ASReml 4 (RLM) macOS installation guide

This implementation was produced under macOS version 10.13.2 and should be compatible with other similar macOS version.

- This software is not suitable for PowerPC architecture.

Files Included in the Installation

The program is provided as a package (pkg) file, comprising a script and binary executable images of the latest version of ASReml, along with documentation and examples.

The files are distributed between 3 folders and include among others:

`bin\asreml.sh`	shell script to invoke the program
`bin\myowngdg.f90`	example Fortran source for OWN variance structure
`doc\ASReml.htm`	HTML Help files (view in normal browser)
`doc\UserGuide.pdf`	Principal source of reference
`doc\UpdateR4.pdf`	Description of changes from previous versions
`doc\pedigree.pdf`	Description of pedigree options
`examples\*.*`	Data and input files for examples contained within the User Guide

Downloading ASReml 4

Site Reference: On the ASReml download page you will need to enter your **Site Reference**. This is a unique string of letters and numbers that was sent in the Order Confirmation email. If someone other than yourself organized the software purchase you will need to obtain the **Site Reference** from them.

1. Go to the ASReml knowledge base https://asreml.kb.vsni.co.uk/asreml-4-downloads/ then enter your **Site Reference** and other details to access the downloads page.
2. Scroll down to the **macOS installation** section and download the file.

Installing ASReml 4

Note: You will need to have administrative privileges to install this software as you will be prompted for an administrator password during the installation process.

1. By default the downloaded installer file will be stored in your **Downloads** folder and will have the extension `.pkg`.

2. Double-click the downloaded installer file to launch the installation Wizard. This will be named
   `ASReml-macOS-10.13.2-x64-4.x.xx.x.x.pkg`

3. Follow the instructions to install ASReml. ASReml will install by default into
   `/usr/local/vsni/asreml`

Confirming the Installation

We'll now carry out a number of steps to confirm that the installation is as expected. If any step fails to illicit the desired response it means something has gone awry: in this instance please contact support@vsni.co.uk.

1. First you need to create a Reprise directory and set it to mode 777. Type the following command:
   `sudo mkdir "/Library/Application Support/Reprise"`

2. Now type the following
   `sudo chmod 777 "/Library/Application Support/Reprise"`

3. Now test the install path using the type utility
   `type asreml`

   This should give you a response showing you the location of the command file
   `asreml is /usr/local/bin/asreml`

4. List some more details of the command file with the following command:
   `ls -l /usr/local/bin/asreml`

   This should give you the response
   `lrwxr-xr-x  1 root  admin  36 Jun 18 16:49 /usr/local/bin/asreml ->`
   `/usr/local/vsni/asreml/bin/asreml.sh`

5. Now we know the location of this installation of ASReml we can list the contents
   `ls -l /usr/local/vsni/asreml/bin/`

