "c:\_myRepairing.ini"`

Optional parameters can be added to the command to perform specific tasks. Refer to Commands and Parameters for Unattended Installations on page 71.

How to Install dSPACE Software Automatically on Multiple Host PCs in Unattended Mode

Objective	The automatic installation feature of dSPACE setup enables you to install dSPACE software initially or to modify an existing dSPACE installation on multiple host PCs. Modifying an installation includes adding dSPACE software and/or removing dSPACE software in one installation process.

Basic information	Before starting the installation process familiarize yourself with the basics in Basics on Preconfigured Automatic Installations on page 63.

Preconditions	- You have unrestricted administrator rights. - To handle product sets on both DVDs without user interaction, you have to merge both dSPACE DVDs into a folder on a network drive or use the "dSPACE Release 2024-A 2 DVDs merged.ZIP" download package. - The host PCs on which you want to install software in unattended mode and the host PC on which you record the installation must have the same configuration. This includes the operating system and all installation folders (including the drive letter). If the configuration of the host PCs on which you want to install software differs from the configuration of the host PC on which you record the installation, this can cause errors because the installation waits for answers from dialogs that were not recorded. - Make sure that the host PCs on which you want to install the software has sufficient disc space available on the system partition as well as on the program partition.

- Microsoft .NET Framework 4.8 must first be installed on the host PCs on which you want to install the software to prevent the installation from being aborted.
- The required dSPACE certificates (CER files) must be installed on the host PCs on which you want to install the software. This is to suppress security warnings when the setup installs the dSPACE device drivers, thus preventing the installation process from being interrupted. Refer to Installing Root Certificates Required for Using dSPACE Software on page 37.

Workflow

To install dSPACE software automatically in unattended mode on multiple host PCs, you have to perform the following steps:

- Record an interactive dSPACE software installation and save it to a configuration file. Refer to Part 1 on page 68.
- Install the recorded installation automatically on multiple host PCs. Refer to Part 2 on page 69.

Part 1

To record an interactive dSPACE software installation

1 Open a Command Prompt window with the **Run as administrator** option and type `<Drive>\Install_<xy>.exe --configonly`

   The related dSPACE Setup starts in record mode.

2 Depending on the dSPACE software that is already installed, select one of the following options:
   - **Install dSPACE Software** to install dSPACE software initially.
   - **Modify Installation** to add and/or remove product sets to/from your dSPACE installation.

3 Read the dSPACE EULA and accept the license agreement.

4 Configure your dSPACE software installation:
   - Specify the main installation path (only initial installation) and click **Next**.
   - Select the product sets to be installed and/or removed and click **Next**.

   The **Summary** dialog opens.

5 In the **Summary** dialog, select the options to be executed after the installation or modification, i.e., select **Shut down after installation** and/or clear **Start Installation Manager after installation**.

   > **Note**
   >
   > If you use a batch file to execute a sequence of setup tasks, you must clear the **Shut down after installation** and **Start Installation Manager after installation** checkboxes. Otherwise, the batch file execution is stopped.

6 Click **Save** to specify the name and the path of your configuration file, for example, `c:\_myReleaseinstallation.ini`.

7 Click **Abort** to close dSPACE Setup.

Interim result

You saved your settings to a configuration file. No software is installed on your host PC.

Part 2

To install the recorded installation automatically on multiple host PCs

1 Copy your configuration file to the host PCs on which you want to install the software.

2 Open a Command Prompt window with the **Run as administrator** option.

3 In the Command Prompt window, change to the folder with the `SetupCmd.exe`. On the dSPACE DVDs these are the `\RLS` and `\SYNECT` folders.

4 Enter the following command according to the use case. The command must include the configuration file to be executed and its path:

- `<Path>\SetupCmd.exe --install --load "c:\_myReleaseinstallation.ini"`

- `<Path>\SetupCmd.exe --modify --load "c:\_myReleaseinstallation.ini"`

Optional parameters can be added to the command to perform specific tasks. Refer to Commands and Parameters for Unattended Installations on page 71.

5 Restart the host PCs.

6 Check the setup log files for errors:

Open a Command Prompt window with the **Run as administrator** option and type `<Path>\SetupCmd.exe --help`

The `SetupCmd.exe` is located in subfolders and not in the root folder. For example, on the dSPACE DVDs these are the `\RLS` and `\SYNECT` folders.

The full path to the folder with the setup log files is displayed in the Command Prompt window. Refer to the following example:

> **Tip**
>
> In some error cases, the **dSPACE_MainSetup.log** is located in the **%temp%\dSPACEMainSetup** folder.

The **dSPACE_MainSetup.log** file contains the result code indicating whether or not the unattended installation succeeded. An integer value is assigned to the MAIN_SETUP_GLOBALRETURN key name at the end of the log file. A successful unattended installation has the result code 0. Refer to the following example:

```
285 2017-09-15 11:17:19.4946 TRACE dSPACE.SetupGen.MainSetup.App.OnExit: MAIN_SETUP_GLOBALRETURN: 0
```

Contact dSPACE Support (https://www.dspace.com/go/supportrequest) for further instructions if either of these situations arises:

- The result code (**MAIN_SETUP_GLOBALRETURN**) is not 0.
- The **dSPACE_MainSetup.log** file is not located in one of the folders described above.

Result   You installed the dSPACE software on multiple host PCs.

How to Remove the Complete dSPACE Release 2024-A Automatically in Unattended Mode

Objective   To remove the complete dSPACE Release 2024-A automatically from multiple host PCs, you can use the unattended mode to make removing quicker and easier.

> **Tip**
>
> To remove single product sets, use the **--modify** command. Refer to

Preconditions
- You have unrestricted administrator rights.
- All dSPACE products, dSPACE Installation Manager and MATLAB are closed.

Method   **To remove the complete dSPACE Release 2024-A automatically in unattended mode**

1   Open a Command Prompt window with the **Run as administrator** option.

2   In the Command Prompt window, change to the folder with the **SetupCmd.exe**. On the dSPACE DVDs these are the **\RLS** and **\SYNECT** folders.

3 Enter the following command:
`<Path>\SetupCmd.exe --uninstall`

> **Tip**
>
> If you do not have access to dSPACE Setup, you can remove dSPACE software via the local installation on your host PC as well.
> - In the Command Prompt window, go to the following folder:
>   `%ProgramFiles(x86)%\CommonFiles\dSPACE\Setup\RLS2024-A`.
> - Enter the following command to start the removal process:
>   `dSPACE.MasterSetup.exe --uninstall`.

Optional parameters can be added to the command to perform specific tasks. Refer to Commands and Parameters for Unattended Installations on page 71.

