Using The MATLAB Compiler
Linux Version

This document shows you how you can convert your MATLAB code into a standalone executable. It assumes that the code you are going to produce is to be run on a computer that has MATLAB and the the MATLAB compiler installed. These instructions are not suitable for producing programs to be transferred to computers that don't have the MATLAB complier installed. To do that, refer to the examples in the MATLAB Compiler documentation.

C Compiler

You need to install a compatible C compiler. There are links to the free GNU compilers on the Mathworks web site.

http://www.mathworks.co.uk/support/compilers/R2013b/index.html

Many Linux systems already have the compilers installed.
*On the Ubuntu system I used, GNU 4.3.4 (Compatible with R2013b) was available to install from the **Software Manager** in **YaST**.*

Mbuild

Next you need to inform MATLAB about the location of your C Compiler. Run MATLAB and enter the command :-

mbuild -setup

Choose the option (probably 1) that copies the default mbuildopts.sh.
The options file will be copied to ~/.matlab/mbuldopts.sh.

Each user needs to do this once.

Compiling A Mathworks Example

Make a work directory, and copy in the example Matlab program
/packages/MATLAB/R2013b/extern/examples/compiler/magicsquare.m

Obviously, if you have a different version of MATLAB or a different installation path, you will have to modify the path above.

Run MATLAB and change directory to the work directory you created above.
Then enter the command

mcc -m -v magicsquare.m

Then **WAIT**. This process takes time.

mcc	The MATLAB compiler.
-m	Standalone application.
-v	Verbose

This produces the executable file magicsquare. You don't run this directly. Instead you use a script called run_magicsquare.sh that will set all the library paths for you. Open a terminal window. Change directory to your work directory and enter the following.

./run_magicsquare.sh /packages/matlab/R2013b 5

Which displays a 5 by 5 magic square.

The second argument (**/packages/matlab/R2013b**) is the path to my MATLAB installation. You will need to modify this to the location where MATLAB is installed on your computer.

The example above is a very cut down version of an example in the MALAB documentation. To see the full documentation, go to

Help
MATLAB Compiler
Standalone Application

Another Example

This example shows how you would typically use the compiler to run code outside of MATLAB and save the data so that it can be imported into MATLAB.

```
function MyExample()

% Find sets of 4 numbers that add up to 64.

OUTPUT = [];   % Start of with an empty set

for A = 0:64
    for B = 0:64
        for C = 0:64
            for D = 0:64
                V = [ A B C D ];
                if sum(V) == 64
                    OUTPUT = [OUTPUT ; V];  %append V to OUTPUT
                end
            end
        end
    end
end
% Save the file for later inspection in MATLAB.
save output OUTPUT
```

Notice that the data produced by the program is saved to a file called output.mat at the bottom of the program. Compile the program.

mcc -mv -R -nodisplay MyExample.m

The option **-R** says the next option is for the runtime program. The runtime option **-nodisplay** says you don't need to open any graphics window. We are not using graphics so we don't need it. The choice is yours.

Then in a terminal, change directory to your work directory and enter

./run_MyExample.sh /packages/matlab/R2013b

Run MATLAB, change directory to your work directory and double click on **output.mat** to load the output data into MATLAB.