   This should give you the response
   ```
   total 58464
   -rwxr-xr-x  1 root  wheel  26471504 Jun 18 16:41 asreml
   -rwxr-xr-x  1 root  wheel      9217 Jun 18 16:40 asreml.sh
   -rw-r--r--  1 root  wheel   3434780 Jun 18 16:40 libvsninet.dylib
   -rw-r--r--  1 root  wheel      9355 Jun  7 16:30 myowngdg.f90
   ```
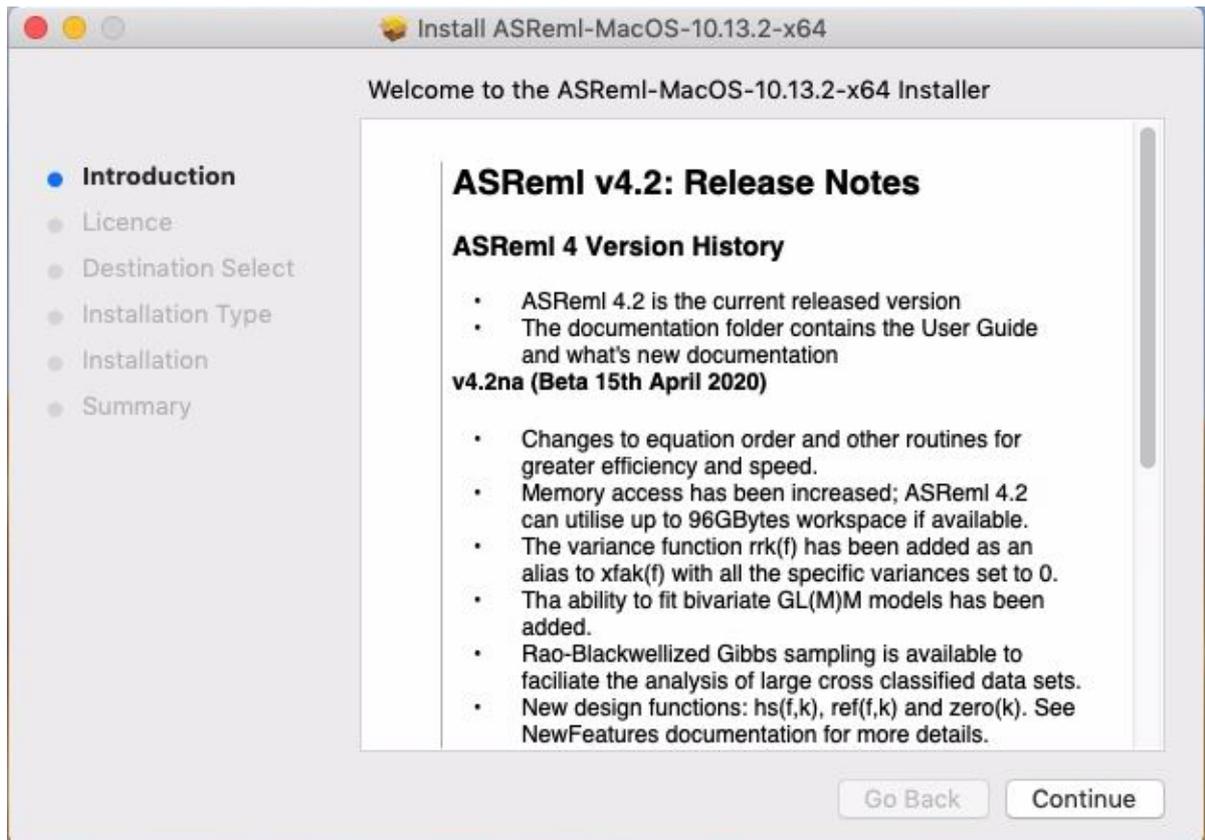
6. This is all correct so we can display a listing of ASReml commands by typing
    `asreml --help`

    Which should give you a list of commands that explain how to interact with ASReml.