4 Restart your host PCs after removal has finished.

Result

You removed all product sets of dSPACE Release 2024-A from your host PC. The dSPACE installation folders, as shown in the **Path** field in dSPACE Installation Manager, are deleted according to the rules described in Notes on Removing dSPACE Software on page 57.

Next steps

Some basic software components still remain on the PC. Remove them via the Windows **Uninstall Program** function. To avoid problems, you must remove them in the following order:

1. Remove dSPACE Installation Manager.
2. Remove dSPACE Help.

Commands and Parameters for Unattended Installations

Rules

> **Note**
>
> Commands and parameters such as `--configonly` are case-sensitive.

Overview of available commands

Command	Description
`--install`	Installs dSPACE software initially in unattended mode. This command requires the `--load "<path>"` parameter.
`--modify`	Modifies a dSPACE software installation (adds and/or removes software) in unattended mode. This command requires the `--load "<path>"` parameter.

Command	Description
`--uninstall`	Removes all product sets from the related dSPACE release from your PC in unattended mode. SYNECT, dSPACE Installation Manager, and other dSPACE tools with their own setup programs, for example, the Variable Editor, must be removed in separate steps.
`--repair`	Repairs a dSPACE software installation in unattended mode. This command requires the `--load "<path>"` parameter.
`--version`	▪ Displays the version of the used `SetupCmd.exe` command line setup. ▪ Only supported by the `SetupCmd.exe` command line setup.
`--help`	▪ Displays a list with all available commands and parameters. ▪ Displays the full path to the folder with the setup log files.

Overview of available parameters

Parameter	Description	To be Used With ...			
		Install	Modify	Uninstall	Repair
`--configonly`	▪ Starts dSPACE Setup in record mode. ▪ Not supported by the `SetupCmd.exe` command line setup.	–	–	–	–
`--load "<path>"`	Loads a previously saved configuration file. You have to enter the full path to the file, e.g., `"c:\_myReleaseinstallation.ini"`. This parameter is required by the `--install`, `--modify`, and `--repair` commands.	✓	✓	–	✓
`--dvdroot "<path>"`	This parameter describes the path to the source media (original installation files). You have to use this parameter only if you want to access the locally installed dSPACE setup program on your host PC.	–	✓	✓	✓
`--ignorependingreboot`	Use this optional parameter if you want to skip the detection for a pending restart when the setup starts. It is helpful in the following use cases: ▪ Multiple setup tasks have to be executed in a queue. ▪ dSPACE Setup displays a restart request even if a restart was just performed. This can happen if third-party software sets specific registry entries to trigger dSPACE software to restart.	✓	✓	✓	✓
`--nogui`	▪ If you use this optional parameter, the setup hides all warning and error dialogs during the initialization phase (before the installation starts). ▪ Use this parameter only if you want to access the dSPACE setup program from the source media (dSPACE DVDs or downloaded installation files). ▪ Not supported by the `SetupCmd.exe` command line setup.	✓	✓	✓	✓
`--noreboot`	If you use this optional parameter, the restart dialog at the end of the setup is not displayed and the setup task finishes without a restart. If you do not use this parameter, the PC is restarted after finishing the setup task without a prompt. Use this parameter if you want to execute several setup tasks in a queue.	✓	✓	✓	✓
`--acceptlegacysw`	If you use this optional parameter, you acknowledge and accept a warning about using legacy licenses. If you do not use this option, you cannot install products from dSPACE Release 2023-A and later if you have installed products from a dSPACE Release that requires legacy licensing (dSPACE Release 2017-A and earlier).	✓	–	–	–

Parameter	Description	To be Used With ...			
		Install	Modify	Uninstall	Repair
`--acceptos`	▪ Use this optional parameter if you want to install the dSPACE software on an operating system that is not officially supported by dSPACE and therefore issues a warning message. Without using this parameter, the setup is aborted in this case. ▪ Only supported by the `SetupCmd.exe` command line setup.	✓	–	–	–
`--installredist`	▪ Use this optional parameter if the required redistributable (e.g., Microsoft .NET Framework 4.8) is not installed on the PC. If you use this parameter, the redistributable is installed before installing the dSPACE software. ▪ Without this parameter, the setup is aborted if the required redistributable has not been installed. ▪ Only supported by the `SetupCmd.exe` command line setup.	✓	–	–	–
`--logfolder "<path>"`	Use this optional parameter if you want to save a copy of the log files to a specific folder. After the software is installed, the log files are in the specified folder. You have to provide the full path for the folder with the log files. All log files are saved in `%ProgramData%\dSPACE\` by default.	✓	✓	✓	✓
`--verbose`	Use this optional parameter only for troubleshooting purposes to create detailed verbose MSI log files. Verbose log files require a lot of disk space on the host PC. For example, a verbose log file for a large installation requires approx. 155 MB.	✓	✓	✓	✓
`--showprogress`	Use this optional parameter if you want to display the progress of the installation process in a separate progress window on your screen.	✓	✓	✓	✓
`--progressfile "<path & filename>"`	Use this optional parameter if you want to save the current progress to a separate log file. You can use this log file, for example, to monitor the installation progress over the network. The file contains only the current progress, for example, `Running: 1%`. As the progress continues, the progress information in the file is overwritten. When a single step of the installation process is complete, the file contains the following entry: `Finished: 100%`. You have to provide the full path and the name of the progress log file. For example: `c:\_MyProgress.log`.	✓	✓	✓	✓

Tips for using the progress logging

▪ The progress log file must remain writable during the installation process and therefore must not be opened exclusively by any editor. If you want to view the file contents during the installation, use a program such as Notepad++. This type of editor allows the setup to write to the log file even if it is open.

▪ If the progress status is logged on several PCs and the files are to be saved to a network folder, you must ensure that a separate log file is used for each PC, otherwise the logs will overwrite each other.

Troubleshooting

Motivation

If you have problems with your dSPACE software and suspect they are related to the installation, check the following topics.

Getting further support

Support Knowledge Base   If the information in this section does not help you to solve the problem, check the Support Knowledge Base on our website. See https://www.dspace.com/go/kb.

dSPACE Support   If the Support Knowledge Base does not help you to solve the problem, contact dSPACE Support and provide information about your dSPACE environment and the problems you have. It is recommended to use the support request form provided on the website at https://www.dspace.com/go/supportrequest. However, you can also send an e-mail or call us.

Where to go from here

Information in this section

# Checking dSPACE Installations

Motivation

If you encounter any problems during or after the installation, follow these instructions to identify the problem and solve it.

