IBM SPSS Modeler - Essentials for R: Installation Instructions

IBM

Contents

IBM SPSS Modeler - Essentials for R: Installation Instructions

Overview

This document contains the instructions for installing IBM® SPSS® Modeler - Essentials for R.

IBM SPSS Modeler - Essentials for R provides you with tools you need to start using custom R scripts for model building and scoring within the R nodes in IBM SPSS Modeler. It includes the IBM SPSS Modeler - Integration Plug-in for R for IBM SPSS Modeler 17.1.

To use the R nodes in IBM SPSS Modeler you must have the following components installed on the local machine:
- IBM SPSS Modeler 17.1. See the topic "Install the IBM SPSS Modeler application" for more information.
- Version 3.1.0 of R. See the topic "Download and install R 3.1.0" for more information.
- IBM SPSS Modeler - Essentials for R. See the topic "Download and install IBM SPSS Modeler - Essentials for R" on page 8.

To use the R nodes with IBM SPSS Modeler Server you must have the following components installed on the server machine:
- IBM SPSS Modeler Server 17.1. See the topic "Install the IBM SPSS Modeler application" for more information.
- Version 3.1.0 of R. See the topic "Download and install R 3.1.0" for more information.
- IBM SPSS Modeler - Essentials for R. See the topic "Download and install IBM SPSS Modeler - Essentials for R" on page 8 for more information. The bit rate of IBM SPSS Modeler - Essentials for R that is installed must be the same as the installed version of IBM SPSS Modeler Server.

Note: The Windows installer for IBM SPSS Modeler - Essentials for R is the same for both IBM SPSS Modeler and IBM SPSS Modeler Server. For example, the 32-bit installer for IBM SPSS Modeler - Essentials for R applies to both the 32-bit version of IBM SPSS Modeler and the 32-bit version of IBM SPSS Modeler Server.

Install the IBM SPSS Modeler application

There are no additional operating system and hardware requirements. The components that are installed with IBM SPSS Modeler - Essentials for R work with any valid IBM SPSS Modeler license.

If you have not already done so, follow the instructions that are provided with the software to install one of the IBM SPSS Modeler applications on the computer where you will install IBM SPSS Modeler - Essentials for R.

Note: If you are using Windows, and are installing IBM SPSS Modeler - Essentials for R on a desktop machine, you must also install IBM SPSS Modeler 17.1 on the desktop machine. If you are installing IBM SPSS Modeler - Essentials for R on a server machine, you must also install IBM SPSS Modeler Server 17.1 on the server machine.

Download and install R 3.1.0

Version 17.1 of IBM SPSS Modeler - Essentials for R requires R version 3.1 (version 3.1.0 is recommended). Install R on the computer where you will install IBM SPSS Modeler - Essentials for R.

Prerequisites

The target computer where you will install Essentials for R must have X11. If the target computer has a physical display, then it most likely has X11. The steps that follow describe the process for installing X11, if necessary.

1. Install the X11 client and server
   - For Linux distributions that use yum, install the X11 client and server software with:
     ```
     yum groupinstall "X Window System" "Desktop" "Fonts" "General Purpose Desktop"
     yum update xorg-x11-server-Xorg
     yum install xorg-x11-server-Xvfb.x86_64
     ```
   - For Linux distributions that use apt-get, install the X11 client and server software with:
     ```
     apt-get install xorg xterm
     apt-get install xsever-xorg xserver-xorg-core xserver-xorg-dev
     apt-get install xvfb
     ```
2. Install openGL
   - For Linux distributions that use yum, install openGL with:
     ```
     yum install mesa-libGL-devel mesa-libGLU-devel libpng-devel
     ```
   - For Linux distributions that use apt-get, install openGL with:
     ```
     apt-get install libgl1-mesa-glx libgl1-mesa-dev libglu1-mesa libglu1-mesa-dev
     ```
3. Start Xvfb. For more information, see http://www.x.org/archive/X11R7.6/doc/man/man1/Xvfb.1.xhtml.
4. Set the *DISPLAY* environment variable. The general form for the *DISPLAY* variable is:
   ```
   export DISPLAY=<Hostname>:<D>.<S>
   ```

   In the preceding statement, <Hostname> is the name of the computer that hosts the X display server. To specify localhost, omit the value of <Hostname>. <D> is the display number of the Xvfb instance. <S> is the screen number, which is typically 0.

