

WBSA Prerequisites

Before installing WBSA PBS or single machine version package (we will call PBS package or single machine package in the whole document), you will need to install some prerequisites on your system. This document describes the prerequisites (including software and library) for Linux systems.

The following prerequisites are needed to run WBSA package on Linux systems:

1. software

GCC

Perl 5.8.8 or higher

R 2.11 or higher

JDK 1.6

MySQL 5.0 or higher

Those who want to run WGBS and RRBS modules should install these two softwares.

BWA 0.6.1

Samtools 0.1.8

2. Install software on Linux system

This section describes the install procedure as the non-root user.

1) Perl

```
tar -zxf perl-5.8.8.tar.gz
cd perl-5.8.8
./configure --prefix=install_dir
make
make install
```

During the install procedure, may be you will encounter some errors, you can check the following urls to get some suggestions.

<http://www.nntp.perl.org/group/perl.perl5.porters/2008/02/msg133863.html>

<http://www.nntp.perl.org/group/perl.perl5.porters/2006/06/msg113566.html>

https://bugzilla.kernel.org/show_bug.cgi?id=10791

2) R

```
tar -zxf R-2.15.3.tar.gz
cd R-2.15.3
```

```
./configure --prefix=install_dir  
make  
make install
```

3) MySQL

```
tar -zxvf mysql-5.1.30.tar.gz  
cd mysql-5.1.30  
./configure --prefix=install_dir  
make  
make install
```

Set mysql configuration file

```
cp support-files/my-medium.cnf ./etc/my.cnf
```

Start mysql

```
./bin/mysqld_safe &
```

Stop mysql

```
./bin/mysqladmin shutdown
```

4) BWA

```
tar -jxvf bwa-0.6.1.tar.bz2  
make
```

5) Samtools

```
tar -jxvf samtools-0.1.18.tar.bz2  
make
```

3. Library

Perl modules

GD::Graph

GD::Text

Text::NSP

RSPerl

The following modules are provided for users in our website, users can download them from <http://wbsa.big.ac.cn/download/download.jsp> and use them directly after uncompressed and the uncompressed directory need add to the system

environment.

Corona_Lite_Plus.tar.gz (only needed for PBS package)

GO.tar.gz

4. System Environment Configuration

After all the prerequisites mentioned before have been installed, you need to configure your system environment to ensure the package run successfully.

This section describes the whole configuration procedure.

Enter your home directory on Linux sytem

vi .bash_profile

```
PATH=samtools install_dir:R install_dir/bin:mysql install_dir/bin:$PATH:$HOME/bin
PERL5LIB= perl install_dir/ lib/perl5: \
    perl install_dir/lib/perl5/x86_64-linux-thread-multi: \
    GO uncompressed_dir: \
    $PERL5LIB

LD_LIBRARY_PATH=R install_dir/lib: \
    R install_dir/lib64:R install_dir/lib64/R/lib:$ LD_LIBRARY_PATH
MYSQL_HOME=mysql install_dir/etc
CORONAROOT= Corona_Lite_Plus uncompressed_dir

export PATH
export PERL5LIB
export LD_LIBRARY_PATH
export MYSQL_HOME
export CORONAROOT
source $CORONAROOT/etc/profile.d/corona.sh
```

Save this file and run the following command

source .bash_profile