Checking log files

If you want to check the setup log files for errors, you can find them at the following location:

`C:\%ProgramData%\dSPACE\RLS20<xx-x>\dSPACEMainSetup`

The full path to the folder with the setup log files is displayed in the **dSPACE Setup Commands** dialog. Refer to the following example:
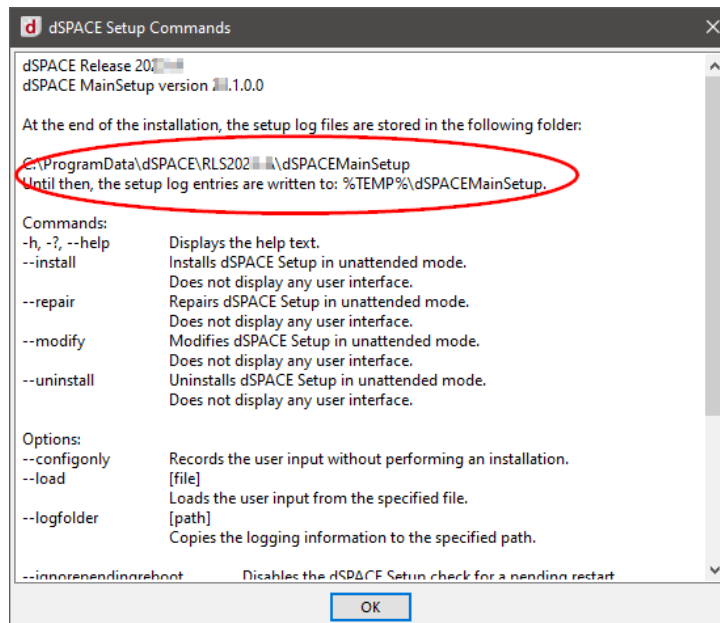
To get the location of log files of other installations, for example, from a SYNECT installation, run `<DVD>\Install_Synect.exe --help`. Note that you can only access the help from dSPACE Setup from the DVD.

This also applies to dSPACE tools with their own setup programs, which are available as software packages on the dSPACE website, for example, dSPACE Variable Editor.

Checking the functionality of the MATLAB MEX command

Start MATLAB and compile one of Simulink's sample S-functions by typing the following commands in the MATLAB Command Window in the specified order:

1. Type `cd <writable and temporary directory>`.
2. Get MATLAB root with `matlabroot`.
3. Type `!copy <MATLAB_ROOT>\toolbox\simulink\simdemos\simfeatures\src\limintc.c`
4. Type `mex('limintc.c')` to create a new `limintc.mexw64` file.
5. Type `dir limintc.mexw64` to check if the file has been built.

   If `limintc.mexw64` is listed, the MATLAB MEX command works correctly. Refer to the MATLAB manual *Application Program Interface Reference* if you encounter any problems.
6. Delete the `<writable and temporary directory>`.

Checking the integration of MATLAB-dependent products into MATLAB	1. Enter **ver** in the MATLAB Command Window to display the version numbers of the installed toolboxes. 2. If the expected dSPACE products (for example, TargetLink) are not listed, make sure that the MATLAB installation used, is linked to the related dSPACE installation. For instructions on linking, refer to How to Change the MATLAB Connection (Managing dSPACE Software Installations 📖).

How to Repair a dSPACE Software Installation

Objective	To repair a software installation of dSPACE Release 2017-B and later, you have to use dSPACE Setup.

Motivation	Repair your dSPACE software installation if problems such as the following occur: ▪ You unintentionally changed your installation, for example, you unintentionally deleted files from installed folders. ▪ The software outputs error messages concerning missing files.

Preconditions	▪ You have unrestricted administrator rights. ▪ All dSPACE products, dSPACE Installation Manager, and MATLAB are closed. ▪ You have access to the source media, e.g., dSPACE DVDs or downloaded installation files.

Method	**To repair a dSPACE software installation** **1** Disconnect all dSPACE USB devices (e.g., RapidPro hardware) from the PC. **2** From the **Start ‑ Control Panel** menu, select **Programs and Features** and double-click **dSPACE Release <yyyy-x>**. The dSPACE setup program starts.

3 Select Repair Installation.

The Product Sets page opens, displaying only the product sets that are installed on your PC.

4 Select all product sets to repair your software installation. If you know which product set you have to select for repairing, select only the one you want to repair.

5 Click Next to continue.

The Summary page opens.

6 Select the options to be executed after repairing has finished, i.e., select Shut down after ... and/or Start Installation Manager after ....

> **Tip**
>
> You can still change your selection, after you have started the repairing process.

7 Click Start to repair your software installation.

8 When prompted, restart your PC.

> **Note**
>
> In some cases, the installation of dSPACE Help is not complete when you are prompted. Check the installation status and wait before restarting the PC. However, if you restart the PC before installation is complete, the installation of dSPACE Help is continued and then finishes without errors.

Result
- You repaired your software installation.
- The dSPACE installation you repaired is now the *active installation*, even though if it was an inactive installation before you started the repair process.

Problem with the Python Installation

Problem   A damaged Python installation can cause dSPACE products to behave unusually.

Description   Typical actions that can damage a Python installation include:
- Deleting Python-related folders randomly
- Manipulating registry keys
- Installing other Python versions manually in addition to an existing dSPACE Python distribution, i.e., a Python version installed by a dSPACE setup
- Installing a non-dSPACE Python version before calling the dSPACE setup
- Automatic removal of Python 3.x-specific entries from the `Path` environment variable

Solution   For up-to-date information on solutions, refer to
https://www.dspace.com/go/python-installation-problem.

Appendix: System Requirements

Objective

Check whether your system meets the system requirements.

- The requirements for third-party software, for example, software from MathWorks®, might be higher. For more information, refer to the corresponding software documentation.
- The requirements for SIMPHERA are listed at https://www.dspace.com/go/SIMPHERA-Admin.
- The requirements for AURELION are listed at https://www.dspace.com/go/aurelion-requirements.