   Note: The *DISPLAY* environment variable must be set before you start the IBM SPSS Modeler server.

In addition to X11, it is also recommended to ensure that tcl/tk is installed before installing R.

Installing R from a package manager

Your distribution's repository may include R 3.1. If so, you can install R using your distribution's standard package manager (such as the RPM Package Manager or the Synaptic Package Manager).
- For Linux distributions that use yum, you can install R with yum install R.
- For Linux distributions that use apt-get, you can install R from the command:
  ```
  apt-get install r-base=<Version> r-base-core=<Version>  r-base-dev=<Version>
  ```
  where <Version> is the name of the version. Note that you might need to update the file /etc/apt/source.list to add new sources.

Building and installing R from source

The source for R version 3.1 is available from http://www.r-project.org/. You can also download it directly from ftp://ftp.stat.math.ethz.ch/Software/CRAN/src/base/R-3/.

1. Create a temporary directory where you will uncompress and unpack the R source. For example, at a command prompt type:
   ```
   mkdir ~/Rsource
   ```
2. Download the source code for building R, for example *R-3.1.0.tar.gz*, and save it to the temporary directory.
3. Change to the temporary directory. For example, at a command prompt type:

```
cd ~/Rsource
```

4. Uncompress and unpack the R source to the temporary directory. For example, at a command prompt type:

```
tar xzf R-3.1.0.tar.gz
```

5. Change to the source directory. For example, at a command prompt type:

```
cd R-3.1.0
```

Note: To install R to the default directory, you must run the following step as root, either by logging in as root or using the `sudo` command. It is recommended that you read the information in *doc/html/R-admin.html* (located under the directory where you unpacked the R source) before proceeding with configuring, building and installing R.

6. Execute the following commands to specify necessary compiler settings (see the special settings for PowerLinux):

```
export CC="gcc -m64"
export CXXFLAGS="-m64 -O2 -g"
export FFLAGS="-m64 -O2 -g"
export FCFLAGS="-m64 -O2 -g"
export LDFLAGS="-L/usr/local/lib64"
export LIBnn=lib
```

PowerLinux Settings:

```
export CC="<XLC_PATH>/bin/xlc_r -q64"
export CFLAGS="-g -O2 -qstrict -qfloat=nomaf:fenv"
export F77="<XLF_PATH>xlf_r -q64"
export FFLAGS="-g -O3 -qstrict -qfloat=nomaf:fenv -qextname"
export CXX="<XLC_PATH>xlC_r -q64"
export CPICFLAGS=-qpic
export CXXPICFLAGS=-qpic
export FPICFLAGS=-qpic
export SHLIB_LDFLAGS=-qmkshrobj
export SHLIB_CXXLDFLAGS=-G
export FC="<XLF_PATH>xlf95_r -q64"
export FCFLAGS="-g -O3 -qstrict -qfloat=nomaf:fenv -qextname"
export FCPICFLAGS=-qpic
export CXX1XSTD=-qlanglvl=extended0x
```

Where <XLC_PATH> and <XLF_PATH> are the locations of IBM XL C/C++ for Linux and IBM XL Fortran for Linux respectively.

7. Configure, build, and install R. Be sure to configure R with the `--enable-R-shlib` and `--with-x` arguments. For example, at a command prompt type (see the special settings for PowerLinux)::

```
./configure --enable-R-shlib --with-x && make && make install
```

PowerLinux Settings:

```
./configure -–enable-R-shlib -–with-x -–with-readline=no && gmake && gmake install
```

AIX

Note: An AIX expert with RPM experience is required. The expert is expected to have an advanced skill set, not limited to but including the following: installing RPM packages; building open source software using IBM native C and Fortran compilers, as well as GNU make; installing and configuring X11, including the X Virtual Frame Buffer.

