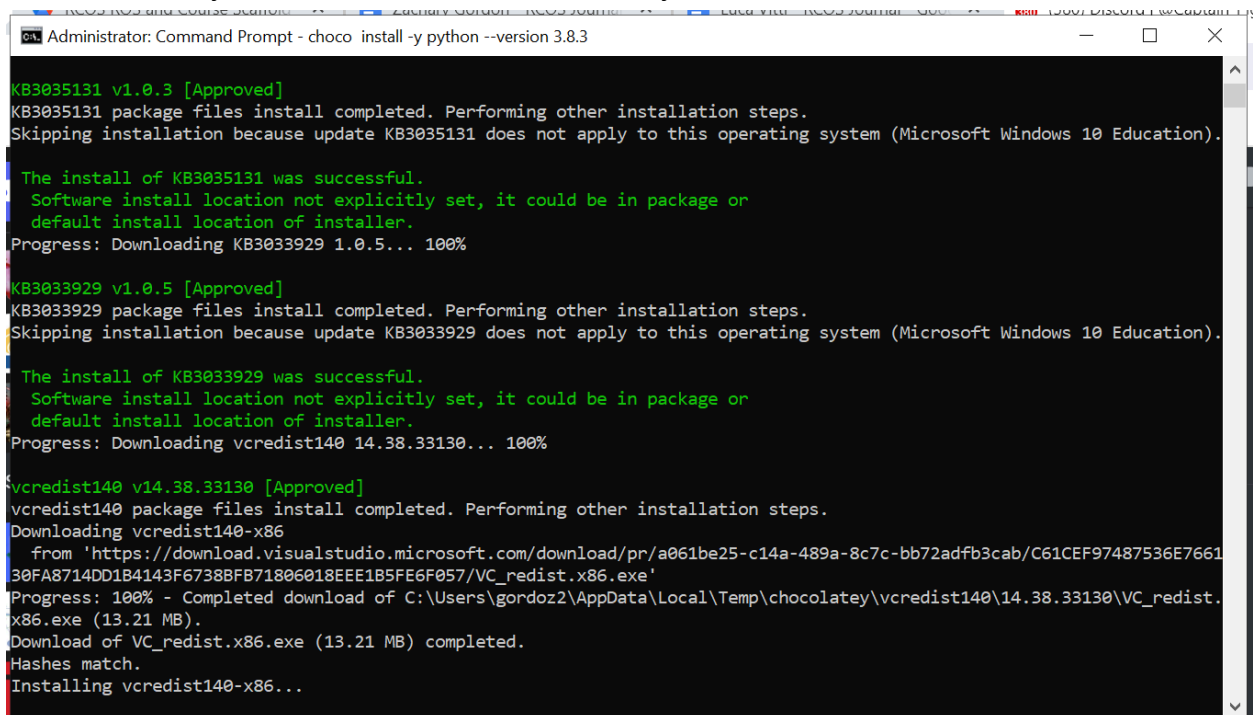


## Zachary Gordon - RCOS S24 Journal

**Date: 1/30/24**

Today I followed Luca's YT guide for the ROS install. I was told nothing about the process, and I have never had ROS on my computer before, so I am a good test subject for the guide.

At the Python 3.8.3 installation step, my computer got hung up on the line "Installing vcredist140-x86". I let it sit for about 10 minutes, but it was unmoving. At that point I hit Ctrl+C, figuring I'd restart the step. Instead, it actually forced the process to move forward, and Python 3.8.3 installed successfully from there.



```
Administrator: Command Prompt - choco install -y python --version 3.8.3

KB3035131 v1.0.3 [Approved]
KB3035131 package files install completed. Performing other installation steps.
Skipping installation because update KB3035131 does not apply to this operating system (Microsoft Windows 10 Education).

The install of KB3035131 was successful.
Software install location not explicitly set, it could be in package or
default install location of installer.
Progress: Downloading KB3033929 1.0.5... 100%

KB3033929 v1.0.5 [Approved]
KB3033929 package files install completed. Performing other installation steps.
Skipping installation because update KB3033929 does not apply to this operating system (Microsoft Windows 10 Education).

The install of KB3033929 was successful.
Software install location not explicitly set, it could be in package or
default install location of installer.
Progress: Downloading vcredist140 14.38.33130... 100%

vcredist140 v14.38.33130 [Approved]
vcredist140 package files install completed. Performing other installation steps.
Downloading vcredist140-x86
from 'https://download.visualstudio.microsoft.com/download/pr/a061be25-c14a-489a-8c7c-bb72adfb3cab/C61CEF97487536E7661
30FA8714DD1B4143F6738BFB71806018EEE1B5FE6F057/VC_redist.x86.exe'
Progress: 100% - Completed download of C:\Users\gordoz2\AppData\Local\Temp\chocolatey\vcredist140\14.38.33130\VC_redist.
x86.exe (13.21 MB).
Download of VC_redist.x86.exe (13.21 MB) completed.
Hashes match.
Installing vcredist140-x86...
```

