

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*

© 2013 pbdR Core Team. All rights reserved.

Permission is granted to make and distribute verbatim copies of this guide and its source provided the copyright notice and this permission notice are preserved on all copies.

This publication was typeset using L^AT_EX.

Contents

1	Introduction	1
2	Windows	1
2.1	R	1
2.2	Rtools	4
3	Mac OS X	7
3.1	Installing MPI	7
3.2	Installing pbdR	7
4	Linux and FreeBSD	7
4.1	Installing R	7
4.2	Installing MPI	8
4.3	Installing pbdR	8

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.

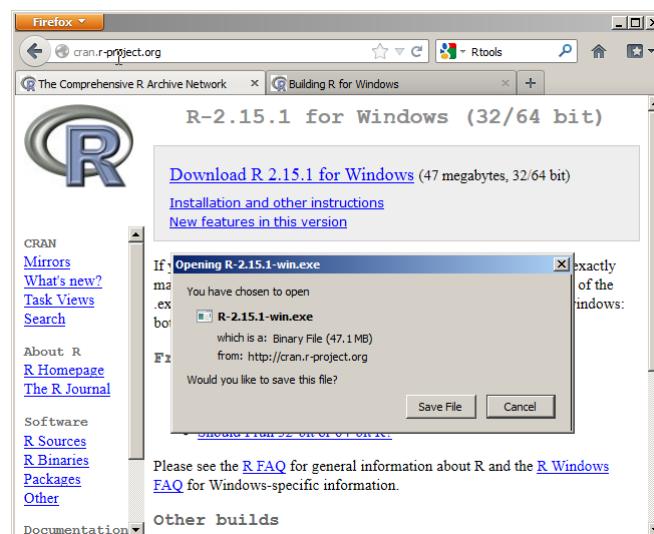
2 Windows

Officially, the pbdR team does not support gaming consoles. However, it is possible to install pbdR packages on Windows.

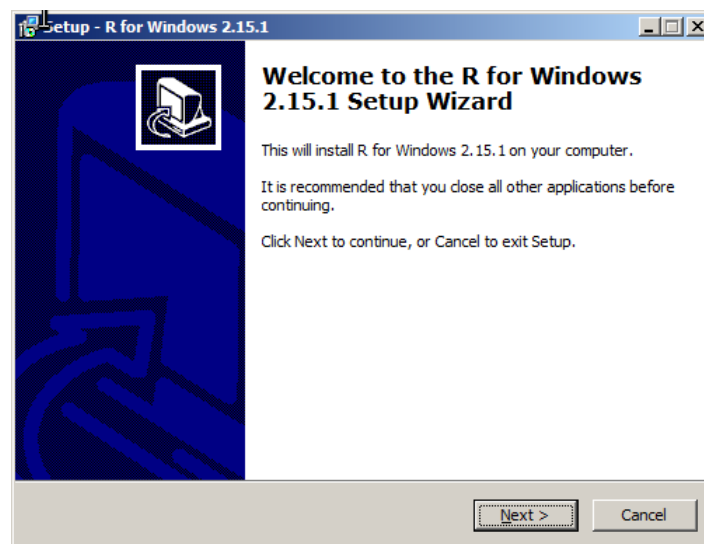
The instructions and screenshots for this document are for version 2.15.1 of R, but later versions should be very similar, if not identical.

2.1 R

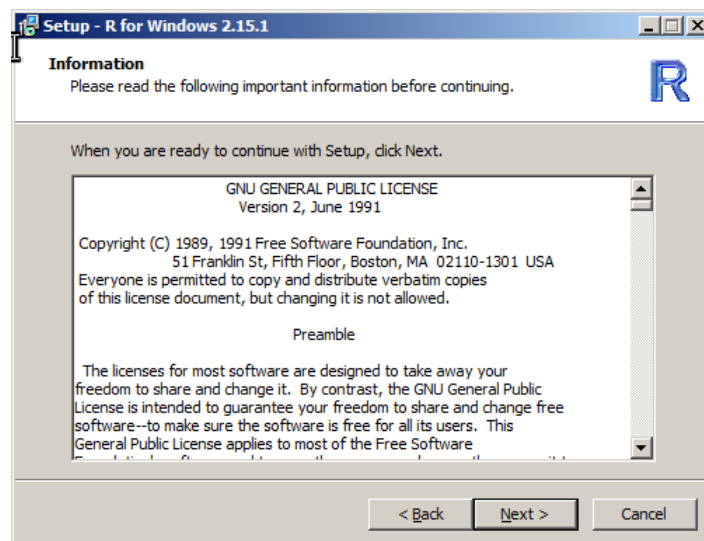
1. Download R: <http://cran.r-project.org/bin/windows/base/>