Environment requirements

OS: AIX6.1 or AIX7.1

Compiler: IBM XL C/C++ for AIX, V12 .1 and IBM XL FORTRAN for AIX, V14.1

R-3.1 depends on the 3rd party packages that are listed in the following table. Upload these RPM files to the AIX server before installing R and run the following command as root to install them:

```
# rpm -U --nodeps ./*.rpm
```

Note: If any warning messages are displayed when the `rpm -U` command is run, then execute the `rpm -qsi` command to check the installation result. For example: # rpm – qsi `bash-4.2-9`. If "normal" is returned, the RPM files were installed successfully. For more information, refer to the RPM command reference.

Table 1. Required RPM files

RPM file	URL
bash-4.2-9.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2091
blas-3.4.1-2.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2095
bzip2-1.0.6-2.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1439
cairo-1.12.2-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2011
expat-2.1.0-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1639
fontconfig-2.8.0-4.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1412
freetype2-2.4.4-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1414
gettext-0.17-8.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2013
glib2-2.31.2-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2017
info-5.0-2.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1918
jbigkit-libs-2.0-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1422
libICE-1.0.8-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1718
libSM-1.2.1-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1722
libXft-2.2.0-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1423
libXrender-0.9.6-5.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2092
libffi-3.0.11-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1587
libjpeg-8d-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1874
libpng-1.5.10-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1878
libtiff-4.0.1-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1880
libxml2-2.9.1-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1841
pango-1.30.1-2.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2025
pcre-8.12-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1460
pixman-0.26.0-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1589
readline-6.2-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1464
tcl-8.4.19-1.aix5.3.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1047
tk-8.4.19-1.aix5.3.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1052
xz-libs-5.0.4-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1890
zlib-1.2.5-6.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1908
gmp-5.1.3-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2046
lapack-3.4.1-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1612
libiconv-1.14-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2024
mpfr-3.1.2-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=2049
pkg-config-0.25-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1462

Table 1. Required RPM files (continued)

RPM file	URL
readline-devel-6.2-3.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1465
texinfo-5.0-2.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1920
xz-5.0.4-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1888
xz-devel-5.0.4-1.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1889
zlib-devel-1.2.5-6.aix6.1.ppc.rpm	http://www-frec.bull.com/affichage.php?id=1909
make-3.81-1.aix6.1.ppc.rpm	ftp://ftp.boulder.ibm.com/aix/freeSoftware/aixtoolbox/ RPMS/ppc/make/make-3.81-1.aix6.1.ppc.rpm

Building and installing R

1. Create a temporary directory where you will uncompress and unpack the R source. For example, at a command prompt type:

   ```
   mkdir ~/Rsource
   ```

2. Download the source code for building R, for example *R-3.1.0.tar.gz*, and save it to the temporary directory.

3. Change to the temporary directory. For example, at a command prompt type:

   ```
   cd ~/Rsource
   ```

4. Uncompress and unpack the R source to the temporary directory. For example, at a command prompt type:

   ```
   gzip –d –c R-3.1.0.tar.gz | tar –xvf –
   ```

5. Change to the source directory. For example, at a command prompt type:

   ```
   cd R-3.1.0
   ```

   Note: To install R to the default directory, you must run the following step as root, either by logging in as root or using the sudo command. It is recommended that you read the information in *doc/html/R-admin.html* (located under the directory where you unpacked the R source) before proceeding with configuring, building and installing R.

6. Verify that the */tmp* directory in your file system has over 200MB of free disk space.

7. Edit *~/Rsource/R-3.1.0/src/extra/tre/tre-internal.h* and change the following section (please refer to the patch at https://r-forge.r-project.org/scm/viewvc.php/patches/aix_R210_tre.patch?view=markup &root=aix:

   ```
   ---------------------------------------
   /* Wide characters. */
   typedef wint_t tre_cint_t;
   #define TRE_CHAR_MAX WCHAR_MAX
   ---------------------------------------

   to:

   ---------------------------------------
   /* Wide characters. */
   typedef wint_t tre_cint_t;
   /*
   WCHAR_MAX not possible to function for UINT32_MAX on AIX.
   AIX 64bit         WCHAR_MAX = UINT32_MAX
   Solaris-sparcv9   WCHAR_MAX = INT32_MAX
   Linux amd64       WCHAR_MAX = INT32_MAX
   */
   #if (WCHAR_MAX == UINT32_MAX)
   #define TRE_CHAR_MAX INT32_MAX
   ```

```
#else
#define TRE_CHAR_MAX WCHAR_MAX
#endif
---------------------------------------
```