Where to go from here

Information in this section

Host PC Hardware

Host PC requirements

Hardware	dSPACE Software	Minimum Requirements
Host processor	All dSPACE software products	▪ Any x86-64 processor with AVX2 instruction set support
Main memory	All dSPACE software products	▪ 8 GB RAM ▪ 32 GB RAM or more (recommended)
Disk space[1]	Installation of all dSPACE software products which support Windows	▪ Up to 28.0 GB of free disk space on the program partition ▪ In addition, up to 20 GB of free disk space on the system partition, for example, for run-time software like the Microsoft .NET Framework
	SYNECT Server	1 GB of free disk space on the system partition
	Installation of all dSPACE software products which support Linux	▪ Up to 1 GB of free disk space on the /opt mount point ▪ Up to 500 MB of free disk space on the /usr mount point
Disk drives	All	DVD drive for software installation from DVD
	SYNECT Server	It is recommended to use a solid state drive for the system partition.
Ports for connecting hardware	TargetLink	For processor-in-the-loop (PIL) simulation, you need a serial port (RS232) or a free USB port, depending on the type of the evaluation board

	ControlDesk	▪ To connect DCI-KLine1, you need a USB port version 1.1 (compatible with USB 2.0). dSPACE does not guarantee compatibility with USB 3.0 or higher.
		▪ To connect DCI-CAN2 and DCI-CAN/LIN1, you need a USB port version 2.0 (compatible with USB 1.1 and USB 3.0 or higher).
		▪ To use the Steering Controller instrument, you need a USB port to connect a game controller device.
		▪ To use the graphical user interface of the ControlDesk XIL API EESPort via the RS232 interface, your host PC needs an RS232 serial port that can run at 9,600 bit/s to connect Failure Insertion Unit (FIU) boards.
		As an alternative you can use an external RS232 converter:
		  ▪ USB-to-RS232 converter: Only converters with an FTDI chipset and the newest FTDI driver are supported. Refer to https://ftdichip.com/drivers/.
		  ▪ Ethernet-to-RS232 converter: The IOLAN DS1 converter from Perle is recommended by dSPACE. Refer to https://www.dspace.com/go/eth2rs232.
		There are limitations if you use an external RS232 converter: Software triggers and dynamic errors are not supported. Communication is also time-critical and can cause communication errors.
		▪ To connect a GNSS receiver to the GNSS device, you need a COM port (RS232), a USB port (USB 1.1 up to USB 3.0), or a USB-to-RS232 converter, depending on the GNSS receiver you are using. In ControlDesk, the connected GNSS receiver is assigned to the GNSS device via a COM port.

Graphics adapter and display	All dSPACE software products on the dSPACE Release	▪ Standard graphics adapter with a minimum resolution of 1024 x 768 pixels. ▪ Standard graphics adapter with a resolution of 1280 x 800 pixels or more (recommended for ConfigurationDesk).

Hardware	dSPACE Software	Minimum Requirements
	ControlDesk	▪ Full HD graphics adapter with a resolution of 1920 x 1080 pixels (recommended). ▪ If you use ControlDesk in a VMware environment, 3-D support must be enabled in VMware.
	Real-Time Testing	The Real-Time Test Manager, the user interface for handling RTT sequences, does not support working with high-DPI monitors.

[1] Additional disk space is required for non-dSPACE software, for example, from MathWorks®.

Requirements for license handling

Subject	Host PC and Network Requirements
Enabling dongle licenses	A USB port (Version 1.1 min.): to connect the dongle.
Enabling floating network licenses	All the PCs on which you want to use dSPACE software (*license clients*) must be able to establish a TCP/IP connection to the *license server*. A standard TCP/UDP protocol is required. The default port number is 22350 (TCP and UDP), which is an officially registered port number (IANA). If needed, you can change the port number.
Activating licenses	dSPACE Installation Manager needs an Internet connection to connect to dSPACE License Central (https://licensing.dspace.de/gateways, HTTPS, Port 443). It can work with proxy servers and can also handle proxy servers with authentication (user name, password).
Required software[1]	▪ dSPACE Installation Manager (required for activating licenses) ▪ CodeMeter Runtime Version 8.0 ▪ CodeMeter Runtime requires the DigiCert Trusted Root G4 root certificate (https://cacerts.digicert.com/DigiCertTrustedRootG4.crt).
Hardware	For a host PC on which only dSPACE Installation Manager is installed or which only works as license server, the following hardware is required: ▪ Any x86-64 processor with AVX2 instruction set support ▪ 4 GB RAM main memory (or more)

[1] The required software is installed with dSPACE Setup.

dSPACE system with Ethernet connection

MicroAutoBox II, MicroAutoBox III, MicroLabBox, MicroLabBox II, and the SCALEXIO system establish a communication to the host PC via integrated Ethernet.

To connect your dSPACE system to the host PC via an Ethernet connection, your host PC must have a 10BASE-T network adapter (twisted pair, 10 Mbit/s or faster). 10BASE-T: Adapted and reprinted with permission from IEEE. Copyright IEEE 2018. All rights reserved.

Required slots for dSPACE boards in the host PC

DS1104/DS1104e   To install a DS1104, you need one free 33 MHz/32-bit 5 V PCI slot or one free PCIe slot, depending on the board variant.

Operating System

Windows operating system on host PC

The dSPACE products of dSPACE Release 2024-A support the following operating systems:

- The following editions, channels, and servicing options of Windows 10:
  - Windows 10 Professional, Education, and Enterprise (64-bit versions)

    The Windows 10 Home and Windows 10 S editions are not supported.
  - Long-Term Servicing Channel: LTSC 2019 and LTSC 2021
  - General Availability Channel: The compatibility statement of Microsoft applies. This means that newer versions released in this channel should be compatible with all previous versions. dSPACE used the 22H2 version of the General Availability Channel for testing.

  > **Note**
  >
  > dSPACE Release 2025-A will be the last dSPACE Release that supports Windows 10 with the General Availability Channel servicing option.

- The following editions, channels, and servicing options of Windows 11:
  - Windows 11 Professional, Education, and Enterprise

    The Windows 11 Home edition is not supported.
  - General Availability Channel: The compatibility statement of Microsoft applies. This means that newer versions released in this channel should be compatible with all previous versions. dSPACE used the 23H2 version of the General Availability Channel for testing.

- Windows Server LTSC 2019 Standard and Datacenter editions, each with the Desktop Experience installation option. Only the listed editions are supported. The Windows Server 2019 Essentials edition is not supported.

  > **Note**
  >
  > dSPACE Release 2025-A will be the last dSPACE Release that supports Windows Server LTSC 2019.

- Windows Server LTSC 2022 Standard and Datacenter editions, each with the Desktop Experience installation option. Only the listed editions are supported. The Windows Server 2022 Essentials edition is not supported.

Some limitations apply when you use dSPACE software in conjunction with features of Windows. Refer to Limitations for Using Windows Features on page 86.

Support of Windows Docker   You can also run some dSPACE products in a Windows Docker container. For more details, contact dSPACE Support (https://www.dspace.com/go/supportrequest).

Linux operating system on host PC

The dSPACE products of dSPACE Release 2024-A with Linux compatibility support the following operating system:

- Ubuntu 22.04 LTS with the General Availability Kernel in the Desktop, Server, and Cloud version (not supported by TargetLink)
- Only supported by TargetLink: Ubuntu 20.04 LTS with the General Availability Kernel in the Desktop, Server, and Cloud version each based on the AMD 64-bit processor architecture.