One difference between my computer and the guide is that my terminal told me I should reboot after the Chocolatey/Python 3.8.3 install. This may have had to do with the vcredist140 which got stuck. I did not reboot, and moved forward to attempt to follow the guide as closely as possible. The next step was a manual install of the C++ redistributables. Since vcredist140 had been installed automatically in the Python step, it did not get installed again, and a message appeared saying it was already installed.

During my installation, my computer sometimes did not allow copying of commands out of the Jupiter Notebook and into my Command Prompt window. I'm unsure if this was an issue specific to me.

Another question came up at the Visual Studio Installation Step. I already had an installation of VS 2022 on my laptop from years ago, and I'm sure it included some of the installed tools we didn't want. I attempted the download according to the instructions, and I found a difference. My download was only 5.15 GB, despite the fact I had everything checked as in the video. We probably should include some direct guidance for those who might already have a VS installation on their PC. Maybe make clear also that the version is VS Community 2019.

I ran into one other issue right at the end. In the video, a non-admin command prompt is opened for the listener while the admin (system32) command prompt is used for the caller. Doing this will mean that the listener cannot respond to the talker. It's a poor showcase and probably should be updated in the video. I tested using admin (system32) prompts for both the talker and listener and non-admin prompts for both the talker and listener. In each of these cases, ros2 responded as it should have.

#### OVERALL REVIEW:

Using the video, I was able to install ros2 on Windows successfully. It was mostly very helpful, with good narration and showing every single step. Besides the few issues outlined in the notes above, my other comments have to do with small annoyances. The repeated editing of the Environment variables might be able to be streamlined into a single step. Constantly going in and out got old and took up a lot of time. The other thing to watch out for are some small inaccuracies in the video. Examples include the wrong pip command at 18:58, the wrong (non-universal) file size at 11:47, and the mentioned Command Prompt mismatch at 31:24. That last one especially needs to be updated, as the video ends with an instruction that will never work. We also might want to add a time estimate about the install - mine took nearly two hours.

#### **Date: 02/02/24**

Following Instructions from

[https://github.com/robotraconteur-contrib/Robotics\\_Middleware\\_Trial\\_Python\\_Turtle/blob/master/ROS2/Trial\\_instruction.md](https://github.com/robotraconteur-contrib/Robotics_Middleware_Trial_Python_Turtle/blob/master/ROS2/Trial_instruction.md)

1. Clone/pull the repository, you will need it to follow these steps.
  - a. Use the repo URL  
[https://github.com/robotraconteur-contrib/Robotics\\_Middleware\\_Trial\\_Python\\_Turtle.git](https://github.com/robotraconteur-contrib/Robotics_Middleware_Trial_Python_Turtle.git)
  - b. Use either GitHub desktop or the command line to clone the repo to a local directory
2. Find and copy the absolute path to your local repository
3. Open x64 VS Command prompt as administrator

- a. Type “x64” in the Windows search Bar. “x64 Native Tools Command Prompt for VS 2019” should come up. Right click it, and select Run as Administrator.
4. Enter “cd PATH\_TO\_REPO\Robotics\_Middleware\_Trial\_Python\_Turtle>cd ROS2\dev\_ws\src”
5. Assuming you installed ROS2 according to Luca's directions, enter “call C:\dev\ros2\_iron\ros2-windows\local\_setup.bat”. Otherwise, enter “call C:\YOUR\_PATH\ros2-windows\local\_setup.bat” You may see the warning: “[rti\_connext\_dds\_cmake\_module][warning] RTI Connex DDS environment script not found (\\resource\scripts\rtisetenv\_x64Win64VS2017.bat). RTI Connex DDS will not be available at runtime, unless you already configured PATH manually.” IGNORE IT
6. Type “ros2 pkg create --build-type ament\_python python\_turtle”. This creates a new directory in your src folder called python\_turtle. You should see the following information:

```
C:\Users\gordoz2\Dropbox\PC (2)\Documents\RCOSS24\ROS\MiddlewareTrials\Robotics_Middleware_Trial_Python_Turtle\ROS2\dev_ws\src>ros2 pkg create --build-type ament_python python_turtle
going to create a new package
package name: python_turtle
destination directory: C:\Users\gordoz2\Dropbox\PC (2)\Documents\RCOSS24\ROS\MiddlewareTrials\Robotics_Middleware_Trial_Python_Turtle\ROS2\dev_ws\src
package format: 3
version: 0.0.0
description: TODO: Package description
maintainer: ['gordoz2 <134734870@thezw27@users.noreply.github.com>']
licenses: ['TODO: License declaration']
build type: ament_python
dependencies: []
creating folder .\python_turtle
creating .\python_turtle\package.xml
Traceback (most recent call last):
  File "C:\dev\ros2_iron\ros2-windows\Scripts\ros2-script.py", line 33, in <module>
    sys.exit(load_entry_point('ros2cli==0.25.4', 'console_scripts', 'ros2')())
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2cli\cli.py", line 91, in main
    rc = extension.main(parser=parser, args=args)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\command\pkg.py", line 37, in main
    return extension.main(args=args)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\verb\create.py", line 184, in main
    create_package_environment(package, args.destination_directory)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 99, in create_package_environment
    _create_template_file(
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 81, in _create_template_file
    _expand_template(template_path, template_config, output_file_path)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 31, in _expand_template
    em.BUFFERED_OPT: True,
AttributeError: module 'em' has no attribute 'BUFFERED_OPT'
```

