





Intel[®] Edison Tutorial: Introduction to Vim







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Revision history		
Version	Date	Comment
1.0	6/14/2016	Modified old tutorial version







Introduction

In this tutorial, you will:

- 1. Install Vim via OPKG
- 2. Learn about Vim and some useful Vim shortcuts

List of Required Materials and Equipment

- 1. 1x Intel Edison Kit
- 2. 2x USB 2.0 A-Male to Micro B Cable (micro USB cable)
- 3. 1x powered USB hub **OR** an external power supply
- 4. 1x personal computer
- 5. Access to a network with an internet connection







Introduction

What Is Vim?

Vim is a highly configurable text editor built to enable efficient text editing. It is an improved version of the vi editor distributed with most UNIX systems. Vim is often called a "programmer's editor," and so useful for programming that many consider it an entire IDE. It's not just for programmers, though. Vim is perfect for all kinds of text editing, from composing email to editing configuration files.

http://www.vim.org/

Installation

1. Access the shell of your Intel Edison.

For more information, please refer to the document labelled *Intel Edison Tutorial – Introduction, Shell Access and SFTP*.

2. Make sure you have an internet connection and have correctly initialized the opkg software onboard your Intel Edison.

For more information regarding the set up process of OPKG please refer to the document labelled *Intel Edison Tutorial – Introduction to OPKG*.

3. Install Vim by issuing the below command:

\$ opkg install vim

```
root@ucla_iot:~# opkg install vim
Installing vim (7.4.481-r0) on root.
Downloading http://repo.opkg.net/edison/repo/core2-32/vim_7.4.481-r0_core2-32.ipk.
package vim suggests installing diffutils
Configuring vim.
update-alternatives: Linking //bin/vi to /usr/bin/vim
```

Figure 1: Standard output from opkg on successful install of Vim







Vim Basics

In this section, we will write a basic "hello world.c" file.

The contents of the file are discussed further in the document labelled *An introduction to C*.

For now, focus on learning the commands to interact with Vim.

1. First, open a file by issuing the below command:

\$ vi hello world.c



This command will try to first open an existing file with the name "hello world.c".

If no existing file is found, a file named "hello world.c" will be created.

2. When you press [Enter], your screen should look something like this

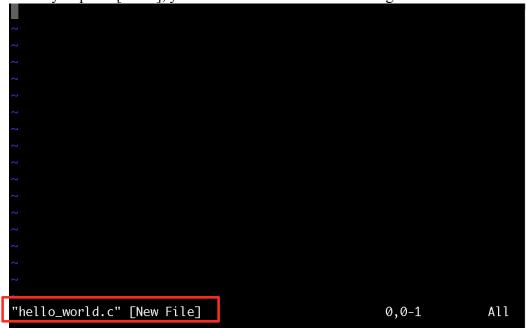


Figure 3: What your terminal session should resemble after opening a file in Vim







3. If you try to type, nothing will appear. This is because Vim is currently in **command** mode. To type, press [i]. This is called **insert mode**.

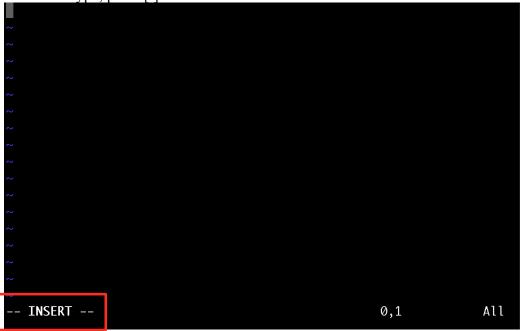


Figure 4: Successfully entering insert mode

4. Once you are in insert mode, type the following into Vim. Notice how the editor automatically colors your code for you.

Figure 5: Adding content to the file







5. To save the file, press [Esc] followed by ":wq" and then press [Enter]

```
#include <stdio.h>
int main()
        printf("Hello World!\n");
```

Figure 6: Save and quit the file

If ":wq" does not appear at the bottom of your screen as highlighted, something went wrong. Press "esc" a few times and try typing ":wq" again.

