Step By Step

Compiling MegaPirateNG and Multiwii

by

Quadframes.co.uk

Some of the programs that you will need and were to get them.

- 1. Arduino you can download from here
- 2. MegaPirateNG you can download from here
- 3. MultiWii you can download from here

These are the programs that you will need if using MegaPirateNG or MultiWii on your CRIUS ALL IN ONE PRO.

once you have downloaded and installed Arduino when you open it will look like this



please make sure that you have selected the correct board type as shown here under Tools-



Now select the serial port this is normally selected automatically for you.

Now the compile button, when you have finished the edits to the code this is the button to click to get you code compiled and uploaded to you board

💿 sketch_jul08a Arduino 1.0.1	- • ×
File Edit Sketch Tools Help	
	ø.
sketch_jul88a	
Compile and upload	•
•	•
1 Arduino Mega 2560 or M	ega ADK on COM21

Ok now that we have got Arduino sorted let's move onto Compiling MegaPirateNG. The way that I do this is make a folder called MegaPirateNG download the latest copy of MegaPirateNG into this folder, next unzip MegaPirateNG_2.6 r3 and you will have a folder like this

MegaPirateNG_2.6_R3	0
inside this folder looks like this	
Name	
퉬 ArduCopter	1
퉬 libraries	1
퉬 tools	1
📄 boards.txt	1
boards_for_arduino_1.0.txt	1
release_notes.txt	1
illiar release_notes_BlackVortex.txt	1

ok now we have to select the Libraries folder and copy this to the folder that we have Arduino in replacing the files when asked. Now that we have done this we can now move onto the editing the code so that we can upload to the board.

Open Arduino

💿 sketch_jul08a Arduino 1.0.1	
File Edit Sketch Tools Help	
	<u>P</u>
sketch_jul08a	X
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•	4
1	Arduino Mega 2560 or Mega ADK on COM21

then go to file open and direct it to open the MegaPirateNG as seen here

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now select the ArduCopter.pde file as see here.

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cent Places Desktop	gitignore APM_Config.h APM_Config.mavlink.bil.b	30/09/2011 11:50			<u> </u>	
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	Camera.pde	14/06/2012 21:29	PDE File	2 KB		
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	ile name: Arth Conter ode		00000			

you should now have this screen



close the Arduino behind so that you just have the one with the code loaded.



you will notice that there are tab's along the top the only one that we have to make changes to is the APM_Config.h and as you can see buy the picture above that this is the second tab along just click on this to edit it.

These are the parts of the code that we will need to change (sensor board)



next is the code changes for if you are using a GPS

// For BlackVortex, just set PIRATES_SENSOR_BOARD as PIRATES_BLACKVORTEX, GPS will select automatically
#define GPS_PROTOCOL GPS_PROTOCOL_NONE
/*

```
GPS_PROTOCOL_NONE without GPS
GPS_PROTOCOL_NMEA
GPS_PROTOCOL_SIRF
GPS_PROTOCOL_UBLOX
GPS_PROTOCOL_IMU
GPS_PROTOCOL_MTK
GPS_PROTOCOL_HIL
GPS_PROTOCOL_MTK16
GPS_PROTOCOL_AUTO auto select GPS
GPS_PROTOCOL_BLACKVORTEX
```

*/

if you are not sure what to do here always try this one 1st

```
NSOR BOARD as PIRATES BLACKVORTEX, GPS will select automatically
// For BlackVortex, ju
#define GPS_PROTOCOL_GPS_PROTOCOL_AUTO
/*
        GPS_PROTOCOL_NONE
                                without GPS
        GPS_PROTOCOL_NMEA
        GPS_PROTOCOL_SIRF
        GPS_PROTOCOL_UBLOX
        GPS_PROTOCOL_IMU
       GPS_PROTOCOL_MTK
        GPS_PROTOCOL_HIL
        GPS_PROTOCOL_MTK16
        GPS_PROTOCOL_AUTO
                                auto select GPS
        GPS PROTOCOL UBLOX I2C
        GPS_PROTOCOL_BLACKVORTEX
*/
```

if you know what GPS you are using then make the changes to suit your GPS.

