



# Formation Control in ROS2

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# Workspace preparation

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To activate ROS2, run:

```
./opt/ros/foxy/setup.bash
```

Create a new directory that will contain the ROS2 workspace:

```
mkdir -p formation_ros2_ws/src
```

```
cd formation_ros2_ws/src
```

Create the package from the **src** directory using

```
ros2 pkg create --build-type ament_python formation_control
```

# Package configuration

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Add dependencies in **package.xml**

```
<exec_depend>rclpy</exec_depend>
```

```
<exec_depend>std_msgs</exec_depend>
```

```
<exec_depend>ros2launch</exec_depend>
```

Modify the **setup.py**

- (i) add to the header “**from glob import glob**” and to the **data\_files** list:  
    (**"share/" + package\_name, glob("launch\_folder/formation\_launch.py")**)
  
- (ii) Specify the entry point, i.e., the name of the ROS2 node associated to the source file **the\_agent.py**  
    **"generic\_agent = formation\_control.the\_agent:main"**

# Package build and run

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Include the source file for the ROS2 **Node**, which is to be added into **formation\_ros2\_ws/src/formation\_control/formation\_control**

From the ROS2 workspace root **formation\_ros2\_ws** (**ls** should list the **src** directory) build the package **colcon build --symlink-install --packages-select formation\_control**

Then

- run (reactivate ROS2 if needed)  
**./opt/ros/foxy/setup.bash**
- run  
**. install/setup.bash**
- run the launch file  
**ros2 launch formation\_control formation\_launch.py**