If you accidentally pressed **ctrl-S** to save a file, you will notice Vim becomes unresponsive. To interact with Vim again, press ctrl-Q.

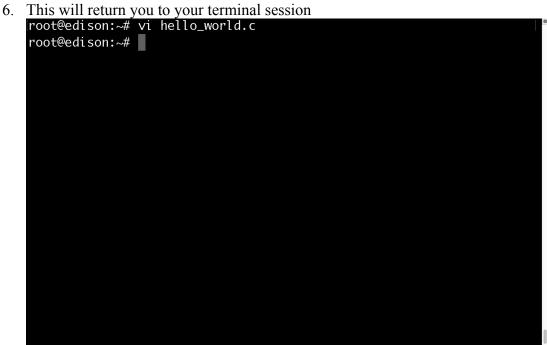


Figure 7: The terminal session should return to the shell after successful save and quit







Tips and Tricks

Undo and Redo

- 1. To undo, press [Esc] and press [U].
- 2. To redo, press [Esc] and press [Ctrl]+[Shift]+[R].

Copy and Pasting

To copy and paste something is not like most editors you have likely used in the past. For example, the typical ctrl-C and ctrl-V commands will fail in Vim for Windows users.

However, Vim does offer convenient ways to perform copy pasting which will be covered below. It is important to note that there are two sections, one for copy pasting text internally within the editor, and another section showing how to copy paste text from an online source to Vim

Internally

1. Open the "hello_world.c" file that we created earlier



Figure 8: Opening the file hello world.c in Vim







2. Move your cursor to the line that says "**printf(...**". You can do this by pressing the arrow keys.

DO NOT PRESS [i]. Ensure the Vim editor is NOT in insert mode. Press [Esc] to leave insert mode and enter command mode.

```
#include <stdio.h>
int main()
        printf("Hello World!\n");
"hello_world.c" 6L, 62C
                                                    5,26-33
                                                                   All
```

Figure 9: Terminal session screen after opening the file in Vim

3. Press [Y] twice. "y" stands for the first letter of "yank", or "copy". (unfortunately there is no visual stimulus to indicate the copy was successful)

```
4. Press [P] once to paste the line #include <stdio.h>
    int main()
              printf("Hello World!\n");
              printf("Hello World!\n");
                                                                     6,2-9
                                                                                      All
```

Figure 10: The contents of the file after pasting the copied line







5. To delete a line type press [D] twice. This is the "cut" operation, meaning that if you delete a line you can paste it elsewhere.

Figure 11: File contents performing the cut/delete command on a line

6. Since we have the line currently in our "clipboard", we can paste it into the editor.

Each time you press [P], the line will be pasted again.

Press it **four** times to get the screen below

Figure 12: Pasting a line multiple times in Vim







7. Edit the file such that it has the same contents as the below screenshot

```
#include <stdio.h>
int main()

printf("Hello World! 0\n");
 printf("Hello World! 1\n");
 printf("Hello World! 2\n");
 printf("Hello World! 3\n");
 printf("Hello World! 4\n");
}
```

Figure 13: What the file should look like after you have finished editing it

8. To copy multiple lines at once, press [Y] followed by the number of lines *below the current line* that you would like to copy followed by the down arrow key.

For example, if you would like to copy 3 lines, press [Y], [2] followed by the down arrow key. This will copy lines 0, 1, 2.

