

C++ Hello World in Linux

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Time Required: 60 minutes

We are going to learn how to compile and run a C++ program on Linux. You can follow the operational steps to compile a program from C++ to machine code.

This tutorial shows you how to compile a C/C++ program on Kali Linux using the GNU gcc/g++ compiler. These directions can be used on any Debian flavored Linux.

NOTE: Commands, filenames, and directories are case sensitive.

Common Linux Commands

sudo (runs a command as root)

if a (IP address)

ls (lists files or directories)

cd (change directories)

mkdir (makes directories)

rmdir (removes directories)

cp (copy file)

rm (delete file)

chmod (modify file and directory security)

grep (search text file for characters)

passwd (create or change password)

Hello C++ World

Kali Linux already has everything built into compile C++ programs using g++.

1. Create a directory and a sub directory to hold your C++ programs and your main HelloWorld program.

```
mkdir CPP
```

2. Type **ls** to confirm. You should see a **CPP** folder.

We are using CPP for the main directory to hold our C++ programs.

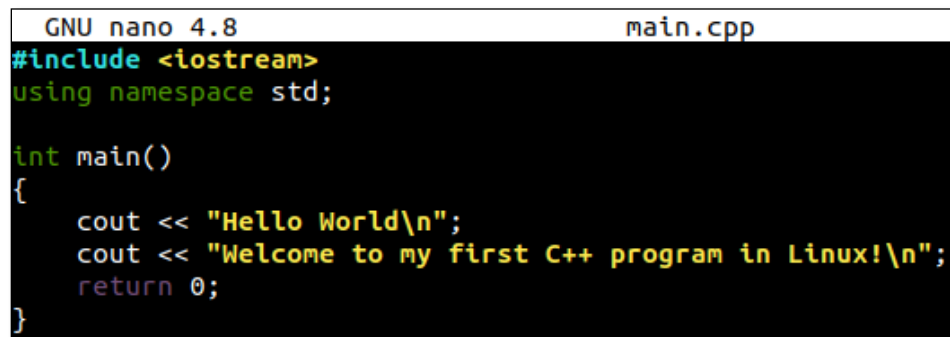
3. Change to the CPP folder.

```
cd CPP
```

Write the Code

We will be writing the code in a command line editor, nano.

1. At the terminal: **nano main.cpp**
2. Enter the following code.



```
GNU nano 4.8 main.cpp
#include <iostream>
using namespace std;

int main()
{
    cout << "Hello World\n";
    cout << "Welcome to my first C++ program in Linux!\n";
    return 0;
}
```

3. Press **CTRL S** to save the file.
4. Press Enter to confirm.
5. Press **CTRL X** to **Exit**.
6. Type cat main.cpp to confirm.

```
bill@bill-VirtualBox:~/CPP/HelloWorld$ cat main.cpp
#include <iostream>
using namespace std;

int main()
{
    cout << "Hello World\n";
    cout << "Welcome to my first C++ program in Linux!\n";
    return 0;
}
```

Compile and Run the Program

Linux does not care about the extension of a file. It cares about what kind of file it is. HelloWorld is a valid executable file name in Linux

1. To compile the program: run the following command. If there are any errors, check your main.cpp program.

```
g++ -Wall main.cpp -o HelloWorld
# Explanation of arguments
# g++          # g++ C+ compiler (GNU Compiler Collection)
# -Wall        # Show all warnings
# main.cpp     # Name of code file
# -o           # Filename of executable file
```

2. To execute your program: run the following command.

```
./HelloWorld
```

Congratulations! You created your first C++ program in Linux!

Assignment Submission

Attach screenshot files of the following in the Blackboard assignment submission.

1. A screenshot of your code in nano.
2. A screenshot of your program running.