8. To specify necessary compiler settings and ensure the compiler is on the path, execute the following commands:

```
export CC="/usr/vacpp/bin/xlc_r -q64"
export CXX="/usr/vacpp/bin/xlC_r -q64"
export CXXFLAGS="-I/opt/freeware/include -I/usr/include -qrtti=all -qarch=auto -qcache=auto
        -qtune=auto -qstrict -qmaxmem=16384 -U__STR__ -qnolibansi"
export CFLAGS="-I/opt/freeware/include -I/usr/include -qrtti=all -qarch=auto -qcache=auto
        -qtune=auto -qstrict -qmaxmem=16384 -U__STR__ -qnolibansi"
export FC="/usr/bin/xlf_r -q64"
export F77="/usr/bin/xlf_r -q64"
export CPPFLAGS="-I/opt/freeware/include -I/usr/include"
export LDFLAGS="-L/opt/freeware/lib64 -L/opt/freeware/lib -L/usr/lib64 -L/usr/lib"
export FFLAGS="-I/opt/freeware/include -I/usr/include -qarch=auto -qcache=auto -qtune=auto
        -qstrict -qmaxmem=16384"
export FCLAGS="-I/opt/freeware/include -I/usr/include -qarch=auto -qcache=auto -qtune=auto
        -qstrict -qmaxmem=16384"
export AR="ar -X64"
export OBJECT_MODE="64"
```

9. Configure, build, and install R. Be sure to configure R with the `--enable-R-shlib` and `--with-x` arguments. For example, at a command prompt type:

```
./configure --with-ICU=no --with-system-pcre --with-system-zlib --with-system-bzlib
--enable-R-shlib --with-x --enable-BLAS-shlib --without-recommended-packages && gmake && gmake install
```

10. Add *<R_HOME>/bin* to the PATH environment variable. For example:

```
export PATH=<R_HOME>/bin:$PATH
```

<R_HOME> is the location where R 3.1.0 is to be installed—for example, */usr/local/R-3.1.0.*

Install the recommended packages

1. Uncompress *~/Rsource/R-3.1.0/src/library/Recommended/Matrix_1.1-3.tar.gz*. Edit *~/Matrix/src/CHOLMOD/Include/cholmod_blas.h* and change the following section:

```
------------------------------------------------------
#elif defined (_AIX) || defined (MIBM_RS) || defined (ARCH_IBM_RS)
#define CHOLMOD_AIX
#define CHOLMOD_ARCHITECTURE "IBM AIX"
/* recent reports from IBM AIX seem to indicate that this is not needed: */
/* #define BLAS_NO_UNDERSCORE */
------------------------------------------------------
```

to:

```
------------------------------------------------------
#elif defined (_AIX) || defined (MIBM_RS) || defined (ARCH_IBM_RS)
#define CHOLMOD_AIX
#define CHOLMOD_ARCHITECTURE "IBM AIX"
/* recent reports from IBM AIX seem to indicate that this is not needed: */
#define BLAS_NO_UNDERSCORE
------------------------------------------------------
```

Compress to ~/Rsource/R-3.1.0/src/library/Recommended/Matrix_1.1-3.tar.gz.

2. Change the directory to /R-3.1.0/src/library/Recommended/ and run R.

```
cd /R-3.1.0/src/library/Recommended/
R
```

3. Install the recommended R packages.

```
> install.packages("./KernSmooth_2.23-12.tar.gz", repos=NULL)
> install.packages("./MASS_7.3-31.tar.gz", repos=NULL)
> install.packages("./lattice_0.20-29.tar.gz", repos=NULL)
> install.packages("./Matrix_1.1-3.tar.gz", repos=NULL)
> install.packages("./boot_1.3-11.tar.gz", repos=NULL)
```

```
> install.packages("./class_7.3-10.tar.gz", repos=NULL)
> install.packages("./cluster_1.15.2.tar.gz", repos=NULL)
> install.packages("./codetools_0.2-8.tar.gz", repos=NULL)
> install.packages("./foreign_0.8-61.tar.gz", repos=NULL)
> install.packages("./nlme_3.1-117.tar.gz", repos=NULL)
> install.packages("./nnet_7.3-8.tar.gz", repos=NULL)
> install.packages("./rpart_4.1-8.tar.gz", repos=NULL)
> install.packages("./spatial_7.3-8.tar.gz", repos=NULL)
> install.packages("./survival_2.37-7.tar.gz", repos=NULL)
> install.packages("./mgcv_1.7-29.tar.gz", repos=NULL)
```

