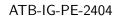


Installation Guide

Atelier-B 24.04 (Professional and Community Editions)





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1 Introduction

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This guide provides installation instructions for Atelier B 24.04, available from www.atelierb.eu.

Atelier B and bbatch are integrated development environements (IDE) for the B method and Event-B. Atelier B provides a graphical user interface (GUI) and bbatch is a command-line interface (CLI).

This guide provides installation guidelines for Atelier B and bbatch.

There is one chapter for each supported platform: Linux, macOS and Windows. Projects and workspaces are a source of confusion for new users, a chapter is dedicated to them. Finally a lexicon is provided to help the reader to understand the terminology used in this guide.

The guidelines are the same whether the Professional Edition or the Community Edition is installed.

2 Linux Installation Guide

2.1 Installation of the Linux Debian 64 package

These instructions correspond to a successful install in a bare Debian 12.5 Slim assumes that the package "atelierb-full-24.04-debian12.deb" has been downloaded and is present in the current directory.

Open a terminal and issue the following command:

```
1 apt-get update
2 apt install --yes ./atelierb-full-24.04-debian12.deb
```

This should download and install all dependencies that are not already present, then install Atelier B itself.

2.2 Installation of the Linux RPM package

These instructions correspond to a successful install on a bare Fedora 39 system and assumes that the package "atelierb-full-24.04-fedora-39.rpm" has been downloaded and is present in the current directory.

Open a terminal and issue the following command:

```
1 dnf -y install atelierb-full-24.04-fedora-39.rpm
```

This should download and install all dependencies that are not already present, then install Atelier B itself.



2.3 Running the software

The software is installed in the following directory:

1 /opt/atelierb-full-24.04

To open Atelier B GUI, issue the following command:

1 /opt/atelierb-full-24.04/bin/startAB

Atelier B is now open

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To open bbatch CLI, issue the following command:

1 /opt/atelierb-full-24.04/bin/startBB

3 macOS Installation Guide



The bbatch CLI is not available on macOS for this version of the software.

These instructions correspond to a successful install in a macOS 14.0 (Sonoma) environment. They should be applicable to other versions of macOS.



Control-click on the installer file to start the installation process (double-clicking will not work as the publisher is not white-listed in this environment).

atelierb-free-4.7.1-macosx.dmg

This displays the license agreement dialog.

	atelierb-free-4.7.1-macosx.dmg
You agree to the License Agreement terms when you click the "Agree" button.	 PREAMBLE CLEARSY is the owner of all intellectual property rights necessary to grant END-USER a license to Use the Software. Following Software presentation and demonstration by CLEARSY, END-USER, fully aware of Software functionalities and main characteristics and having assessed its requirements extremely precisely, to determine whether they are reconcilable with the Software and to make sure that it has the special skills needed to Use it, is willing to subscribe a Software license and CLEARSY accepts to grant it such a license according to the following conditions. END-USER acknowledges that CLEARSY has provided it with all information necessary to enable it to assess whether the Software meets its requirements and to take all necessary precautions with respect to its implementation and Use. ARTICLE 1 - DEFINITIONS 1.1 - Equipment Means the computer hardware, consisting of a computer or central processing unit and its peripherals and accessories, intended for the Use of the Software. 1.2 - Software Means the complete and documented set of programs intended for the same application or function, developed by CLEARSY and/or on which CLEARSY owns intellectual property rights necessary for this license.
	Print Save Disagree Agree

Read carefully and click on "Agree" to proceed.

A finder window is opened, it contains a shortcut to the application folder and the Atelier B icon.





atelierb-free-4.7.1



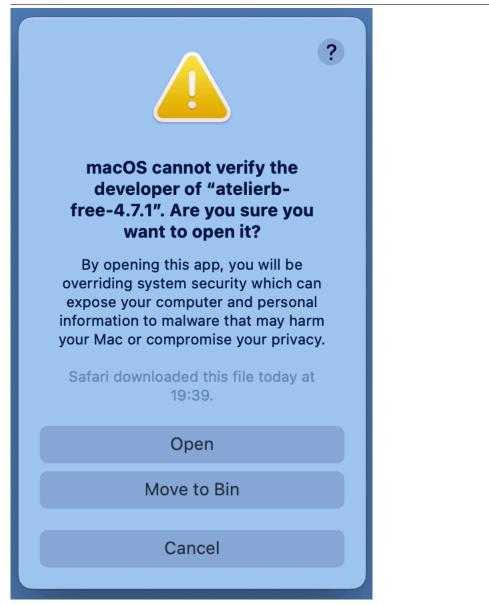
Drag the Atelier B icon to drop it into the "Applications" folder.

Et voilà! Atelier B is now installed in the "Applications" folder.



The first time Atelier B is opened, use the control click combo, as otherwise macOS will deny the execution right to the application. macOS warns you that it does not know the software developer. Click on "Open" to proceed.