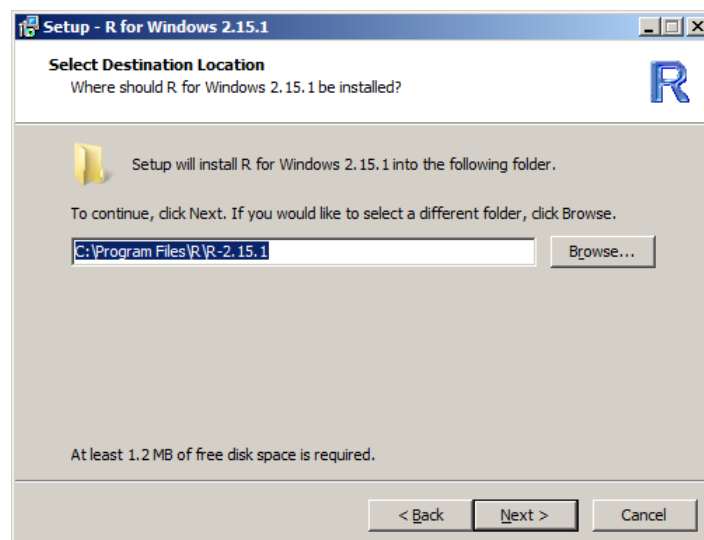
2. Open the saved file from 1 above to begin the installation. At the first setup screen, click 'Next' to continue.



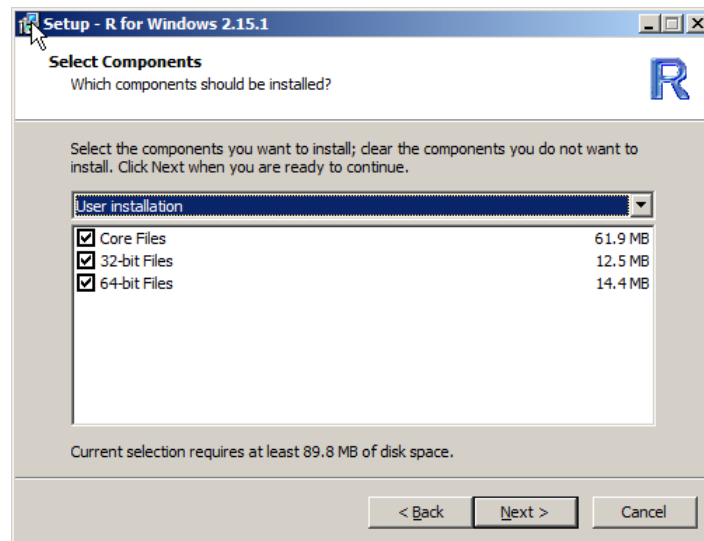
3. When prompted with the license, click 'Next' to continue.



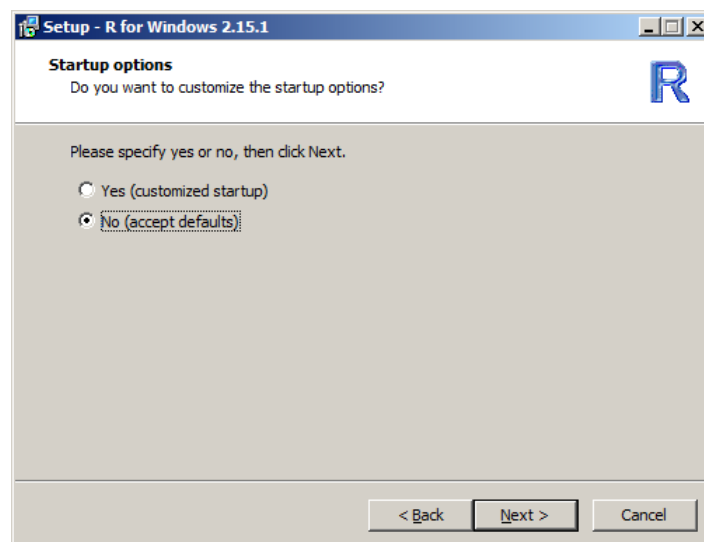
4. When prompted for the location to install R, we strongly encourage you to use the default. When you have made your decision, click 'Next'.



