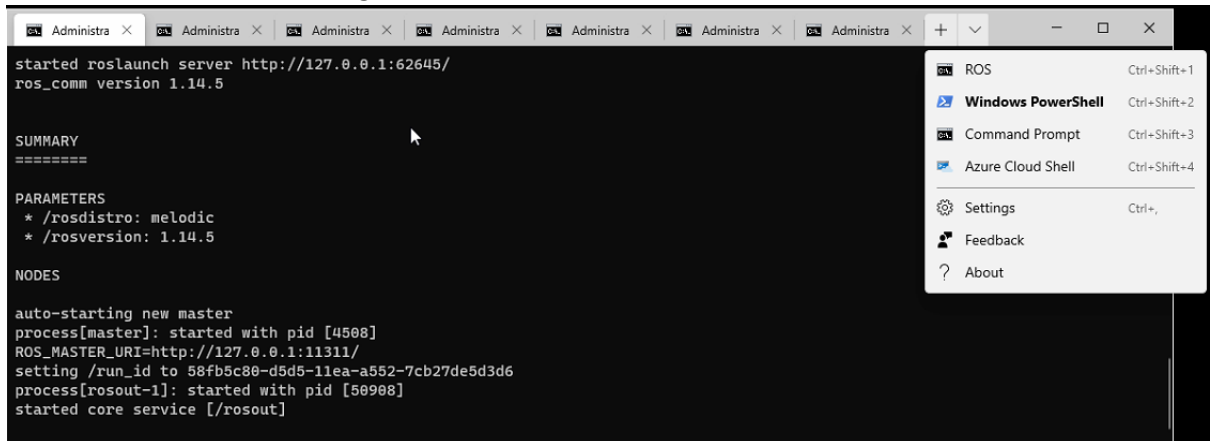


How to run AC and the vehicle with ROS environment using a controller or the AI

- 1) There are already some Window terminals utilized to launch the scripts needed for the ros environment. To open another terminal in a new tab select ROS from the '+' list menu. Be sure that roscore is running before AssettoCorsa.



- 2) Select Main Menu



- 3) Select Drive. For the moment online the quick race is working autonomously or using the AC AI. In the menu you can adjust the number of opponents, their strength and a lot of other settings.



- 4) In the following menu before the race begin or during the race pushing ESC, you can run all the script needed.

QUICK RACE 19L

SESSION INFORMATION

⌚ QUICK RACE not started

📶 track grip: 100 %

🕒 time: 10:00

🌡️ air: 26°C 🌬️ wind: 2 km/h

🛣️ asphalt: 34°C

➡️ single session

SESSION CONTROL

🔄 Restart Session ⏭️ Skip Session 🚪 Exit

DRIVER	CAR	TYRE	LAPS	TOTAL	GAP
1. 🇧🇷 Berry Gomes	7	Formula Lights Ova	C	0	--:--:--
2. 🇮🇪 Martin Fleming	13	Formula Lights Ova	C	0	--:--:--
3. 🇩🇪 Thomas Leitner	9	Formula Lights Ova	C	0	--:--:--
4. 🇮🇹 euroracing	3	Formula Lights Ova	C	0	--:--:--
5. 🇺🇸 Kyle Johnson	10	Formula Lights Ova	C	0	--:--:--
6. 🇮🇹 Ales Onginc	12	Formula Lights Ova	C	0	--:--:--
7. 🇮🇹 Luca Rossi	14	Formula Lights Ova	C	0	--:--:--
8. 🇮🇹 Freddy Moore	15	Formula Lights Ova	C	0	--:--:--
9. 🇮🇹 Andy Prost	16	Formula Lights Ova	C	0	--:--:--
10. 🇮🇹 Ty Brown	17	Formula Lights Ova	C	0	--:--:--
11. 🇩🇪 Erlend Braband	7	Formula Lights Ova	C	0	--:--:--
12. 🇮🇹 Max Rowe	13	Formula Lights Ova	C	0	--:--:--
13. 🇮🇹 Chris Smith	9	Formula Lights Ova	C	0	--:--:--
14. 🇮🇹 Cristian Alessi	10	Formula Lights Ova	C	0	--:--:--
15. 🇮🇹 Jere Zanetti	12	Formula Lights Ova	C	0	--:--:--
16. 🇮🇹 Luciano Molina	14	Formula Lights Ova	C	0	--:--:--
17. 🇮🇹 Aiden Damiani	15	Formula Lights Ova	C	0	--:--:--
18. 🇮🇹 Federico Jimenez	16	Formula Lights Ova	C	0	--:--:--
19. 🇮🇹 Carlo Giannini	17	Formula Lights Ova	C	0	--:--:--
20. 🇮🇹 Dean Walther	7	Formula Lights Ova	C	0	--:--:--
21. 🇮🇹 Eleuterio Tiffet	13	Formula Lights Ova	C	0	--:--:--
22. 🇮🇹 Joy Vasquez	9	Formula Lights Ova	C	0	--:--:--
23. 🇮🇹 Renato Ramires	10	Formula Lights Ova	C	0	--:--:--
24. 🇮🇹 Brand Messner	12	Formula Lights Ova	C	0	--:--:--
25. 🇮🇹 Brenton Gaddis	14	Formula Lights Ova	C	0	--:--:--
26. 🇮🇹 Donato Border	15	Formula Lights Ova	C	0	--:--:--
27. 🇯🇵 Shaun Akiyama	16	Formula Lights Ova	C	0	--:--:--
28. 🇫🇮 Olavi Virtanen	17	Formula Lights Ova	C	0	--:--:--

