**Installation**

CraftBukkit is a version of the Minecraft server software which allows easy addition of 'Mods' and extensions to Minecraft. ScriptCraft is a 'Mod' for use with CraftBukkit. Adding Mods to Minecraft can be difficult but CraftBukkit makes it easy. Follow these steps to Install ScriptCraft on your computer...

## Windows

1. Download CraftBukkit's latest recommended build: [CraftBukkit - Recommended Build](http://dl.bukkit.org/latest-rb/craftbukkit.jar)
2. Put the .jar file in the directory you'd like the server to run from e.g. C:\Minecraft
3. Open a text editor such as Notepad and type:

java -Xms1024M -Xmx1024M -jar craftbukkit.jar -o true PAUSE

1. Save the document as run.bat (not as a .txt) in the same directory as craftbukkit.jar.
2. **Note**: With some programs such as Notepad, it may try saving as run.bat.txt. When saving to a file name, put the name in quotes: "run.bat"
3. Double click run.bat and you're away!
4. If you see "'Java' is not recognized as an internal or external command, operable program or batch file." then you need to reinstall Java. Still get this error? Follow this [guide](http://www.java.com/en/download/help/path.xml) (<http://www.java.com/en/download/help/path.xml>) to adding Java to your system path.
5. Once you know you can start the server OK shut it down again, issue the "stop" command in console.
6. Navigate to your Server directory and rename the “world” folder to “world\_saved”. The world folder is where your land is stored.
7. In the server directory open the file called **server.properties**, we are going to make some changes so the server runs in the way we want it to run. In the file change the following:
   1. **spawn\_monsters** – change the value to false
   2. **spawn\_animals** – change to false
   3. **gamemode** – change from 0 (survival) to 1 (creative)
   4. **level\_type** – change from DEFAULT to FLAT
8. [Download the ScriptCraft Mod](http://walterhiggins.net/blog/files/scriptcraft/) (http://walterhiggins.net/blog/files/scriptcraft/ ) Then copy it to the craftbukkit/plugins folder you created in step 1.
9. Start the CraftBukkit server again (run.bat file from step 6)
10. In the CraftBukkit command window type “**op *{your\_username}”*** and hit enter, replacing {your\_username} with your own minecraft username. This will give youoperator access meaning you can perform more commands than are normally available in Minecraft.
11. In the CraftBukkit command window type js 1 + 1 and hit enter. You should see> 2 .

**Learning Javascript**

To begin creating cool stuff in Minecraft using ScriptCraft, you don't *have* to know much JavaScript. ScriptCraft comes with lots of functions to help you create buildings of any size, and lets you experiment while you play. However, as you learn Javascript you will be able to create cooler stuff in Minecraft - not just buildings, you'll be able to add new rules and items to the game - even create mini-games for you and your friends. If you want to get started learning JavaScript, check out this [fun Javascript Tutorial](http://www.codecademy.com/) at <http://www.codecademy.com/>

If you want to dive right in to ScriptCraft, read on...

**First Steps**

If you don't already know Javascript, don't worry, you'll learn a little about Programming and Javascript along the way. You've set up a Minecraft server and are ready to connect ...

1. Launch Minecraft (keep the Bukkit Command window open).
2. Click 'Multi-Player'
3. Click 'Add Server'
4. Type any name you like in the name field then type localhost in the address field.localhost is a special internet address that points to your own computer.
5. Click 'Join Server' to join the craftbukkit server.
6. Once you've joined the game, press the / key located at the bottom right of your keyboard. A prompt will appear. Type the following then press enter: js 1 + 1The number 2 should be displayed.

... Well Done! You've just confirmed you can run Javascript code from within the Minecraft Console.

**Variables**

A variable is how you name something for the computer (and you the programmer) to remember. You create a new variable in Javascript using the var keyword...

/js var location = "EMC"

... creates a new variable called location and stores the text EMC in it. Now the computer has a new item in its memory called location. We can use that name like this...

/js echo( location )

... and the following is displayed...

EMC

...You might be wondering where the "" (called double-quotes) went. When telling the computer to store some text, you have to put " (that's the double-quote character - press Shift+2) at the start and end of the text. The computer doesn't store these quote characters, only the text between them. The computer will store the variables while the Minecraft Server is running. Repeat the last command you entered by pressing the /key then the UP arrow key on your keyboard, then pressing enter. You can repeat that statement as many times as you like and the computer will always display the same value. You can change the value like this...

/js location = "CoderDojo"

...notice this time I didn't use the var keyword. I didn't need to. The var keyword is only needed when you **first** create the variable. Now execute this command...

/js echo( location )

...and it displays...

CoderDojo

Variables can be created and changed easily in Javascript. Along with the variables you'll create in your in-game commands and scripts, there are handy variables created for you by ScriptCraft. One such variable is self, it contains information about the current player...

/js echo ( self )

... displays the following...

CraftPlayer{name=yourname}

the message displayed will be different for every player.

**Functions**

ScriptCraft comes with a couple of extra functions not normally found in Javascript. These functions will help you build new structures and buildings which would otherwise take hours to build by hand. Before looking at the building functions let's look at the echo() function.

echo() - as its name implies - will echo back at you whatever you tell it. For example, type ...

/js echo('Hello')

... and the game will display...

Hello

... type ...

/js echo( 5 + 7 )

... and the game will display...

12

... The echo() function will display anything you tell it to - Text, Numbers and other types...

/js echo( new Date() )

... prints today's date. If the statement above looks confusing - don't worry - *new Date()* creates a new date **object**...

Tue Jan 08 2013 20:53:37 GMT-0000 (GMT)

There are many other functions in Javascript all of which you can also use in Minecraft. For example...

/js Math.max( 6, 11 )

... returns the larger of the 2 numbers you give it (max is short for maximum). While...

/js Math.min( 6, 11 )

... returns the smaller of the 2 numbers. That's another thing - functions can return stuff. You can store the result of a function (what it returns) in a variable like this...

/js var biggest = Math.max( 6, 11 )

... Now type...

/js biggest

... Not all Javascript functions return data but most do. As well as the functions provided to you by the Javascript Language and ScriptCraft, you can write your own functions like this...

/js function whatTimeIsIt () { return new Date() }

... Here you've created a new function called whatTimeIsIt and told the function it should return a new Date object every time it's called. You'll notice the above statement didn't actually do anything - it certainly didn't display the current time. That's because all you've done is is say what the function should do when it's called, you haven't called it yet. To call the function...

/js whatTimeIsIt()

... The current time is displayed. Congrats! You've just written your first Javascript function - you're well on your way to becoming a Minecraft Modder :-) There are many functions for working with Text, numbers and dates in Javascript...

/js Math.random()

... prints out a random number every time you call it. Try it! Then press the / key then the UP Arrow key to repeat the last statement in your in-game console. You'll see the number displayed is different each time. Think of Math.random() as a Dice with many many sides. You can rely on it to never return the same value twice.