

# Setting Up a **pbdR** Environment

Installing MPI, R, and **pbdR**

Version 1.0

Prepared by the pbdR Core Team:

Drew Schmidt

*Remote Data Analysis and Visualization Center,  
University of Tennessee, Knoxville*

Wei-Chen Chen

*Computer Science and Mathematics Division,  
Oak Ridge National Laboratory*

Pragneskumar Patel

*Remote Data Analysis and Visualization Center,  
University of Tennessee, Knoxville*

George Ostrouchov

*Computer Science and Mathematics Division,  
Oak Ridge National Laboratory*

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This publication was typeset using L<sup>A</sup>T<sub>E</sub>X.

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## 1 Introduction

In this guide, we will detail the necessary steps for how to install an MPI library and the pbdR packages. In decreasing order of difficulty, this involves

1. Installing R (and Rtools for Windows)
2. Installing an MPI library
3. Installing pbdR

Items 2 and 3 are interchangeable, and so if you already have R (and Rtools if on Windows) and/or an MPI library installed, then merely skip this step(s); there is no need to reinstall either.

## 2 Linux and FreeBSD

Before starting, make sure you have

### 2.1 Installing R

If your distribution is Debian-derived, including Debian, Ubuntu, and Mint:

Installing OpenMPI on Debian Linux

```
apt-get install r-base-dev
```

If your distribution is “Redhat-ish”, including Fedora and CentOS:

Installing OpenMPI on Fedora Linux

```
yum install R-devel
```

If your distribution is OpenSUSE:

Installing OpenMPI on OpenSUSE Linux

```
zypper install R-patched-devel
```

If you are using FreeBSD:

Installing OpenMPI on FreeBSD

```
cd /usr/ports/math/R && make install clean
```

### 2.2 Installing MPI

For these systems, we recommend using OpenMPI. To install OpenMPI

If your distribution is Debian-derived, including Debian, Ubuntu, and Mint:

Installing OpenMPI on Debian Linux

```
apt-get install openmpi-bin libopenmpi-dev
```

If your distribution is “Redhat-ish”, including Fedora and CentOS:

## Installing OpenMPI on Fedora Linux

```
yum install openmpi openmpi-devel
```

If your distribution is OpenSUSE:

## Installing OpenMPI on OpenSUSE Linux

```
zypper install openmpi-devel lam-devel
```

If you are using FreeBSD:

## Installing OpenMPI on FreeBSD

```
cd /usr/ports/net/openmpi && make install clean
```

You can test the installation of OpenMPI via the command:

## Shell Command

```
mpiexec - np 2 hostname
```

## 2.3 Installing pbdR

Installing pbdR should be fairly straight forward.