Atelier B is now open.



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4 Windows Installation Guide

These instructions correspond to a successful install in a Windows 10 environment. They should be applicable to other versions of Windows.

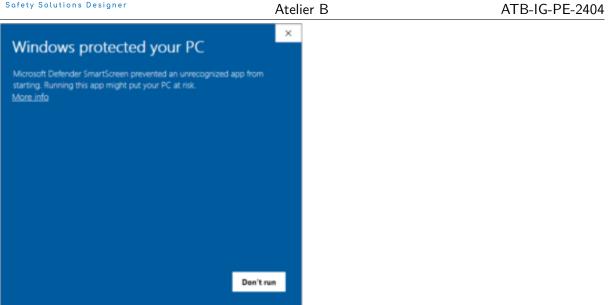
Double-click on the installer file to start the installation process.

🍘 atelierb-full-24.04.exe

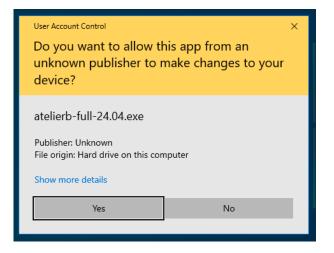
2.11

Windows Defender Smartscreen may warn you that it does not know recognize this installer. Click on "More info" and then on "Run anyway" to proceed.





Windows User Access Control warns you that it does not know the software publisher. Click on "Yes" to proceed.



This opens the installer setup dialog.



🌍 Atelier B Professional Editio	n 24. 0 4 Setup	_		×
	Welcome to Atelier B L Edition 24.04 Setup Setup will guide you through the inst Professional Edition 24.04. It is recommended that you close all before starting Setup. This will make relevant system files without having computer. Click Next to continue.	allation of 4 other applic it possible I	Atelier B cations to update	
	Ne	ext >	Cance	el 🛛

Click on "Next" to proceed. The license agreement dialog is displayed.

🌍 Atelier B Professional Edition 24.04 Setup	_		Х					
License Agreement								
Please review the license terms before insta Professional Edition 24.04.	illing Ate	elier B						
Press Page Down to see the rest of the agreement.								
FREAMBLE			^					
CLEARSY is the owner of all infellectual property rights necessary to grant END-USEF Software.	CLEARSY is the owner of all intellectual property rights necessary to grant END-USER a license to Use the Software.							
Following Software presentation and demonstration by CLEARSY, END-USER, fully functionalities and main characteristics and having assessed its requirements extremely pr whether they are reconcilable with the Software and to make sure that it has the special ski is willing to be granted a Software license and CLEARSY accepts to grant it such a lice following conditions. END-USER acknowledges that CLEARSY has provided it with all information necessary to whether the Software meets its requirements and to take all necessary precautions is implementation and Use.	ecisely, to ills needeo nse accor to enable i) determine d to Use it, ding to the it to assess						
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If you accept the terms of the agreement, click I Agree to continue. You agreement to install Atelier B Professional Edition 24.04. Nullsoft Install System v10-Apr-2024.cvs	must acc	cept the						
< Back I Agree	е	Cance	!					

Click on "I Agree" to proceed (otherwise do not use the software). The installation folder dialog is displayed.



Safety Solutions Designer	Atelier B			A	TB-IG-PE-2404
🌍 Atelier B Professional Ec	lition 24. 04 Setup	_		×	
	Choose Install Location Choose the folder in which to insta 24.04.	ll Atelier B Profe	ssional Edi	ition	
	Professional Edition 24.04 in the followi se and select another folder. Click Ne:		itall in a		
Destination Folder	er B Professional Edition 24.04	Brow	ise		
Space required: 258.2 MB Space available: 2.4 GB Nullsoft Install System v10-Ap		Next >	Canc	el	

Choose a directory with full access rights (in this setup, we stick with the default location). Click on "Next" to proceed. The startup menu folder dialog is displayed.

This document is the property of CLEARSY.



Safety Solutions Designer	Atelier B			A
🌍 Atelier B Professional Edition	n 24. 0 4 Setup	_		×
Cł	noose Start Menu Folder			
	hoose a Start Menu folder for the 4.04 shortcuts.	Atelier B Profe	essional Edit	ion
Select the Start Menu folder in can also enter a name to create Atelier B Professional Edition 2		e program's sho	ortcuts. You	
Accessibility Accessories Administrative Tools Atelier B full 4.7.2 Atelier B Professional Edition 2 Atelier B Professional Edition 2 CMake doxygen Git Graphviz Maintenance				*
Do not create shortcuts Nullsoft Install System v10-Apr-20	124 cus			
Hansone Install System (10-Apr-20	< Back	Install	Cance	el l

You may safely leave the default value. Click on "Install" to proceed. A progress dialog appears. When the installation is finished, the following dialog is displayed.