Some limitations apply when you use dSPACE software in conjunction with features of Linux. Refer to Limitations for Using Linux Features on page 88.

Support of Linux Docker   You can also run the dSPACE products with Linux compatibility in a Linux Docker container. For more details, contact dSPACE Support (https://www.dspace.com/go/supportrequest).

Operating system on server for floating network licenses

If you purchased floating network licenses, you have to specify one of the network PCs as a license server. Any PC with CodeMeter Runtime software can be used as a license server.

Valid for servers without dSPACE software   You can use operating systems from Microsoft Windows on a dSPACE license server on which no dSPACE software is installed.

> **Note**
>
> - If you want to use Ubuntu Linux as operating system for the license server, contact dSPACE Support (www.dspace.com/go/supportrequest).
> - Other operating systems are not tested. You can use them at your own risk. dSPACE does not provide support in this case.

Valid for servers with dSPACE Installation Manager   dSPACE Installation Manager supports the same Windows operating systems as the other dSPACE software products described above.

Allowing communication

Installing of additional firewall rules   Additional Windows firewall rules are installed during the installation of various dSPACE software products. For example, the first rule allows communication with a dSPACE SCALEXIO system. The second rule allows ControlDesk to receive or send data via a network channel. These example rules are created by the following commands:

- ```
  netsh advfirewall firewall add rule name="dSPACE Device
  Access Service"
  service=any dir=in action=allow profile=any
  protocol=icmpv4:0, any description="Allow the dSPACE Device
  Access
  Service to receive data via network."
  ```

- ```
  netsh advfirewall firewall add rule name="dSPACE
  ControlDesk{dSPACE ControlDesk 2024-A}""
  program=<main installation path>\dSPACE ControlDesk 2024-
  A\Main\Bin\ControlDesk.exe"
  dir=in action=allow profile=any description="Allow dSPACE
  ControlDesk to send/receive data via network."
  ```

Required open TCP/IP network ports   If you are using third-party firewall software on your host PC, ensure that the TCP/IP communication of dSPACE software is not blocked:

- VEOS requires the following open TCP/IP network ports:
  - For Windows: 111 (TCP and UDP), 1907 (TCP), 3702 (UDP), 7214 (TCP and TCP6), 7215 (TCP and UDP), 7216 (TCP), 8090 (TCP), 9923 (UDP), 49152 … 65535 (TCP, TCP6 and UDP)
  - For Linux: 111 (TCP and UDP), 1907 (TCP), 7215 (TCP and UDP), 7216 (TCP), 8090 (TCP), 9923 (UDP), 32768 … 60999 (TCP, TCP6 and UDP)
- ConfigurationDesk used together with one or more connected MATLAB installations requires up to 10 open TCP/IP network ports in the range 49196 … 49205 (TCP):
  - Whenever a connected MATLAB is started, the first available port from the specified range is taken.
  - When ConfigurationDesk is started, it also uses the first free port from the specified range.
  - If ConfigurationDesk is not running or no MATLAB instance is running, then no ports from the specified range are used.
- dSPACE Installation Manager and CodeMeter licensing software require the following open TCP/IP network ports:
  - 22350 (TCP and UDP) for communication in a LAN network (if not changed from the default setting).
  - 22352 (TCP and UDP): To access CodeMeter WebAdmin via http.
  - 22353 (TCP and UDP): To access CodeMeter WebAdmin via https.
- dSPACE Help requires an open TCP/IP network port for interprocess communication between its components. The default port number is 11000. If this port number is already being used, another free port is used automatically. The related processes can be identified by the following prefixes: `HelpAbsLayer<xxx>`, `HelpInstaller<xxx>`.

Limitations for Using Windows Features

Motivation	Some limitations apply to using dSPACE software in conjunction with features of Windows.
Installing and running dSPACE software within the Windows service accounts	Non-service-based dSPACE software is not designed to be installed or run in the context of any predefined Windows service account (LocalService, NetworkService, LocalSystem).

Fast user switching not supported	dSPACE software does not support the fast user switching feature of Windows.
Closing dSPACE software before PC shutdown	The shutdown process of Windows operating systems might cause some required processes to be aborted although they are still being used by dSPACE software. To avoid a loss of data, it is recommended that you close the dSPACE software manually before shutting down the PC.
User Account Control	It is recommended that you disable the Windows User Account Control (UAC) during the installation of dSPACE software. If you cannot disable UAC, note the following Windows behavior: If UAC is enabled, the setup programs use the administrator account instead of the user account. Therefore, it is important that the administrator account has access to the required drives, particularly the required network drives.
USB devices	If you connect dSPACE USB devices that use cables with optoisolation to the PC for the first time, there might be a message that the device driver software was not installed successfully. However, the dSPACE device will work properly later on.
Using high-DPI monitors	Real-Time Testing has limitations for working with high-DPI monitors. The Real-Time Test Manager, the user interface for handling RTT sequences, does not support working with high-DPI monitors.
High-contrast mode not supported	dSPACE software was not developed for or tested against the Windows high-contrast mode. You are recommended to disable the high-contrast mode when working with dSPACE software. Otherwise, the visualization of the user interfaces might be impaired.
FIPS support	dSPACE software was not developed for or tested against the FIPS PUB 140-2 U.S. government computer security standard (Security Requirements for Cryptographic Modules). For more information on FIPS, refer to https://docs.microsoft.com/en-us/windows/security/threat-protection/fips-140-validation.
Long paths	dSPACE software does not support the long path syntax of the Windows API. If a path that exceeds 260 characters is used directly or indirectly, the behavior of the dSPACE software is not defined.

Enabling Windows 8dot3name creation option

> **Note**
>
> It is strongly recommended that the Windows **8dot3name creation** option is enabled for all drives (drives used for installation and drives used for work) before you install third-party software, such as MATLAB®/Simulink®, and the dSPACE software.

If the option is disabled during software installation, serious errors can occur when you run the dSPACE software. For example, the build process might be aborted. To repair an installation that was installed while the **8dot3name creation** option was disabled, you have to install dSPACE software and required third-party software again.

For instructions on checking the setting and enabling the option, refer to https://www.dspace.com/faq?346 or to the Microsoft Windows documentation.

Settings in Windows for user locale and system locale must match

MATLAB reads the user locale and system locale settings that are specified in Windows operating systems. The user locale and the system locale must match. If these settings are not the same, the system might not behave as expected when working with MATLAB and dSPACE software.

For instructions on checking and changing the settings, refer to https://www.mathworks.com/help/matlab/matlab_env/setting-locale-on-windows-platforms.html?s_tid=gn_loc_drop.

This affects all MATLAB versions and all Windows operating systems, that are supported by dSPACE.