Solaris

Environment requirements

OS: Solaris10 or Solaris11

Compiler: Sun C++ V5.8 and Sun Fortran 95 8.2

Building and installing R

1. Create a temporary directory where you will uncompress and unpack the R source. For example, at a command prompt type:

   `mkdir ~/Rsource`

2. Download the source code for building R, for example *R-3.1.0.tar.gz*, and save it to the temporary directory.

3. Change to the temporary directory. For example, at a command prompt type:

   `cd ~/Rsource`

4. Uncompress and unpack the R source to the temporary directory. For example, at a command prompt type:

   `gzip –d –c R-3.1.0.tar.gz | tar –xvf –`

5. Change to the source directory. For example, at a command prompt type:

   `cd R-3.1.0`

   Note: To install R to the default directory, you must run the following step as root, either by logging in as root or using the `sudo` command. It is recommended that you read the information in `doc/html/R-admin.html` (located under the directory where you unpacked the R source) before proceeding with configuring, building and installing R.

6. To specify necessary compiler settings and ensure the compiler is on the path, execute the following commands:

   ```
   export CC="cc -xarch=v9"
   export CFLAGS="-xO5 -xlibmil -dalign"
   export F77="f95  -xarch=v9"
   export FFLAGS="-xO5 -xlibmil -dalign"
   export CXX="CC  -xarch=v9"
   export CXXFLAGS="-xO5 -xlibmil -dalign"
   export FC="f95  -xarch=v9"
   export FCFLAGS="-xO5 -xlibmil -dalign"
   export CPPFLAGS="-I<LIBICONV>/include -I<LIBPNG>/include -I<LIBJPEG>/include -I<LIBZ>/include"
   export LDFLAGS="-L<LIBC/C++> -L<LIBFORTRAN> -L<LIBICONV>/lib
           -L<LIBPNG>/lib -L<LIBJPEG>/lib -L<LIBZ>/lib"
   export LIBnn="lib"
   ```

   Where <LIBC/C++>, <LIBFORTRAN>, <LIBICONV>, <LIBPNG> , <LIBJPEG>, and <LIBZ> are the 64-bit installation locations of the Sun C/C++, Sun Fortran, libiconv, libpng, libjpeg, and zlib libraries respectively (for example, `/opt/SUNWspro/lib/v9`, `/opt/csw/lib/sparcv9`).

7. Configure, bwhuild, and install R. Be sure to configure R with the `--enable-R-shlib` and `--with-x` arguments. For example, at a command prompt type:

```
./configure  -–enable-R-shlib  -–with-x  -–with-readline=no && gmake && gmake install
```

Note: When compiling, you may encounter errors such as the following. Try to force a link against the dynamic library instead of the archive file.

```
ld: fatal: relocation error: R_SPARC_H44: file  <PATH>/libfsu.a(zomplex.o):
   symbol <unknown>: relocations  based on the ABS44 coding model can not be used in building a
   shared object
```

Download and install IBM SPSS Modeler - Essentials for R

Be sure to use a version of IBM SPSS Modeler - Essentials for R that is compatible with the version of IBM SPSS Modeler on your machine. Within a major version of IBM SPSS Modeler, such as 17.1, you must use a version of IBM SPSS Modeler - Essentials for R that has the same major version.

For users who are working in distributed mode (with IBM SPSS Modeler Server) please install IBM SPSS Modeler - Essentials for R on the server machine.

Download version 17.1 of IBM SPSS Modeler - Essentials for R, available from http://www.ibm.com/developerworks/spssdevcentral. Be sure to download the version of IBM SPSS Modeler - Essentials for R for the operating system of your IBM SPSS Modeler application.

