

Products (/)

Install the ARM cross compiler toolchain on your Linux Ubuntu PC

This article illustrates how to install on a Ubuntu Linux PC the complete toolchain to cross compile the Linux Kernel, the Linux device drivers, the Linux applications and the boot loader like as AT91Bootstrap and its derivatives like AcmeBoot and AriaBoot.

This procedure has been tested on:

- Ubuntu 18.04.4 LTS (amd64)
- Debian Buster 10 (amd64)

Install the Cross Compilers, utilities, etc.

Install the GCC, G++ cross compilers and support programs by typing:

```
sudo apt-get install libc6-armel-cross libc6-dev-armel-cross binutils-arm-linux-gnueabi libncurses5-dev build-essential bison flex libssl-dev bc
```

If you are using an Acqua (/acqua) or RoadRunner (/roadrunner) board:

```
sudo apt-get install gcc-arm-linux-gnueabi g++-arm-linux-gnueabi
```

If you are using an Arietta (/arietta), Aria (/aria) or FOX G20 board (/FOXG20):

```
sudo apt-get install gcc-arm-linux-gnueabi g++-arm-linux-gnueabi
```

Now you are ready to cross-compile on your PC all the source available for the Acme Boards based on Microchip MPUs.

Try the cross C compiler

Let's try to cross compile a Hello World example in C and running it on an Acme board.

This is the example:

```
#include "stdio.h"

int main(void) {
    printf("Hello world !\n");
    return 0;
}
```

Compile it by typing, if you are using an Arietta (/arietta), Aria (/aria) or FOX G20 board (/FOXG20):

```
arm-linux-gnueabi-gcc hello.c -o hello
```

or, if you are using an Acqua (/acqua) or RoadRunner (/roadrunner) board:



CM3-Panel

Panel PC based on Raspberry Compute Module 3 lite

[More info \(/CM3-PANEL\)](#)



(/CM3-HOME)

CM3-Home

Home Automation board for Raspberry Compute Module 3

[More info \(/CM3-HOME\)](#)

```
arm-linux-gnueabihf-gcc hello.c -o hello
```

As you can see we are using the ARM version of gcc just installed on your PC. It will generate an executable file for your Linux board.

Copy the executable file on the board via ssh:

```
scp hello root@[your_board_ip]:/root
```

Then open a command session on your board and run the example:

```
~# ./hello  
Hello world !
```

Try the cross C++ compiler

Let's try to cross compile a Hello World example in C++ and running it on an Acme board.

This is the example:

```
#include "iostream"  
  
using namespace std;  
  
int main(int argc, char *argv[]) {  
    cout << "Hello world !" << endl;  
    return 0;  
}
```

Compile it typing, if you are using an Arietta (/arietta), Aria (/aria) or FOX G20 board (/FOXG20):

```
arm-linux-gnueabi-g++ hello.cc -o hello
```

or, if you are using an Acqua (/acqua) or RoadRunner (/roadrunner) board:

```
arm-linux-gnueabihf-g++ hello.cc -o hello
```

As you can see we are using the ARM version of gcc just installed on your PC. It will generate an executable file for your Linux board.

Copy the executable file on the board via ssh:

```
scp hello root@[your_board_ip]:/root
```

Then open a command session on your board and run the example:

```
~# ./hello  
Hello world !
```

Greeting

Many thanks to Mark Richards for his help fixing bugs on this article.

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Github repositories: <https://github.com/tanzilli> (<https://github.com/tanzilli>) and <https://github.com/acmesystems> (<https://github.com/acmesystems>)

Telegram group dedicated to the Acme Systems boards: <https://t.me/acmesystemssrl> (<https://t.me/acmesystemssrl>)



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