Next changes are the frame config as seen here

```
#define FRAME_CONFIG QUAD_FRAME
/*
        QUAD_FRAME
        TRI FRAME
        HEXA FRAME
        Y6 FRAME
        OCTA FRAME
        OCTA_QUAD_FRAME
        HELI FRAME
*/
#define FRAME_ORIENTATION X_FRAME
/*
        PLUS_FRAME
        X FRAME
        V FRAME
*7
# define CH7 ODTTOM
                                 CH7 DO MOTHING
```

as seen in the picture above the default is QUAD_FAME and its Orientation is X_FRAME if you what a diff just change the code to suit, I hope that this helps in understanding the code a bit more.

If using Multiwii code

Code changes and compiling Multiwii

download Multiwii from the link above and unzip

Open Arduino

💿 sketch_jul08a Arduino 1.0.1	- • • • •
File Edit Sketch Tools Help	
	P
sketch_jul08a	
	^
•	•
1	Arduino Mega 2580 or Mega ADK on COM21

Then file open, and select the folder that you have unzipped your Multiwii as seen here



select MultiWii_2_0 and you will see this, please select the file called MultiWii_2_0.ino (your version could be different)

rdu	ino sketch	
in:	MultiWii_2_0	G
	Name	Di
	config.h	25
s	def.h	25
	EEPROM.ino	25
	EEPROM.pde	25
	GPS.ino	25
	GPS.pde	25
	IMU.ino	25
	IMU.pde	25
	LCD.ino	25
	LCD.pde	25
	LED.ino	25
	🖻 LED.pde	25
	MultiWii_2_0.ino	25
	Output.ino	25
	Output.pde	25
	RX.ino	25
	🖻 RX.pde	25
	Sensors.ino	25
	Sensors.pde	25
	Serial.ino	25
	Serial.pde	25

close the opened Arduino and then you should have the following

MultiWii_2_0 Arduino	1.0.1						State Street	and the second	-				
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/*													
fultiWiiCopter by A sww.multiwii.com farch 2012 V2.0 This program is fr it under the terms the Free Software : any later version. */	lexandre Dubus 0 ee software: you of the GNU Gene Foundation, eith see <http: td="" www<=""><td>ı can redi eral Publi her versio s.gnu.org/</td><td>istribute it ic License s m 3 of the /licenses/></td><td>: and/or as publis License,</td><td>modify Whed by or</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></http:>	ı can redi eral Publi her versio s.gnu.org/	istribute it ic License s m 3 of the /licenses/>	: and/or as publis License,	modify Whed by or								
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idefine DOLL	as												
idefine PITCH	1												
#define YAW	2												
define THROTTLE	3												
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#define BOXMAG	2												
#define BOXCAMSTAB	3			_									

please note the tabs along the top. 1st change that we are going to make are in the def.h tab the last one at the top on the right. when opended you need to scroll down until you see this

```
//please submit any correction to this list.
#if define([FFIRUV1)
#define ITG3200
#define BMA180
#define BMA180
#define ACC_ORIENTATION(X, Y, Z) (accADC[ROLL] = -X; accADC[PITCH] = -Y; accADC[YAW] = -Z;)
#define GVR0_ORIENTATION(X, Y, Z) (gyroADC[ROLL] = X; magADC[PITCH] = Y; magADC[YAW] = -Z;)
#define ITG3200_ADDFESS 0x80
#define ITG3200_ADDFESS 0x80
#define BMA180
#define
```