7. You can now display your license status by typing
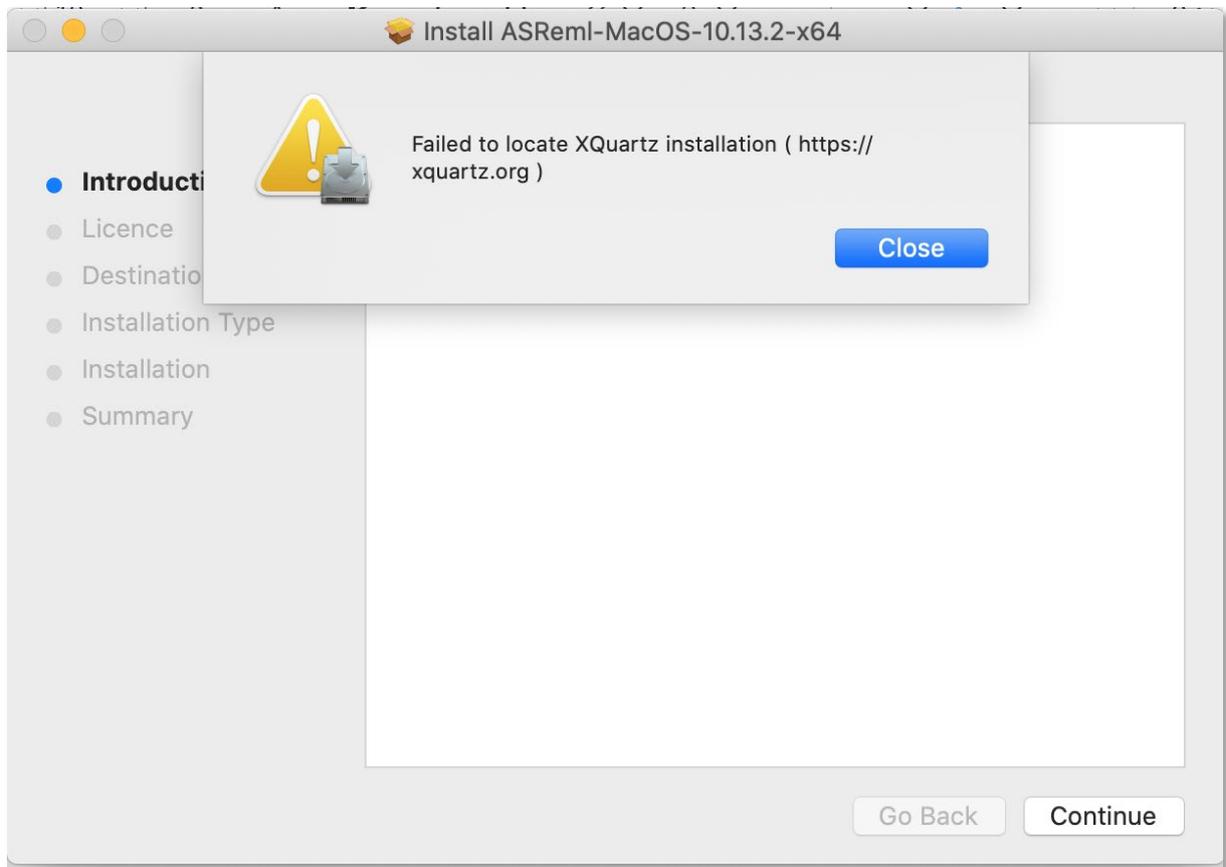   `asreml --status`

    If your status shows that you already have a license (because you are upgrading, rather than installing for the first time), you can skip to section **Running ASReml 4** to test the installation.

    If your status shows as '`No license for product`', continue with **Activating ASReml 4**

Failed to locate XQuartz

1. If you see this alert message, copy the URL shown on the dialog and paste into a browser, then close ASReml completely.
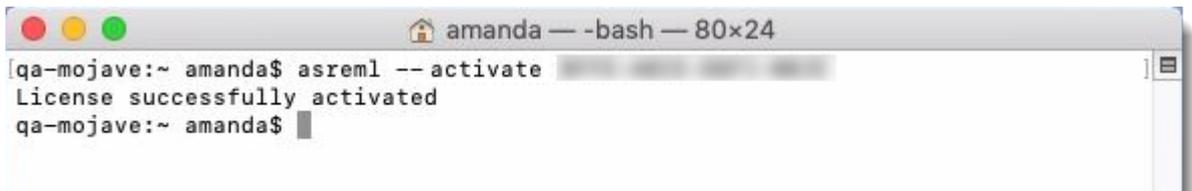

2. Follow the instructions at the URL to download and install XQuartz.

3. Restart the ASReml installation process as detailed in the previous section **Installing ASReml 4**.

Activating ASReml 4

When installation is complete you will need to activate your license using the 16 digit Activation Code emailed to you by customer support.
(If someone other than yourself organized the software purchase you will need to obtain the Activation Code from them.)

1. Open a terminal window and type `asreml --activate` followed by the 16 digit Activation Code.
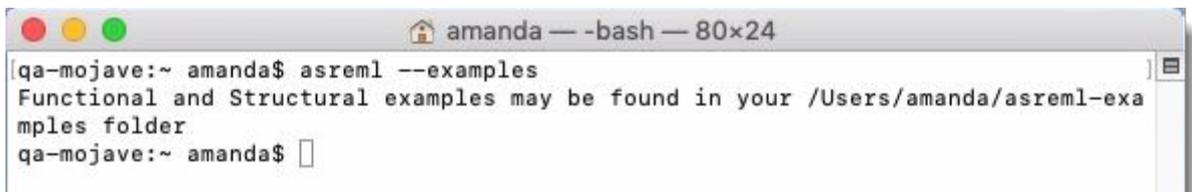
   For example: `asreml --activate 1234-1234-1234-1234`

   ```
   [qa-mojave:~ amanda$ asreml -- activate
   License successfully activated
   qa-mojave:~ amanda$
   ```

2. Now install the example folders by typing the following command.
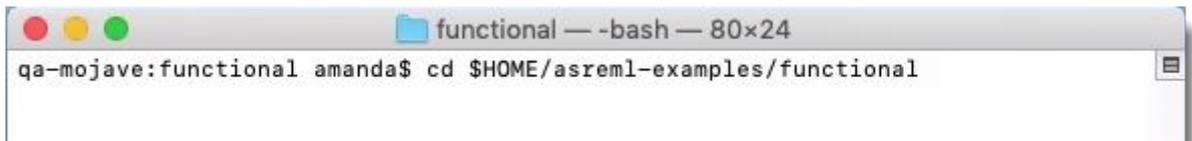
   `asreml —-examples`

   ```
   [qa-mojave:~ amanda$ asreml —-examples
   Functional and Structural examples may be found in your /Users/amanda/asreml-exa
   mples folder
   qa-mojave:~ amanda$
   ```

Running ASReml 4

You can now test the installation by running an example.