Limitation for using single-user licenses

If you use a PC with a Windows Server operating system, for example, Windows Server 2019, and you want to work with dSPACE software on this PC using Microsoft Remote Desktop Connection, you have to use a floating network license to activate license-protected software. Single-user licenses are not supported in this case.

Limitations for Using Linux Features

FIPS support

dSPACE software was not developed for or tested against the FIPS PUB 140-2 U.S. government computer security standard (Security Requirements for Cryptographic Modules). For more information on FIPS, refer to:

- Ubuntu 20.04 LTS: https://ubuntu.com/blog/fips-certification-ubuntu-20-04-lts

Long paths

dSPACE software does not support the available path length of 4,096 characters. If a path that exceeds 260 characters is used directly or indirectly, the behavior of the dSPACE software is not defined.

Locale	dSPACE software was tested only on a system with a US English locale.

Run-Time Compatibility of dSPACE Software

Definition	Run-time compatibility means that: ▪ Different dSPACE products can be used in parallel after software installation. ▪ dSPACE products without interaction can run independently of each other.

Compatibility of products in dSPACE Release 2024-A	dSPACE recommends using only software products from the same dSPACE Release. This ensures maximum run-time compatibility.
	
	Observe the following points:
	▪ Limitations regarding run-time compatibility in the dSPACE tool chain might occur if products from different dSPACE Releases are used together.
	  If dSPACE products interact directly (through automation interfaces) or indirectly (through common file types like TRC), limitations might apply. For minor limitations, refer to the relevant product documentation. The major limitations are described hereafter.
	  In rare cases, an additional patch must be installed for a product to achieve run-time compatibility. For more information on the patch and whether a patch is required, refer to https://www.dspace.com/go/CompPatch.
	▪ RCP and HIL software products (of dSPACE Release 2024-A) cannot be used in combination with RCP and HIL software products from earlier dSPACE Releases.

Compatibility of ConfigurationDesk with products from the RCP and HIL software package	ConfigurationDesk is no longer part of the RCP and HIL software package. As of dSPACE Release 2024-A, ConfigurationDesk can be used in parallel with products from the RCP and HIL software package without restrictions if the combination of the product versions is marked as **Run-Time Compatible** in the following table.

ConfigurationDesk	Products from RCP and HIL Software Package	Run-Time Compatible
ConfigurationDesk 24.1 (on dSPACE Release 24-A)	RCP and HIL Software 2023-B and earlier	—
	RCP and HIL Software 2024-A	✓

Combining dSPACE products from earlier Releases	For notes on the combined use of different products from earlier Releases, refer to https://www.dspace.com/go/ds_sw_combi.

Overview of Required Third-Party Software

Overview

You might need to install third-party products to work with dSPACE products. The following table shows which dSPACE product requires which third-party software.

Third-Party Software	RCP and HIL Software[1]	ConfigurationDesk	AutomationDesk	TargetLink	Model Compare	ControlDesk	VEOS
MATLAB®/Simulink®	To work with: • Model Interface Package for Simulink • RTI, RTI-MP • Various dSPACE blocksets	To work with Simulink models	To automate MATLAB via AutomationDesk's MATLAB Access library	To work with TargetLink	To work with Model Compare	–	–
Simulink® Coder™ and MATLAB Coder™	• For code generation with Model Interface Package for Simulink • For code generation with RTI, RTI-MP, and various dSPACE blocksets • For C code generation of Automotive Simulation Models (ASM)	For code generation of Simulink models	–	–	–	–	–
C/C++ compiler	• For compiling *real- time applications* for the DS1104, MicroAutoBox II, MicroAutoBox III, MicroLabBox, MicroLabBox II, the RapidPro Control Unit with MPC5554, and SCALEXIO systems • For compiling real-time applications for internal bypass	For compiling *real- time applications* for MicroAutoBox III, MicroLabBox II, and SCALEXIO systems	–	• For building an application for software-in-the-loop (SIL) or processor-in-the-loop (PIL) simulation • For building MATLAB MEX files	–	–	For building an application for software-in-the-loop (SIL)

Third-Party Software	RCP and HIL Software[1]	ConfigurationDesk	AutomationDesk	TargetLink	Model Compare	ControlDesk	VEOS
	targets used by the RTI Bypass Blockset ▪ For building MATLAB MEX files for the RTI CAN MultiMessage Blockset and RTI LIN MultiMessage Blockset. ▪ For using the Model and Sensor Interface Blockset in Simulink's Accelerator simulation mode (for building MATLAB MEX files)						
CAN interface driver	To use CAN interfaces from Vector Informatik GmbH	–	–	–	–	To use CAN interfaces from Kvaser or Vector Informatik GmbH	–
LIN interface driver	–	–	–	–	–	To use LIN interfaces from Kvaser or Vector Informatik GmbH	–
Xilinx software	To work with the FPGA Programming Blockset.	–	–	–	–	–	–
Browser software	To work with various dSPACE software products, such as the Browser instrument of ControlDesk or to view HTML reports generated with AutomationDesk						
Microsoft Office	To automate Microsoft Office applications, such as writing data to an Excel sheet with Python						
PDF Reader	To read PDF files, for example, of the dSPACE documentation						

[1] 'RCP and HIL software' is a generic term for a software package containing several dSPACE software products, for example, ASM, Model Interface Package for Simulink, RTI, and ModelDesk. These software products are installed in a common folder. As of dSPACE Release 2023-A, ConfigurationDesk is no longer part of the RCP and HIL software package. It is installed in its own folder.

Make sure, that the versions of the third-party software you intend to install are supported by the dSPACE software. For detailed version and compatibility information, see below. You also can refer to http://www.dspace.com/go/sw3rdparty.

Details

For details, refer to:
- Required MATLAB Releases on page 92
- Required C and C++ Compilers on page 93
- Required Browser Software for dSPACE Products on page 96
- Third-Party Software for ControlDesk on page 97
- Third-Party Software for the FPGA Programming Blockset on page 97
- Third-Party Software for SYNECT and SYNECT Server on page 98

Required MATLAB Releases

MATLAB®/Simulink®

Various dSPACE products require a MATLAB installation on the host PC.

> **Tip**
>
> For system requirements of MathWorks® software, refer to https://www.mathworks.com/support/sysreq.html.

