

Introduction

This document details the necessary steps for installation of NGSPICE on Red Hat 7, Red Hat 8, Oracle Linux 7 and Oracle Linux 8

The above mentioned operating systems are supplied with GCC 4.8 which is a comparatively ancient compiler that is not compatible with NGSPICE. Unfortunately the OS themselves rely on having this version and one cannot simply update to the version required by the tool.

To get around this development toolsets have been made available that enables the user to compile and make in a number of different versions. In this case we will install toolset 11 which is the minimum requirement for NGSPICE.

The assumption here is that the user wishes to install NGSPICE in a custom directory with ADMS. This may not be the exact path the user wishes to take, but the general principles remain the same. There is an install script `compile_linux.sh` which could simplify installation somewhat. The user should read this script before trying it – especially if ADMS is required. The principle of using the correct C compiler still applies to this script and although not explicit, there should be enough information here to enable the user to figure out how to use the install script.

All 4 of the following installations were tried and tested on virgin OS installations using VMWare Workstation Pro 16

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Red Hat 7

Assumptions:

1. The appropriate pools have been attached via the subscription manager. Details can be found at: <https://access.redhat.com/solutions/253273>
2. Git is installed
3. The user has administrative privileges

```
sudo subscription-manager repos --enable rhel-7-server-devtools-rpms
sudo subscription-manager repos --enable rhel-7-server-extras-rpms
sudo subscription-manager repos --enable rhel-7-server-optional-rpms
sudo subscription-manager repos --enable rhel-server-rhsc1-7-rpms
sudo subscription-manager repos --enable rhel-server-rhsc1-7-debug-rpms
sudo subscription-manager repos --enable rhel-server-rhsc1-7-source-rpms
sudo subscription-manager repos --enable rhel-7-server-optional-debug-rpms
sudo subscription-manager repos --enable rhel-7-server-optional-source-rpms
sudo yum install devtoolset-11
sudo yum install -y llvm-toolset-11.0
sudo yum install -y libXaw libXaw-devel readline readline-devel libX11 libX11-devel
sudo yum install -y perl perl-libxml-perl libxml2-devel libxml2 perl-XML-LibXML libXaw libXaw-devel
readline readline-devel libX11 libX11-devel
```

Install ADMS

Assuming the user is in their home directory:

```
cd Downloads
git clone https://github.com/Qucs/ADMS.git
cd ADMS
sh bootstrap.sh
./configure
make
sudo make install
```

Now install NGSPICE:

```
cd..
git clone git://git.code.sf.net/p/ngspice/ngspice ngspice_test
cd ngspice_test
# the following lines ensures gcc 11 is used
scl enable devtoolset-11 bash
./autogen.sh --adms
mkdir release
cd release
../configure --with-x --enable-xspice --disable-debug --enable-cider --with-readline=yes --enable-openmp
--enable-adms --prefix=/where/you/want/to/install/ngspice/ 2>&1 | tee make.log
make
sudo make install
```

Oracle Linux 7

Assumptions:

1. Git is installed
2. The user has administrative privileges

The following enables the required repo's and installs dependencies needed for AMS and NGSPICE.

```
sudo yum-config-manager --enable ol7_optional_latest
sudo yum install -y scl-utils
sudo yum install -y oraclelinux-release-el7
sudo yum -y install oracle-softwarecollection-release-el7
sudo yum -y update
sudo yum install -y devtoolset-11
sudo yum install -y perl perl-libxml-perl libxml2-devel libxml2 perl-XML-LibXML libXaw libXaw-devel
readline readline-devel libX11 libX11-devel
```

Install ADMS

Assuming the user is in their home directory:

```
cd Downloads
git clone https://github.com/Qucs/ADMS.git
cd ADMS
sh bootstrap.sh
./configure
make
sudo make install
```

Now install NGSPICE:

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cd ..
git clone git://git.code.sf.net/p/ngspice/ngspice ngspice_test
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# the following lines ensures gcc 11 is used
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../configure --with-x --enable-xspice --disable-debug --enable-cider --with-readline=yes --enable-openmp
--enable-adms -- prefix=/where/you/want/to/install/ngspice/ 2>&1 | tee make.log
make
sudo make install
```

Red Hat 8

Assumptions:

1. You have a valid Red Hat subscription
2. Git is installed
3. The user has administrative privileges

The following enables the required repo's and installs dependencies needed for AMS and NGSPICE.

```
sudo subscription-manager repos --enable rhel-8-for-$(uname -i)-baseos-debug-rpms
sudo subscription-manager repos --enable rhel-8-for-$(uname -i)-baseos-source-rpms
sudo subscription-manager repos --enable rhel-8-for-$(uname -i)-appstream-debug-rpms
sudo subscription-manager repos --enable rhel-8-for-$(uname -i)-appstream-source-rpms
sudo subscription-manager repos --enable codeready-builder-for-rhel-8-x86_64-rpms
sudo yum install -y gcc-toolset-11
sudo yum install -y perl perl-libxml-perl libxml2-devel libxml2 perl-XML-LibXML libXaw libXaw-devel
readline readline-devel libX11 libX11-devel
```

Install ADMS

Assuming the user is in their home directory:

```
cd Downloads
git clone https://github.com/Qucs/ADMS.git
cd ADMS
sh bootstrap.sh
./configure
make
sudo make install
```

Now install NGSPICE:

```
cd ..
git clone git://git.code.sf.net/p/ngspice/ngspice ngspice_test
cd ngspice_test
# the following lines ensures gcc 11 is used
scl enable gcc-toolset-11 bash
./autogen.sh --adms
mkdir release
cd release
../configure --with-x --enable-xspice --disable-debug --enable-cider --with-readline=yes --enable-openmp
--enable-adms -- prefix=/where/you/want/to/install/ngspice/ 2>&1 | tee make.log
make
sudo make install
```

Oracle Linux 8

Assumptions:

1. Git is installed
2. The user has administrative privileges

The following enables the required repo's and installs dependencies needed for AMS and NGSPICE.

```
sudo dnf makecache
sudo dnf upgrade
sudo dnf search epel
sudo dnf install oracle-epel-release-el8 # this line needs to match the result of the previous search
sudo yum install -y scl-utils
sudo yum install -y gcc-toolset-11
sudo yum install -y perl perl-libxml-perl libxml2-devel libxml2 perl-XML-LibXML libXaw libXaw-devel
readline readline-devel libX11 libX11-devel
```

Install ADMS

Assuming the user is in their home directory:

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cd Downloads
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Now install NGSPICE:

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