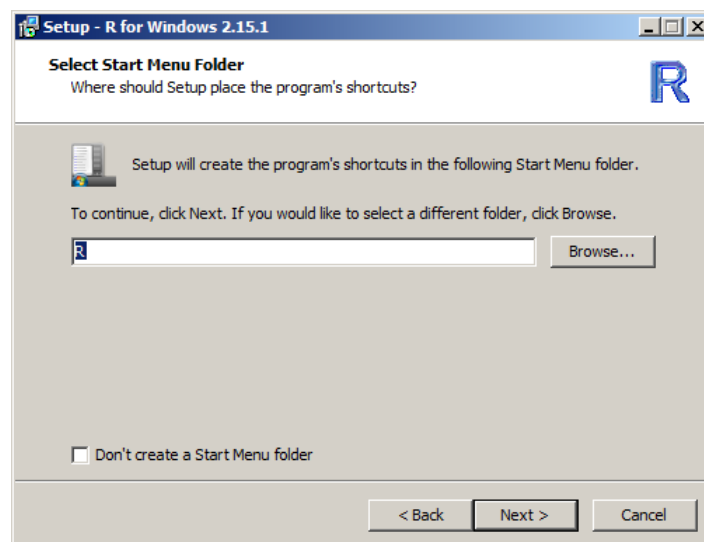
5. When prompted with the components to install, you should select a 'User installation'. Then click 'Next'.



6. When prompted with the option to alter the startup options, we suggest selecting No (accept defaults). When you have made your decision, click 'Next'.