Install IBM SPSS Modeler - Essentials for R for Windows

For users who are working in distributed mode (with IBM SPSS Modeler Server), if you installed the 32-bit version of IBM SPSS Modeler Server then install the 32-bit version of IBM SPSS Modeler - Essentials for R on the server machine. If you installed the 64-bit version of IBM SPSS Modeler Server then install the 64-bit version of IBM SPSS Modeler - Essentials for R on the server machine.

Windows XP

Double-click the downloaded file and follow the instructions that are displayed on the screen.

Windows Vista, Windows 7, or Windows Server 2008

You must run the installer as administrator:
1. Using Windows Explorer, browse to the folder where you downloaded the file.
2. Right-click the downloaded file and choose **Run as Administrator**.
3. Follow the instructions that are displayed on the screen.

Pushing an installation

As an alternative to the manual installation described above, you can push the installation to Windows computers. This is most useful for network administrators who need to install to multiple end users. Following is the form of the command line for pushing an installation:

```
<installer_name> -i silent
```

Here, *<installer_name>* is the name of the installer file for IBM SPSS Modeler - Essentials for R, for example: *SPSS_Modeler_REssentials_17000_win32.exe*.

Increasing the memory limit

Under Windows, R imposes a limit on the total memory allocation that is available to an R executable session. This limit restricts the embedded R process `r_start.exe`.

If required, you can modify the numeric value to increase the memory limit; to do this, add an option in the end of the `C:\Program Files\IBM\SPSS\Modeler\17\ext\bin\pasw.rstats\config.ini` file. For example, to raise the limit to 4096Mb:

`Max_Men_Size=4096`

Install IBM SPSS Modeler - Essentials for R for UNIX

Important: If you are installing on Solaris, you can only install to an English locale due to an issue with InstallAnywhere.

1. Start a terminal application.
2. Change to the directory where you downloaded IBM SPSS Modeler - Essentials for R. At the command prompt, type:

   `./<<filename>>`

   where `<<filename>>` is the name of the file you downloaded. You must ensure that this file has execute permission before you attempt to run the command.

   Note: You must run the previous command as root, either by logging in as root or (if installing as non-root) by using the `sudo` command and having write permission to `<SPSS Modeler installation directory>/ext/bin` and `<USER_R_HOME>`. In addition, you need to install the gcc and gfortran compilers before you install IBM SPSS Modeler - Essentials for R.

3. Follow the instructions that are displayed on the screen. When prompted for the location of R, you can obtain the R home directory by running `R.home()` from the R prompt.

Note: To ensure that SPSS Modeler can launch R successfully, export the library search paths that are required by `libR.so` to the `DLLIBPATH` variable in the `modelersrv.sh` file in the SPSS Modeler Server installation directory. To find all the `libR.so` libraries that are referenced, use the command **ldd <R_HOME>/lib/libR.so**.

Silent Installation

As an alternative to the manual installations described previously, you can also run a silent installation. This is most useful for network administrators who need to install to multiple end users. To run a silent installation, do the following:

1. Start a terminal application.
2. Change to the directory where you downloaded IBM SPSS Modeler - Essentials for R.
3. Using a text editor, create a response file named `install.properties`.
4. Add the following properties and associated values to the response file:

   ```
   USER_INSTALL_DIR=<R 3.1.0 home directory>
   FRONTEND_INSTALL_DIR=<IBM SPSS Modeler location>/ext/bin
   ```

   where `<R 3.1.0 home directory>` is the installation location of R 3.1.0 and `<IBM SPSS Modeler location>` is the installation location of IBM SPSS Modeler. For example, on UNIX:

   ```
   USER_INSTALL_DIR=/usr/local/lib/R
   FRONTEND_INSTALL_DIR=/usr/IBM/SPSS/ModelerServer/17.0/ext/bin
   ```

   For example, on Windows:

   ```
    USER_INSTALL_DIR=C:\\Program Files\\R\\R-3.1.0
    FRONTEND_INSTALL_DIR=C:\\Program Files\\IBM\\SPSS\\Modeler\\17\\ext\\bin
   ```

5. Save `install.properties` to the directory that contains the `.bin` file for IBM SPSS Modeler - Essentials for R and change to that directory.
6. On UNIX, run the installer with the following command:

   `./<installer_name> -i silent`

where `<installer_name>` is the name of the `.bin` file for IBM SPSS Modeler - Essentials for R. Note that you must run the previous command as root, either by logging in as root or using the `sudo` command.