🌀 Atelier B Professional Edition 24.04 Setup — 🗆 🖂				\times	
	Completing Edition 24.0 Atelier B Profession- your computer. Click Finish to close	14 Setup al Edition 24.04			
		< <u>B</u> ack	<u>F</u> inish	Cance	el

Click on "Finish": installation is complete and the software is ready to use. The startup menu folder now contains two entries for Atelier B: one for the GUI and one for the CLI.



CL

Atelier B ATB-IG-PE-2404 Atelier B Professional Edition 24.04 ^ Ktelier B Batch interface Professiona... 8 Atelier B Professional Edition 24.04 궁 Uninstall Ľ \sim Calculator Calendar <u>ت</u> Camera ↺

If you double-click on the "Atelier B Professional Edition 24.04" entry, the GUI is started.

🤞 Atelier B								_		×
<u>A</u> telier B <u>V</u> iew	<u>W</u> orkspace <u>P</u> roj	ect <u>C</u> ompon	ient <u>H</u> elp							
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Project	Component	Action	Status	Messages	Message	Location	Component			
<				>						
									No error	's

If you double-click on the "Atelier B Batch interface Professional Edition 24.04" entry, the CLI is started.



Sofety Solutions Designer Atelier B ATB-IG-PE-2404

You may encounter errors due to access controls on the directories that the tools need to access. If this is the case, read through carefully the chapter on projects and workspaces.

5 Projects and Workspaces



When you install and use Atelier B and bbatch, you must be make sure to have read/write access to worskpace(s) and project(s) directories.

In both Atelier B and bbatch, developments are organized in so-called **B projects**. Each B project has a data base directory (bdp) and a language directory (lang).

- The data base directory (bdp) contains all the internal artifacts necessary for Atelier B and bbatch to work.
- The language directory (lang) contains the files in a programming language, such as C, that are produced from the B components of the project.

The B project is made up of a number of source files. Source files are either B / Event-B components. The list of the source files of a B project is stored in the bdp in an XML file with the extension db.

For each B component, there is a corresponding PMM file with the same name and the extension pmm, containing proof rules and proof tactics for this component. The PMM file shall be stored in the same directory as the corresponding source file.



It is good practice to store the source files of a B project in a single directory.

Atelier B lets the user have several **workspaces**, each workspace being a collection of projects. In practice, a workspace is associated to a project data base directory (bdb), where each file ending



with the desc extension corresponds to a project. Actually, the contents of the desc file is only the path to the bdp and lang directories of the project.

bbatch does not have the concept of workspace. It is the user's responsibility to provide the path to the bdb of some workspace.

6 Troubleshooting

A fresh install creates an empty workspace named "local" and associates it with a directory (bdb) located in the user's home directory.

To know what is the bdb of a workspace, right-click on the workspace in Atelier B and select "Properties". This opens the workspace properties dialog.

Properties for worksp	ace local		?	×
bbatch krt comm	nands resourc	file		
Workspace name		local		
Atelier B directory		C:\Program Files (x86)\Atelier B free 4.7.1\		
Workspace database dim	ectory	C:\Users\David Deharbe\AtelierB_Data\AtelierB_free_4.7.1\	press\bdb	
🗹 Connect automatical	ly at startup			
Start in a terminal			Configuration Del	cails
			OK Can	icel

The dialog has four tabs, and initially presented with the "bbatch" tab. There, the following information is displayed:

- the name of the workspace (in this case, "local"),
- the path of the installation of Atelier B,
- the path to the bdb of the workspace (namely, the workspace database directory),
- a checkbox to indicate whether the workspace is the default workspace.

It is currently not possible to change the path to the bdb of a workspace from the GUI. You may change the path to the bdb of a workspace by editing directly the settings of the tool.



- On Linux: The settings are stored in the .config directory as plain text files and may be edited with any text editor.
- On macOS: The settings are stored in file "~/Library/Preferences/com.clearsy.AtelierB free 24.04.plist" and may be edited with the Xcode application.
- On Windows: the settings are stored in the registry and may be viewed and edited with RegEdit.
 If you cannot change the path to the bdb of a workspace, you may create a new workspace (menu "Atelier B | New | Workspace").

7 Lexicon

bdb See Workspace.

bdp The **bdp** of a project is a directory that stores all the internal files necessary for the management of the project.

lang The **bdp** of a project is a directory that stores all the files resulting from the translation to a programming language of B components.

pmm A file containing proof rules and proof tactics for a B component.

project A **project** is a collection of B components and PMM files. It is referenced from a workspace thanks to a desc file. It contains a data base directory (bdp) and a language directory (lang).

workspace A **workspace** is a collection of projects. It is a directory containing a collection of desc files. Atelier B stores the workspaces in its settings (in registry on Windows, under the \$HOME/.config directory on Linux and macOS).