

## Installation:

### 1. Compiling QEMU

The qemu code included in the webpage comes as a part of the MARSS simulator ([http://marss86.org/~marss86/index.php/Getting\\_Started](http://marss86.org/~marss86/index.php/Getting_Started)). Compiling this source therefore requires the following steps.

#### i) *Setup Scons*

For compilation, the Scons compilation tool (version 1.2 or higher ) is required. Scons can be easily set up using standard software installation tools such as apt-get or yum.

#### ii) *Compilation*

Once Scons is set up go to the directory containing the source code of MARSS and issue the compilation command. For example

```
$ cd $MARSS
```

```
$ scons -Q
```

### 2. Clean Binaries

For cleaning up the compiled binaries, use

```
$ scons -Q -c
```

### 3. Applying the patch

To apply the patch, then first go to the **qemu** directory containing the source code of MARSS and then issue the patch command.

```
$ cd $MARSS/qemu
```

```
$ patch -p1 < deterministic.patch
```

## Running QEMU:

The deterministic Qemu can be run with the following options:

```
$ $MARSS/qemu/qemu-system-x86_64 -hda diskimage -net none -rtc clock=vm -nographic
```