Use the arrow keys to move the solid rectangle indicating the cursor to the semicolon on the line saying "Hello World! 4\n" and press **p**

The below image should be the result

Figure 14: File contents after copying and pasting 3 lines







9. Similarly, multiple lines can be deleted this way. Put your cursor at the line with "hello world! 3\n" and press [D], [2] followed by the down arrow key

```
#include <stdio.h>
int main()
{
    printf("Hello World! 0\n");
    printf("Hello World! 1\n");
    printf("Hello World! 2\n");
    printf("Hello World! 3\n");
    printf("Hello World! 4\n");
    printf("Hello World! 5\n");
    printf("Hello World! 6\n");
    printf("Hello World! 7\n");
}

3 more lines

12,28-35 All
```

Figure 15: File contents before deleting multiple lines at once

10. The below image shows what should happen after the keystrokes of step 8

```
#include <stdio.h>
int main()
{
         printf("Hello World! 0\n");
         printf("Hello World! 1\n");
         printf("Hello World! 2\n");
         printf("Hello World! 6\n");
         printf("Hello World! 7\n");
}
```

Figure 16: File contents after deleting multiple lines at once







Externally - Windows

To copy paste on a Windows operating system, you may have previously used **ctrl-C** and **ctrl-V**. However, these keystrokes generate **interrupts** on many operating systems, including Linux. As such, pressing **ctrl-C** or **ctrl-V** may cause your Vim program or other Linux based software to malfunction.

To successfully copy and paste code from online, follow the below steps.

- 1. Access the shell on your Intel Edison via SSH. The following steps may not work on the PuTTy application.
- 2. Copy some text from any website as you normally would. The content of what you have copied should be some C code from any online source, it does not have to match figure below.

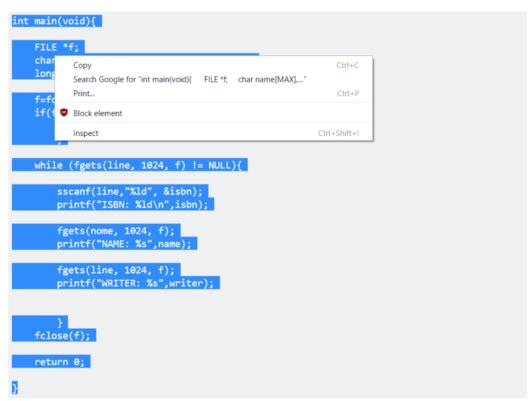


Figure 17: Online source that you may wish to copy and paste into Vim

3. Open a new file called "hello world external.c".

\$ vi hello world external.c

- 4. Press [i] to enter insert mode.
- 5. Right click where the cursor is.
- 6. Click "paste" from the drop down menu







7. Notice how the pasted text has indentation issues.

Figure 18: Pasting text from online sources may cause indentation issues

- 8. To fix this, press [Esc].
- 9. Move the cursor to the top of the file.
- 10. Make sure you are still in **command-mode**

Press [9] four times Press [=] two times

This command tells Vim to automatically indent the next 9999 lines.







```
int main(void){
        FILE *f;
        char name(MAX), writer(MAX), line(MAX);
        long isbn;
        f=fopen("path.txt","r");
        if(f == NULL){
                return 0;
        while (fgets(line, 1024, f) != NULL){
                sscanf(line,"%ld", &isbn);
                printf("ISBN: %ld\n",isbn);
                fgets(nome, 1024, f);
                printf("NAME: %s",name);
                fgets(line, 1024, f);
                printf("WRITER: %s", writer);
        fclose(f);
        return 0;
```

Figure 19: File contents after issuing the automatic indent command to Vim







Externally - Mac

Copy and pasting between your Intel Edison and online sources works as you would normally copy and paste text.

Simply press \mathbb{H} -C to copy and press \mathbb{H} -V to paste.

Ensure you are in insert mode before pasting into Vim or you may create issues within your file.

If your file has indentation issues, try to issue the automatic indentation command.

Type the number of line you would like to indent. For example, if you would like to indent 12 lines, press [1], [2]. Then, press [=] twice.

More tips and tricks

Vim has very powerful capabilities, all of which cannot be covered in one document.

Please examine the below resources if you would like additional help in familiarizing yourself with Vim.

- http://www.openvim.com/
- http://vim.wikia.com/wiki/Tutorial
- https://linuxconfig.org/vim-tutorial
- http://vim-adventures.com/