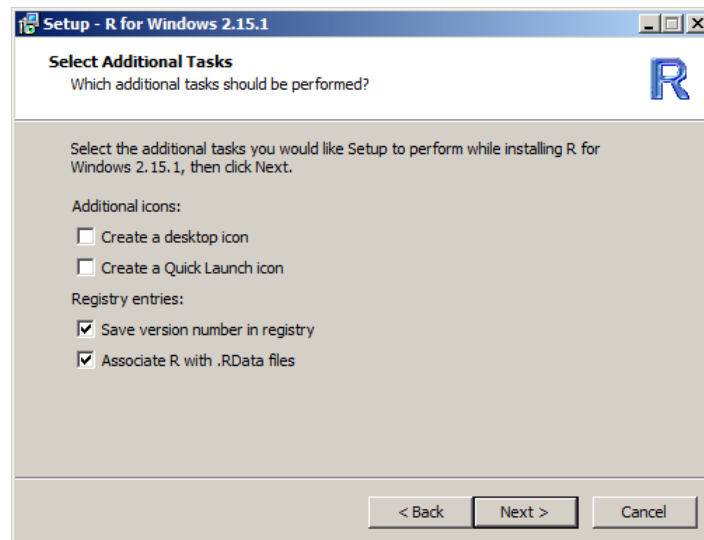


7. When prompted with the start menu folder options, make your choice and then click 'Next'.

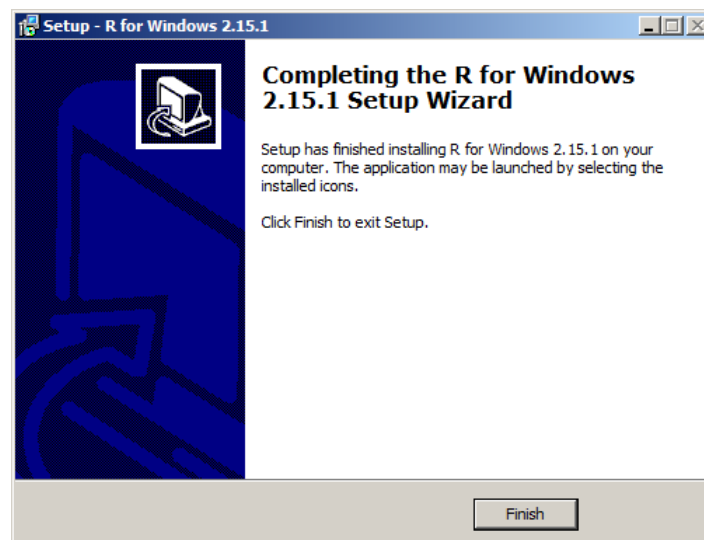


8. When prompted with the additional tasks options, we suggest making sure that **Save version number in registry** and **Associate R with .RData files** are both **checked**. When you have

made your decisions, click 'Next'.