On Windows, run the installer with the following command:

```
<installer_name> -i silent
```

where `<installer_name>` is the name of the installer file for IBM SPSS Modeler - Essentials for R, for example `SPSS_Modeler_REssentials_17000_win32.exe`.

Alternatively, on UNIX, you can run the installer with the following command:

```
./<installer_name> -f <Response file location>
```

On Windows, you can run the installer with the following command:

```
<installer_name> -f <Response file location>
```

In both cases, `<Response file location>` is the file path to the response file. If you use this alternative command, you must add the following property to the response file:

```
INSTALLER_UI=[swing | console | silent]
```

Note: To use a different response file (other than `install.properties`), on UNIX run the installer with the following command:

```
./<installer_name> -i silent -f <response file name>
```

On Windows, run the installer with the following command:

```
<installer_name> -i silent -f <response file name>
```

Running R nodes in IBM SPSS Modeler Solution Publisher and IBM SPSS Collaboration and Deployment Services

If you want to run R nodes in SPSS Modeler Solution Publisher and run the Scoring Service on the IBM SPSS Collaboration and Deployment Services server, you must install IBM SPSS Modeler - Essentials for R and R 3.1.0 with SPSS Modeler Solution Publisher and the IBM SPSS Collaboration and Deployment Services server.

Running R nodes (R Process, R Output, and R Model nodes)

1. For the R nodes to work with SPSS Modeler Solution Publisher, install IBM SPSS Modeler - Essentials for R and R 3.1.0 on the same machine as the IBM SPSS Collaboration and Deployment Services server. During IBM SPSS Modeler - Essentials for R installation, point to the R 3.1.0 installation directory and the SPSS Modeler Solution Publisher installation directory.

2. To run the Scoring Service on the IBM SPSS Collaboration and Deployment Services server, you must also install IBM SPSS Modeler - Essentials for R and R 3.1.0 on the same machine as the IBM SPSS Collaboration and Deployment Services server. During IBM SPSS Modeler - Essentials for R installation, point to the R 3.1.0 installation directory and the local IBM SPSS Modeler Server location under the IBM SPSS Collaboration and Deployment Services server installation directory.

3. For R in CDB node execution, after setting up the environment as described in the previous steps, you must also set an environment variable as follows:

   a. On the IBM SPSS Collaboration and Deployment Services server machine and the IBM SPSS Modeler client machine, create a **system** environment variable called **IBM_SPSS_MODELER_EXTENSION_PATH** that points to the folder that contains the R CDB node `.cfd` and `.cfe` files.

   b. Make sure both IBM SPSS Collaboration and Deployment Services server and IBM SPSS Modeler client can access this path.

   c. Restart IBM SPSS Collaboration and Deployment Services server and IBM SPSS Modeler client.

Note: To ensure that R can launch successfully, export the library search paths that are required by `libR.so` to the `DLLIBPATH` variable in the `modelersrv.sh` file in the IBM SPSS Modeler Solution Publisher installation directory. To find all the `libR.so` libraries that are referenced, use the command **ldd `<R_HOME>/lib/libR.so`**.

Repairing an installation

If you uninstall and then reinstall the IBM SPSS Modeler 17.1 application or R 3.1.0, then you must also uninstall and then reinstall version 17.1 of IBM SPSS Modeler - Essentials for R.

Uninstalling IBM SPSS Modeler - Essentials for R components

Windows

Remove the following folder and files:

- `ibmspsscf8.1` from `<R 3.1.0 home directory>\\library`
- `config.ini` from `<IBM SPSS Modeler location>\\ext\\bin\\pasw.rstats`
- `embeded.dll` from `<IBM SPSS Modeler location>\\ext\\bin\\pasw.rstats`

UNIX

Remove the following folder and files:

- `ibmspsscf8.1` from `<R 3.1.0 home directory>/library`
- `config.ini` from `<IBM SPSS Modeler location>/ext/bin/pasw.rstats`
- `libembeded.so` from `<IBM SPSS Modeler location>/ext/bin/pasw.rstats`

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