7. Enter “ros2 pkg create --build-type ament\_cmake turtle\_interfaces”. This creates a new directory in your src folder called turtle\_interfaces. You should see output

like the following:

```
C:\Users\gordoz2\Dropbox\PC (2)\Documents\RCOSS24\ROS\MiddlewareTrials\Robotics_Middleware_Trial_Python_Turtle\ROS2\dev_ws\src>ros2 pkg create --build-type ament_cmake turtle_interfaces
going to create a new package
package name: turtle_interfaces
destination directory: C:\Users\gordoz2\Dropbox\PC (2)\Documents\RCOSS24\ROS\MiddlewareTrials\Robotics_Middleware_Trial_Python_Turtle\ROS2\dev_ws\src
package format: 3
version: 0.0.0
description: TODO: Package description
maintainer: ['gordoz2 <134734870@thezw27@users.noreply.github.com>']
licenses: ['TODO: License declaration']
build type: ament_cmake
dependencies: []
creating folder .\turtle_interfaces
creating .\turtle_interfaces\package.xml
Traceback (most recent call last):
  File "C:\dev\ros2_iron\ros2-windows\Scripts\ros2-script.py", line 33, in <module>
    sys.exit(load_entry_point('ros2cli==0.25.4', 'console_scripts', 'ros2')())
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2cli\cli.py", line 91, in main
    rc = extension.main(parser=parser, args=args)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\command\pkg.py", line 37, in main
    return extension.main(args=args)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\verb\create.py", line 184, in main
    create_package_environment(package, args.destination_directory)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 99, in create_package_environment
    _create_template_file(
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 81, in _create_template_file
    _expand_template(template_path, template_config, output_file_path)
  File "C:\dev\ros2_iron\ros2-windows\Lib\site-packages\ros2pkg\api\create.py", line 31, in _expand_template
    em.BUFFERED_OPT: True,
AttributeError: module 'em' has no attribute 'BUFFERED_OPT'
```

8. Create a new directory named msg within your turtle\_interfaces directory called “msg”. This can be accomplished from File Explorer or with the following commands (assuming you begin in your PATH\_TO\_REPO\Robotics\_Middleware\_Trial\_Python\_Turtle>cd ROS2\dev\_ws\src directory)
  - a. “cd turtle\_interfaces”
  - b. “mkdir msg”
9. Check whether the folder has been created by entering the command “dir”. You should see this output:

```
02/02/2024  05:01 PM    <DIR>        .
02/02/2024  05:01 PM    <DIR>        ..
02/02/2024  05:12 PM    <DIR>        msg
               0 File(s)                0 bytes
               3 Dir(s)  60,557,242,368 bytes free
```

10. Now, create a new file named “Turtlemsg.msg” inside of the new “msg” directory. To do this:
  - a. Enter “cd msg”
  - b. Enter “nul > Turtlemsg.msg”

11. Check whether the file has been created by entering the command “dir”. You should see this output (though your file should show 0 bytes):

```
02/02/2024  05:12 PM    <DIR>          .
02/02/2024  05:12 PM    <DIR>          ..
02/02/2024  05:13 PM                   57 Turtlemsg.msg
               1 File(s)                   57 bytes
               2 Dir(s)  60,559,544,320 bytes free
```

12. Open Turtlemsg.msg in Visual Studio or some other editor. (To do this, you may have to right-click the file in File Explorer and change its default opening application). Enter this data into the file, then save and close:

```
string name
geometry_msgs/Pose turtle_pose
string color
```

- 13.