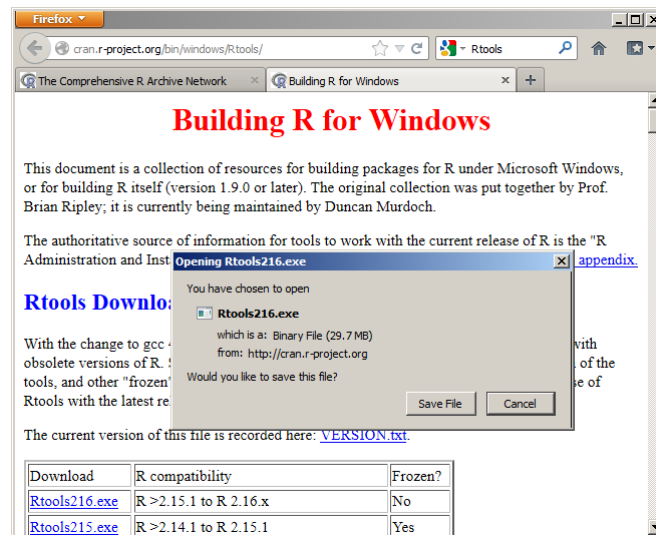


9. To complete the R installation, select 'Finish'.

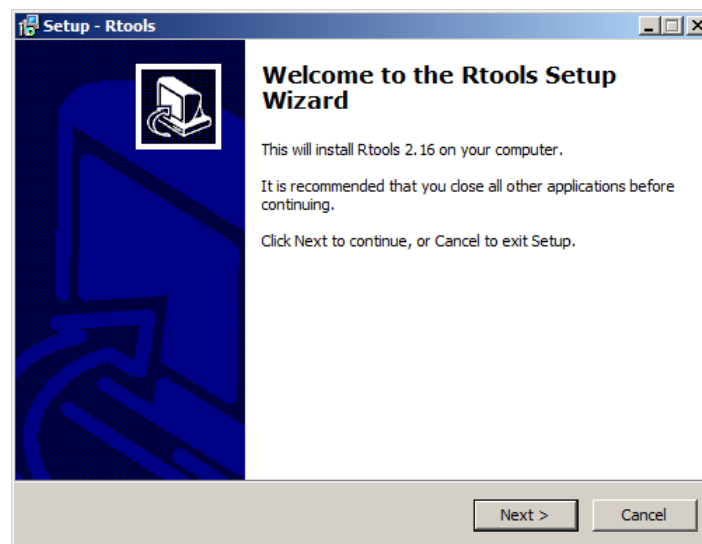


2.2 Rtools

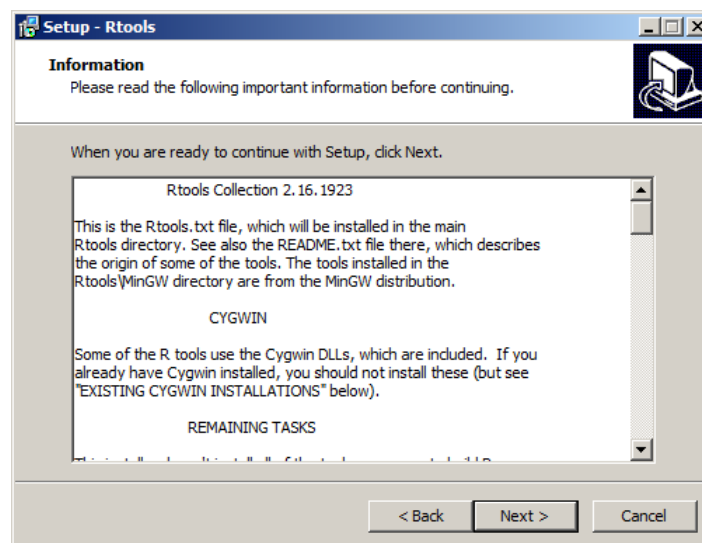
1. Download Rtools: <http://cran.r-project.org/bin/windows/base/>



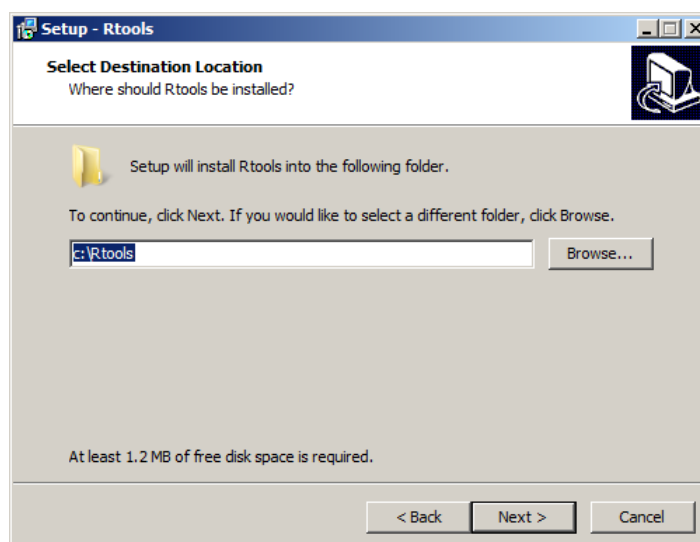
- Open the saved file from 1 above to begin the installation. At the first setup screen, click 'Next' to continue.



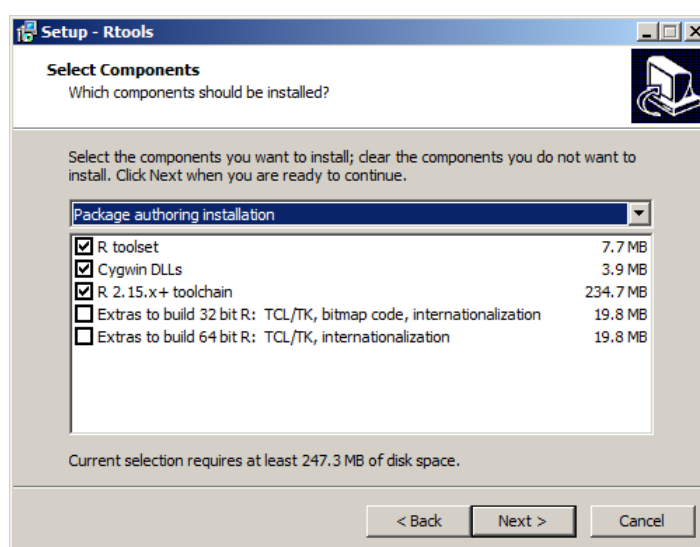
- When prompted with the license, click 'Next' to continue.