MATLAB Release...	...Is Supported by dSPACE Release 2024-A						
	RCP and HIL 2024-A [1], [2]	ConfigurationDesk 2024-A [3]	AutomationDesk 2024-A [4]	TargetLink 2023-B	Model Compare 2023-B	dSPACE Python Extensions 2024-A [5]	XIL API .NET MAPort 2024-A
R2024a	✓ [6]	✓	✓	—	—	✓	✓
R2023b	✓ [6]	✓	✓	✓ [7]	✓	✓	✓
R2023a	✓ [6]	✓	✓	✓ [7]	✓	✓	✓
R2022b	✓	✓	✓	✓	✓	✓	✓
R2022a	—	—	—	✓	✓	—	—

[1] 'RCP and HIL software' is a generic term for a software package containing several dSPACE software products, for example, ASM, Model Interface Package for Simulink, RTI, and ModelDesk. These software products are installed in a common folder. As

2) of dSPACE Release 2023-A, ConfigurationDesk is no longer part of the RCP and HIL software package. It is installed in its own folder.

2) MATLAB/Simulink Student Suite is not supported by Automotive Simulation Models (ASM).

3) ConfigurationDesk requires Model Interface Package for Simulink (part of the RCP and HIL software package) for a connection to MATLAB and to work with Simulink models. Thus, the RCP and HIL software installation defines the MATLAB support for ConfigurationDesk.

4) The AutomationDesk MATLAB Access Library requires MATLAB.

5) matlablib2 of dSPACE Python Extensions requires MATLAB.

6) R2024a, R2023b, and R2023a are not supported by the FPGA Programming Blockset 24.1 – FPGA Interface. For a workaround, refer to http://www.dspace.com/faq?295.

7) Full support after installing the TargetLink 23.1 Patch 1. The patch is installed automatically when the TargetLink product set is installed within the setup of dSPACE Release 2024-A.

For up-to-date information on additional MATLAB releases that can be used in combination with dSPACE software, refer to https://www.dspace.com/go/MATLABCompatibility.

Required C and C++ Compilers

C/C++ compiler for dSPACE hardware systems

The C/C++ compiler you need depends on the dSPACE hardware you use.

Hardware	Required Compiler
SCALEXIO	Compiler for ConfigurationDesk Platforms (CFD Compiler 24.1)[1] based on GNU C/C++ Compiler Ver. 13.2
MicroAutoBox III	
MicroLabBox II	
MicroAutoBox II	Microtec PowerPC C/C++ Compiler Ver. 3.8.7[1]
MicroLabBox	QNX C/C++ Compiler for dSPACE Systems Version 3.1[1] based on GNU C/C++ Compiler Ver. 5.2
DS1104	Microtec PowerPC C/C++ Compiler Ver. 3.8.7[1]

[1] For compiling real-time applications.

Microtec PowerPC C/C++ Compiler   The compiler is installed automatically with the dSPACE software as encrypted archive. If you ordered the required license, you can decrypt the archive and use the compiler afterwards.

QNX C/C++ Compiler for dSPACE Systems   The QNX C/C++ Compiler for dSPACE Systems contains the required GNU C/C++ Compiler versions for the MicroLabBox as provided by QNX Software Systems. The required GNU C/C++ Compiler is installed automatically with the dSPACE software as encrypted archive. If you ordered the required license, you can decrypt the archive and use the compiler afterwards. The installation also includes libraries and header files. They reside in `%PROGRAMDATA%\dSPACE\<InstallationGUID of RCP and HIL>\Compiler\QNX650_520`. You can access them after installation and

decryption via: **Start - dSPACE RCP and HIL 2024-A - RCP and HIL 2024-A ProgramData Folder**.

> **Tip**
>
> - For detailed information on the GNU C/C++ Compiler, its features, incompatibilities, how to use it and how to report bugs, refer to the *GCC 5.2.0 Manual*. It is available at https://gcc.gnu.org/onlinedocs/gcc-5.2.0/gcc/.
> - Information on the QNX libraries are available at https://www.qnx.com/developers/docs/6.5.0SP1.update/#./com.qnx.doc.neutrino_lib_ref/about.html.

Compiler for ConfigurationDesk platforms   The compiler for ConfigurationDesk platforms contains the required compiler versions for MicroAutobox III, MicroLabBox II, and SCALEXIO. The required compiler is installed automatically with the dSPACE software. The installation also includes libraries and header files. They reside in `%CommonProgramFiles%\dSPACE\CFD Compiler <ProductVersion>`.

C/C++ compiler for building MEX files (non TargetLink)

If you want to use software products that require a MEX compiler, such as RTI CAN MultiMessage Blockset, or RTI LIN MultiMessage Blockset, you need to install a C/C++ compiler and configure it as a MEX compiler in MATLAB. dSPACE software supports the following C/C++ compiler to build MATLAB MEX files:

- Microsoft Visual Studio 2022: MATLAB R2022b, R2023a, R2023b, and R2024a
- MinGW compiler as supported by the related MATLAB release:
  - MinGW (GNU Compiler Collection (GCC 6.3.0)): MATLAB R2022b and R2023a.
  - MinGW (GNU Compiler Collection (GCC 8.1.0)): MATLAB R2023b and R2024a.

  MinGW compilers are available free of charge. Refer to the MathWorks documentation on how to obtain and install the compiler with MATLAB. For troubleshooting and limitations, refer to https://mathworks.com/help/matlab/matlab_external/compiling-c-mex-files-with-mingw.html.

C compiler for internal bypass targets used by the RTI Bypass Blockset

For compiling real-time applications for internal bypass targets, you need a C compiler depending on the microcontroller family used:

On-Target Module	Target-Specific C Compiler
ARM Cortex-R4/R5	- GNU compiler[1] - Green Hills compiler - Standard GNU compiler
Freescale MPC5xxx	- HighTec compiler - Green Hills compiler - Standard GNU compiler

On-Target Module	Target-Specific C Compiler
Infineon TriCore	▪ HighTec compiler ▪ Green Hills compiler
Renesas V850x	▪ HighTec compiler ▪ Green Hills compiler ▪ Standard GNU compiler

[1] The compiler is part of the RCP and HIL software installation and installed automatically.

C compiler for TargetLink

For compatibility reasons, TargetLink requires the installation of specific C compilers for building MATLAB MEX files and processor-in-the-loop (PIL) simulation applications:

▪ One of the following C compilers to build MATLAB MEX files and software-in-the-loop (SIL) simulation applications:

  ▪ Microsoft Visual Studio C++ (MSVC) product family (Community/Professional/Enterprise) 2017 (Ver. 15.0), 2019 (Ver. 16.0), or 2022 (Ver. 17.0) for MATLAB® R2022a, R2022b, R2023a, and R2023b.

  ▪ MinGW (GNU Compiler Collection (GCC 6.3.0)): MATLAB R2022a, R2022b, R2023a, and R2023b.

  ▪ MinGW (GNU Compiler Collection (GCC 8.1.0): MATLAB R2023a and R2023b.