1. The example data files are stored in the `functional` directory. We'll navigate to this by typing the following command.
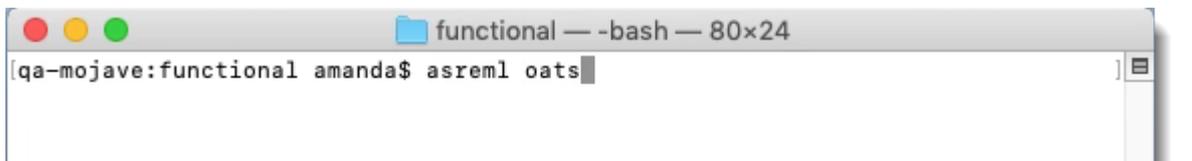
   `cd $HOME/asreml-examples/functional`

   ```
   qa-mojave:functional amanda$ cd $HOME/asreml-examples/functional
   ```

2. Now run the `oats` example by typing the following command:

   `asreml oats`

   ```
   [qa-mojave:functional amanda$ asreml oats
   ```

This will produce the following output along with a scatterplot.

```
qa-mojave:functional amanda$ asreml oats
[
 ASReml 4.2 [01 Jan 2016]  mv [15 Jun 2020]  16 Jun 2020 14:27:11
 Licensed to: VSNi - VS17CAT1:[VOF13231]
 Expiry: 31-dec-2020,  199 days
 ASReml 4.2 [01 Jan 2016] Split plot analysis - oat  Variety.Nitrogen
    Build mv [15 Jun 2020]   64 bit  Macintosh 64-bit
 mv [15 Jun 2020]   2.0 Gbyte  oats1

 Univariate analysis of yield
 Summary of 72 records retained of 72 read

  Notice: Specify !SIGMAP to allow the Sigma parameterization
 Forming      44 equations:  20 dense.
 Predict Design Done
LLI  1      60  -216.55      306.16
AGR
 >> >>             Process      CPU_time     SumCPU      Clock    SumClock
 >> >>  Iteration complete: sec    0.01       0.01       0.11      0.11
  1 LogL=-216.545    S2=  306.16          60 df
 >> >>  Iteration complete: sec    0.00       0.01       0.00      0.12
  2 LogL=-213.570    S2=  256.36          60 df
  3 LogL=-211.053    S2=  214.63          60 df
  4 LogL=-209.833    S2=  191.51          60 df
  5 LogL=-209.424    S2=  180.28          60 df
  6 LogL=-209.379    S2=  177.52          60 df
  7 LogL=-209.378    S2=  177.09          60 df
     PVALS    123.4       114.2      98.89      79.39     41.
  109.8       97.62      104.5      311.9     126.8    118
  124.8      117.2      110.8      114.7     108.5     89.
  98.50      86.67      71.50      80.00
  8 LogL=-209.378    S2=  177.08          60 df
 Graphics screen requested
idv(blocks)          IDV_V   6  1.21116       214.477      1.
idv(blocks.wplots)   IDV_V  18  0.598937      106.062      1.
  7 mu                         1     5.0    245.14
  4 variety                    2    10.0      1.49
  2 nitrogen                   3    45.0     37.69
  8 variety.nitrogen           6    45.0      0.30
```

Using your license offline

You can use ASReml without an Internet connection for up to 30 days by taking your ASReml license offline.

1. Ensure you have an Internet connection so that you can connect to the RLM license server.

2. Start ASReml then type the following: `asreml --go-offline <period in days>`

   e.g. `asreml --go-offline 2` (This will take you offline for 2 days)

Your license will automatically return to online mode once the offline days have expired. You can also go back online before the offline expiry date by following the instructions below.
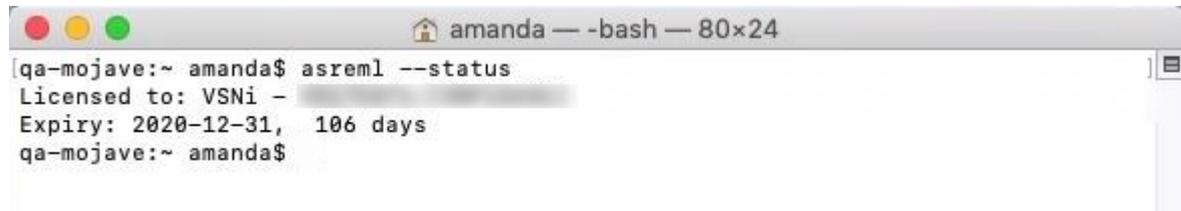
Going back online

To return to online mode at any time, do the following:

1. Ensure you have an Internet connection so that you can connect to the RLM license server.

2. Start ASReml then type `asreml --go-online`

Viewing license status

You can see how many days remain before expiration of your license by checking the license status.

1. Ensure you have an Internet connection so that you can connect to the RLM license server.

2. Start ASReml then type `asreml --status`

```
[qa-mojave:~ amanda$ asreml --status
Licensed to: VSNi —
Expiry: 2020-12-31,  106 days
qa-mojave:~ amanda$
```

Using Help

1. You can view the ASReml help commands by typing `asreml --help`