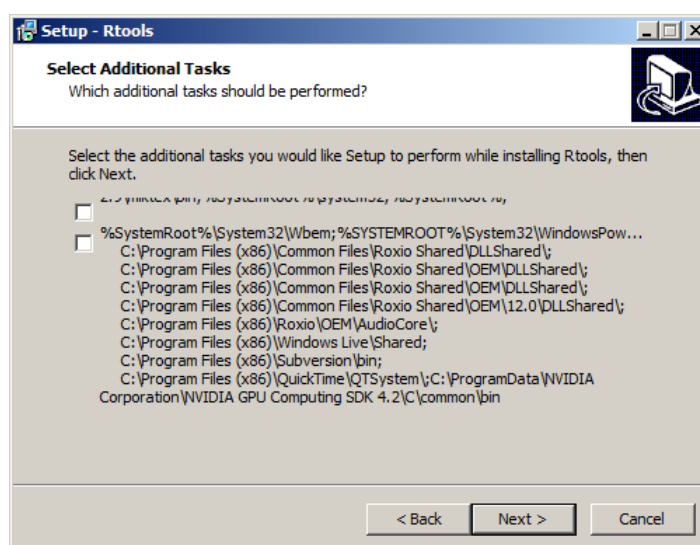
- When prompted for the location to install R, we strongly encourage you to use the default. When you have made your decision, click 'Next'.



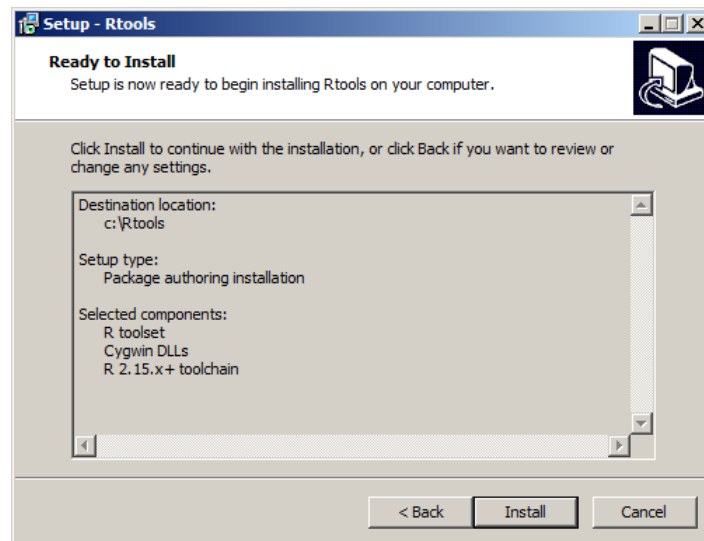
5. When prompted with the components to install, you should select a 'User installation'. Then click 'Next'.



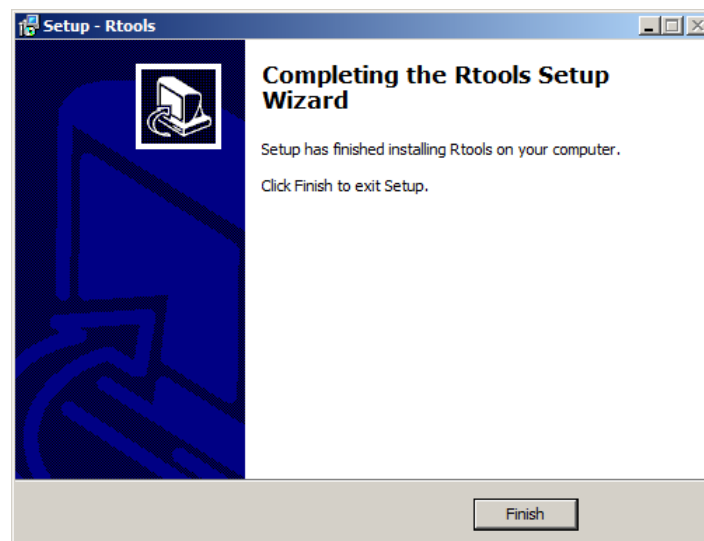
6. When prompted with the option to alter the startup options, we suggest selecting No (accept defaults). When you have made your decision, click 'Next'.



7. When prompted with the start menu folder options, make your choice and then click 'Next'.



8. To complete the Rtools installation, select 'Finish'.



3 Mac OS X

Before starting, make sure you have installed XCode. You can find this in the Mac App Store.

3.1 Installing MPI

3.2 Installing pbdR

4 Linux and FreeBSD

Before starting, make sure you have

4.1 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
```

4.2 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
```

4.3 Installing pbdR

Installing pbdR should be fairly straight forward.