Quick Race

ENTRY LIST **TIME TABLE**



- 5) Run windows_sender.py script (using python windows_sender.py or rosrn w_send windows_sender.py) to receive the data from the sim and send it to ros in the defined structures and messages.

```
pos opp: [733.4326782226562, 8.772505760192871, 216.03575134277344]
yaw opp: -1.53870069981
pos opp: [59.21474838256836, 9.80937671661377, -366.6310729980469]
yaw opp: -1.53870069981
pos opp: [299.8605651855469, 9.460204124450684, -367.6484680175781]
yaw opp: -1.53870069981
pos opp: [334.23883056640625, 9.396788597106934, -366.0903625488281]
[INFO] [1596491487.438000]: Exception: Mon Aug 3 23:51:27 2020
Traceback (most recent call last):
  File "windows_sender.py", line 159, in <module>
    inSock = sock.recv(32).decode()
error: [Errno 10054] An existing connection was forcibly closed by the remote host

[INFO] [1596491487.440000]: Error parsing data

C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\w_send\src>
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\w_send\src>
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\w_send\src>python windows_sender.py
```

- 6) Run the rcv.py script if you want to drive autonomously the car. The script receive the data from the control_output_data topic, published by the controllers, and drive the car passing steering angle and drive commands.

```
[INFO] [1596477938.988000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.991000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.993000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.995000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.996000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.998000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477938.999000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477939.001000]: Setting vJoy to [0,0.212553405762,0.984384486062]
[INFO] [1596477939.002000]: Setting vJoy to [0,0.212553405762,0.984384486062]
Terminate batch job (Y/N)?
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\receiver\src>rcv.py was unexpected at this time.
^C
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\receiver\src>rosrun receiver rcv.py
Terminate batch job (Y/N)?
^C
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\receiver\src>rosrun receiver rcv.py
Terminate batch job (Y/N)?
^C
C:\Users\pburgio\Desktop\ac_workspace\src\assetto-corsa-datawrapper\receiver\src>rosrun receiver rcv.py
```

- 7) To run a controller, launch one of the scripts inside the controller/src folder. For further details read [here](#).

```
CURRENT SPEED 38.1276512146
TARGET SPEED 37.7733955383
CURRENT ACCEL -0.212553405762
LookAhead distance ----> 22.2510604858
-----ACTUAL TRACKING ERROR: 0.03886025028817769
-----MAX TRACKING ERROR: 1.9413785255397793
-----LAST LAP ERROR: 0
-----LAST LAP TIME: 0
TIME: 158.999919891

C:\Users\pburgio\Desktop\ac_workspace\src\controller\src>
C:\Users\pburgio\Desktop\ac_workspace\src\controller\src>
C:\Users\pburgio\Desktop\ac_workspace\src\controller\src>
C:\Users\pburgio\Desktop\ac_workspace\src\controller\src>python ros_pp_indy.py
```

- 8) Send the following message to let the car move using the controller:

```
*****  
** Visual Studio 2019 Developer Command Prompt v16.6.1  
** Copyright (c) 2020 Microsoft Corporation  
*****  
  
C:\Users\pburgio\Desktop\ac_workspace>rostopic pub /commands/stop std_msgs/Bool "data: false"  
publishing and latching message. Press ctrl-C to terminate  
^C  
C:\Users\pburgio\Desktop\ac_workspace>rostopic pub /commands/stop std_msgs/Bool "data: false" |
```

- 9) If you want to let the AC AI run the ego vehicle, simply press CTRL-C