  ▪ The LCC compiler cannot be used to build 64-bit MEX files, because the shipped LCC-Win64 compiler does not support building MEX files or S-functions.

  For a list of supported compilers, refer to https://www.mathworks.com/support/compilers.

▪ A target-specific compiler to build processor-in-the-loop (PIL) simulation applications:

  If your target is not listed here, refer to the TargetLink PIL Support website at http://www.dspace.com/go/tlpil.

Compatible Evaluation Boards for PIL Simulation in TargetLink	Compatible TargetLink Compilers
Emerge-Engineering ARM MEDKit	Keil 5.2
Lauterbach Simulator for ARM CortexM3[1]	
Freescale MPC5748GEVB	Green Hills 2023
	Wind River Diab 5.9
Freescale EVB9S12XEP100	Cosmic 4.8
	Metrowerks CodeWarrior 5.1
I+ME Promotion Package 166	Altium TASKING C166/ST10 Toolset 8.6
Infineon TriBoard TriCore 499	TASKING TASKING SmartCode 10
Infineon TriBoard TriCore 1766	Altium TASKING TriCore VX-Toolset 3.2
Infineon TriBoard TriCore 1766 20 MHz	
Infineon TriBoard TriCore 1767	
Infineon TriBoard TriCore 1796	

Compatible Evaluation Boards for PIL Simulation in TargetLink	Compatible TargetLink Compilers
Infineon TriBoard TriCore 275	Altium TASKING TriCore VX-Toolset 6.3
	HighTec GNU 4.9
Lauterbach Simulator for TriCore 275[1]	Altium TASKING TriCore VX-Toolset 4.2
Infineon EasyKit XC2287	Altium TASKING C166/ST10 VX-Toolset 3.0
Renesas YRH850F1L_R7F7010354	Green Hills 2023
Renesas EVB7058	Renesas 9.3
Renesas SH72513 System Development Kit	Renesas 9.4
Renesas AB_050_Fx4_70F4012	Green Hills 2021
Texas Instruments LAUNCHXL2570LC43	Texas Instruments Code Composer Studio 7.0

[1] The instruction set simulators are not supplied by dSPACE and have to be obtained from their respective providers.

For more information on the evaluation boards, microcontrollers, and compilers, refer to Evaluation Board Reference 📖 .

C/C++ compiler for VEOS

VEOS requires the installation of specific C/C++ compilers to build offline simulation applications for software-in-the-loop (SIL) testing:

- Microsoft Visual C/C++ Compiler as in Visual Studio 2019 and 2022. Enterprise, Professional, Build Tools, and Community editions of this version are also supported.
- C/C++ Compiler of the GNU Compiler Collection (GCC). The GCC 13 is shipped with the dSPACE software and installed automatically.
- C/C++ Cross Compiler for Linux of the GNU Compiler Collection (GCC). The GCC 10 is shipped with the dSPACE software and installed automatically.

Required Browser Software for dSPACE Products

Supported browsers

The dSPACE products of dSPACE Release 2024-A support the following browsers:

- Google Chrome released in the stable channel, starting with version 122.0, which dSPACE used for testing. The compatibility statement of Google applies. According to Google, later versions released in this channel will be compatible with all previous versions.
- Mozilla Firefox released in the ESR channel, starting with version 115.9.1, which dSPACE used for testing. The compatibility statement of Mozilla applies. According to Mozilla, later versions released in this channels will be compatible with all previous versions.
- Microsoft Edge released in the stable channel, starting with version 122.0, which dSPACE used for testing. The compatibility statement of Microsoft

applies. According to Microsoft, later versions released in this channel will be compatible with all previous versions.

Third-Party Software for ControlDesk

Driver software

Driver software for CAN/LIN interfaces   To use CAN/LIN interfaces with ControlDesk, you need the appropriate driver software versions:

CAN/LIN Interface[1), 2)]	Required Third-Party Software
Interfaces from Vector Informatik GmbH	To use CAN/LIN interfaces from Vector Informatik GmbH with ControlDesk, you need the appropriate API and driver: ▪ API: XL Driver Library 9.7.26 (or later) is required. The ControlDesk installation provides the Vector XL Driver Library 9.7.26 ▪ Driver: Vector Driver Ver. 9.8 or later. You need a driver version that is compatible with the API you use. Download the driver from https://www.vector.com.
Interfaces from Kvaser	To use Kvaser CAN/LIN interfaces with ControlDesk, you need the appropriate Kvaser drivers: ▪ Kvaser CAN: Ver. 5.17 or later ▪ Kvaser LIN: Ver. 5.17 or later Download them from https://www.kvaser.com.

[1)]   Refer to Supported CAN Interfaces (ControlDesk Platform Management 📖).
[2)]   Refer to Supported LIN Interfaces (ControlDesk Platform Management 📖).

Third-Party Software for the FPGA Programming Blockset

Required third-party software for FPGA Programming Blockset

Working with the FPGA Programming Blockset requires the following products of the AMD® Vivado® Design Suite version 2023.2:

▪ AMD Vivado for designing, simulating, and building the FPGA application.

▪ AMD Vitis Model Composer (includes the former Xilinx System Generator for DSP Blockset (XSG)) for modeling FPGA applications with Simulink.

As of Vivado 2021.1 the Xilinx System Generator for DSP is part of the Vitis Model Composer. This is the unified Xilinx add-on for MATLAB and Simulink. For licensing issues related to this change, refer to https://xilinx.com/support/answers/76039.html.

> **Note**
>
> For a list of supported operating systems, refer to Operating System on page 84. However, there is the following note:
> ▪ AMD Vivado does not officially support the listed Windows Server operating systems-

Third-Party Software for SYNECT and SYNECT Server

Third-party software for SYNECT

The following table lists compatible third-party software for SYNECT:

Product	Compatible Versions	Purpose
Microsoft Office	2016, 2019, 365	To import items such as test cases from Excel files.
MATLAB	Refer to MATLAB Compatibility of Model Management (SYNECT Guide 📖).	▪ To open and execute Simulink models. ▪ To import and export Simulink model files.
IronPython	2.7 (64-bit)	To program server scripts.
Apache™ Subversion®	1.7 … 1.14	To connect SYNECT with a configuration management (CM) system for exchanging files, such as Simulink model files or AutomationDesk project files.
PTC® Integrity	10	
Azure DevOps Server	2019	

Supported databases for SYNECT server

SYNECT server supports the following databases:
- Microsoft SQL Server (recommended for production servers):
  - SQL Server 2017
  - SQL Server 2019
  - SQL Server 2022
- SQL Server Express (not recommended for production servers):
  - Microsoft SQL Server 2022 Express: This version is provided by the dSPACE Setup and can be used for development servers.