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