

Blimp Installation Guide

Blimp is a standalone software package for Bayesian multilevel structural equation modeling and imputation. It runs as a command-line application across all major operating systems and may also be accessed through **Blimp Studio**, a graphical interface for interactive use, or **rblimp**, an R interface for Blimp.

1. System Requirements

| Platform | Supported Versions | Notes |
|----------|-------------------------------|--|
| macOS | macOS 11.6 (Big Sur) or later | Intel and Apple Silicon supported |
| Windows | Windows 10 or later | Requires admin privileges for installation |
| Linux | Ubuntu 20.04+ or RHEL 8+ | Static or dynamic binaries available |

***Tip:** For Linux users, if your system is older or managed (e.g., a cluster), prefer the **static** build to avoid library dependency issues.*

2. Downloading Blimp and Blimp Studio

Blimp binaries and installers are hosted on the official website:

<https://www.appliedmissingdata.com/blimp>

Blimp Studio (Optional GUI for Mac or Windows)

Blimp Studio is a companion graphical interface to Blimp that provides:

- Model editing with syntax highlighting
- Automatic update notifications

- Project organization tools

Available downloads:

- **macOS installer** (.dmg)
- **Windows installer** (.exe)
- **Linux binaries:**
 - blimp_binary.tar.gz – Ubuntu Static
 - blimp_binary_dynlibs.tar.gz – Ubuntu Dynamic
 - blimp_binary-RHEL8.tar.gz – RHEL 8 Static
 - blimp_binary_dynlibs-RHEL8.tar.gz – RHEL 8 Dynamic

Offline installers that do not require internet connection are also available for macOS and Windows.

3. Installation Instructions

- Note: Blimp Installers version number differs from Blimp's computational engine version number.*

macOS

1. Download the .dmg installer for macOS 11.6+ from the Blimp website.
2. Open the .dmg and double-click the installer, follow the installation prompts.
3. Once installed, Blimp and Blimp Studio will be available in /Applications/Blimp/ by default.

Windows

1. Download the .exe installer for Windows 10+.
2. Right-click and choose **Run as Administrator**, and follow the installation prompts.
3. Once installed, Blimp and Blimp studio will be available in C:\Program Files\Blimp by default.

Linux (Ubuntu/RHEL)

1. Download the appropriate archive for your distribution. Note Blimp Studio is not available for Linux.
2. Extract the tarball: `bash`
`tar -xzf blimp_binary.tar.gz`
3. Move the executable to a directory in your `$PATH`:
4. Run Blimp directly from the terminal: `bash`
`blimp mymodel.imp`

Static vs. Dynamic Linux Builds

| Type | Description | Recommended for |
|----------------|---|---|
| Static | Includes all dependencies; larger download size | Clusters, older distros, or restricted systems |
| Dynamic | Relies on system libraries; smaller file size | Modern desktop systems with up-to-date runtimes |

If you encounter runtime errors such as `missing libstdc++` or `glibc`, switch to the **static** version.

Using Blimp on Clusters or Headless Systems

Blimp can be executed without a GUI, making it suitable for:

- High-Performance Computing (HPC) clusters
- Batch job submissions
- Command-line workflows

You can specify data, seeds, or output files directly: `bash`

```
blimp myscript.imp --data=data.csv --output=results.txt
```

For full argument details, see the *Running From Terminal* section of the [User Guide](#).

5. Known Issues and Troubleshooting

- **Windows antivirus conflicts:**

Some antivirus tools may block the installer or executable. Run the installer as Administrator or use the offline installer if network restrictions exist.

- **macOS security warnings:**

If macOS prevents launching Blimp, go to *System Settings* → *Security & Privacy* and click *Allow Anyway*.

6. Installing `rblimp` (R Interface)

The **`rblimp`** package provides an R interface to the Blimp engine.

Installation (current version)

```
install.packages("remotes")
remotes::install_github("blimp-stats/rblimp")
```

Ensure that Blimp itself is installed and available in your system before loading `rblimp`.

Updating

- Update Blimp by launching the application (it auto-checks for new releases).
- Update `rblimp` in R: `r`

```
remotes::update_packages("rblimp")
```

Check your version with: `r`

```
packageVersion("rblimp")
```

Once `rblimp` is available on CRAN, these instructions will be updated accordingly.

8. Support and Resources

- **Official site:** <https://www.appliedmissingdata.com/blimp>
- **Documentation:** Included in the *User Guide* available above
- **Support:** Contact information available on the website