Configuring Ubuntu 18.04 LTS for ESP-r

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Preamble

Ubuntu 18.04 is the recommended Linux Operating System (LOS) for use with ESP-r, either as a standalone implementation or as a guest system within a virtual machine.

Ubuntu 18.04 LTS (Bionic Beaver) can be downloaded from

http://releases.ubuntu.com/18.04/

Install the OS

There are three options to install the LOS:

1. as the primary OS of a physical computer;
2. as a guest OS within a virtual machine such as VirtualBox or VMware;
3. or using Windows Subsystem for Linux – this allows for a LOS to be used directly on Windows 10, unmodified, without the overhead of a virtual machine.

There are multiple online sources describing all options.

Once you have installed the LOS, you have the option of installing ESP-r directly from the pre-compiled binary release or by building the system from the source code release.

Installing ESP-r using the pre-compiled installer

Download the .gz file from the ESRU website and issue the following commands in a terminal window.

```
gzip -d ESP-r_<version>.deb.gz

sudo apt install ./ESP-r_<version>.deb
```

Then add the location of the installed ESP-r modules to your environment by following the instructions in the last section of this document.

Installing from source code

Before downloading, compiling and installing ESP-r a number of packages need to be installed in the LOS.

Compilers and library support tools

```
sudo apt install build-essential gfortran libtool
```

X Window System GUI environment

```
sudo apt install libx11-dev
```

Fonts

```
sudo apt install libxft-dev
```

XML support

```
sudo apt install libxml2-dev libxslt1-dev
```

SQLite support

```
sudo apt install libsqlite3-dev
```

Visualisation support

```
sudo apt install imagemagick xfig transfig
```

Additional applications

```
sudo apt install csh xterm curl nedit
```

Radiance

Download the latest version of Radiance from

https://www.radiance-online.org/download-install/radiance-source-code/un-official-head-version

Decompress both the source tree and auxiliary files into a single directory. Now issue the following command to install Radiance

```
sudo ./makeall install
```

Modish

```
sudo cpan
```

At the cpan prompt, issue the following commands.

```
upgrade

install List::AllUtils

install Vector::Object3D::Polygon

install Math::Polygon::Tree

install Statistics::Basic

install Data::Dump
```

Then press 'q' to return to the shell.
Some components of the above packages will not activate until next log in.

Building ESP-r

Download the latest version of the source from the ESRU website and follow the instructions in the accompanying Readme file to build and install the ESP-r system.

Adding ESP-r modules to your path environment variable

Finally, modify your environment so that ESP-r is able to find its resources. Do this by opening ~/.profile with a text editor and adding the following line at the end of the file.

```
PATH="$PATH:/opt/esp-r/bin"
```