you need to add this code to under *//please submit any correction to this list.* to look like this

```
//please submit any correction to this list.
#if defined(CRIUS_AI0_PR0_V1)
#define MPU6050
#define HMC5883
#define MS561101BA
#define ACC_ORIENTATION(X, Y, Z) {accADC[ROLL] = -X; accADC[PITCH] = -Y; accADC[YAW] = Z;}
#define GYR0_ORIENTATION(X, Y, Z) {gyroADC[ROLL] = Y; gyroADC[PITCH] = -X; gyroADC[YAW] = -Z;}
#define MAG_ORIENTATION(X, Y, Z) {magADC[ROLL] = X; magADC[PITCH] = Y; magADC[YAW] = -Z;}
#define MPU6050 EN_I2C BYPASS // MAG connected to the AUX I2C bus of MPU6050
#undef INTERNAL_I2C_PULLUPS
#endif
#if defined(FFIMUvl)
   #define ITG3200
  #define BMA180
   #define BMP085
   #define HMC5843
  #define ACC_ORIENTATION(X, Y, Z) {accADC[ROLL] = -X; accADC[PITCH] = -Y; accADC[YAW] = Z;}
  #define GYR0_ORIENTATION(X, Y, Z) {gyroADC[ROLL] = Y; gyroADC[PITCH] = -X; gyroADC[YAW] = -Z;}
#define MAG_ORIENTATION(X, Y, Z) {magADC[ROLL] = X; magADC[PITCH] = Y; magADC[YAW] = -Z;}
   #define BMA180_ADDRESS 0x80
   HARENNA TTERRA ADDDDER AVDA
Now we need to open the config.h tab and add the following code
                                                                                #define
CRIUS AIO PRO V1 // Crius Multiwii AIO PRO v1.0
Please add this to the bottom of this list under //#define CRIUS_SE
                                                                               // Crius MultiWii SE
//#define ALLINONE
                         // full FC board or standalone 9D0F+baro board from CSG_EU
 //#define AEROQUADSHIELDv2
//#define ATAVRSBIN1
                        // Atmel 9DOF (Contribution by EOSBandi), requires 3.3V power.
 //#define SIRIUS
                         // Sirius Navigator IMU
                                                                                         <- confirmed by Alex
//#define SIRIUS600
                         // Sirius Navigator IMU using the WMP for the gyro
                         // Jussi's MiniWii Flight Controller
//#define MINIWII
 //#define CITRUSv2_1
                         // CITRUS from qcrc.ca
 //#define CHERRY6D0Fvl 0
                        // Drotek 10DOF with ITG3200, BMA180, HMC5883, BMP085, w or w/o LLC
//#define DROTEK 10DOF
//#define DROTEK_10D0F_MS // Drotek 10D0F with ITG3200, BMA180, HMC5883, MS5611, LLC
 //#define DROTEK 6D0Fv2 // Drotek 6D0F v2
//#define DROTEK 6DOF MPU // Drotek 6DOF with MPU6050
//#define MONGOOSE1_0
                        // mongoose 1.0
                                         http://www.fuzzydrone.org/
                         // Crius MultiWii Lite
 //#define CRIUS LITE
 //#define CRIUS SE
                         // Crius MultiWii SE
as seen here
//#define ATAVRSBIN1
                         // Atmel 9DOF (Contribution by EOSBandi). requires 3.3V power.
//#define SIRIUS
                         // Sirius Navigator IMU
                                                                                         <- confirmed by Alex
//#define SIRIUS600
                         // Sirius Navigator IMU using the WMP for the gyro
                         // Jussi's MiniWii Flight Controller
//#define MINIWII
//#define CITRUSv2 1
                         // CITRUS from gcrc.ca
//#define CHERRY6D0Fv1 0
                        // Drotek 10DOF with ITG3200, BMA180, HMC5883, BMP085, w or w/o LLC
//#define DROTEK 10DOF
//#define DROTEK_10DOF_MS // Drotek 10DOF with ITG3200, BMA180, HMC5883, MS5611, LLC
//#define DROTEK_6D0Fv2 // Drotek 6D0F v2
//#define DROTEK_6DOF_MPU // Drotek 6DOF with MPU6050
```

all done.

//#define MONGOOSE1_0
//#define CRIUS_LITE

//#define CRIUS SE

now you just have to make the changes to the code to suit your board config ect, ect.

// mongoose 1.0 http://www.fuzzydrone.org/

// Crius MultiWii Lite

// Crius MultiWii SE

#define CRIUS AIO PRO V1 // Crius Multiwii AIO PRO v1.0