

ROS Tutorial #10:

To prepare for this tutorial, do the following:

- Open a new terminal
- `cd ~/catkin_ws`
- `source devel/setup.bash`

Now start the steps of the beginner tutorial #10, "Section 2. Using msg

- `roscd beginner_tutorials`
- `mkdir msg` % make a standard msg subdirectory
- `echo "int64 num" > msg/Num.msg`
 - This is "linux speak" for putting the text *int64 num* on the first line of Num.msg. It's faster than opening and editing the file

Next you are to open the package.xml file and ensure that certain lines are uncommented. When you are done, the file should look something like this:

```
<?xml version="1.0"?>
<package format="2">
  <name>beginner_tutorials</name>
  <version>0.1.0</version>
  <description>The beginner_tutorials package</description>

  <maintainer email="jwb@robotics.caltech.edu">Joel W. Burdick </maintainer>
  <license>BSD</license>
  <author email="jwb@robotics.caltech.edu">Joel W. Burdick</author> -->

  <buildtool_depend>catkin</buildtool_depend>

  <build_depend>roscpp</build_depend>
  <build_depend>rospy</build_depend>
  <build_depend>std_msgs</build_depend>
  <build_depend>message_generation</build_depend>

  <build_export_depend>roscpp</build_export_depend>
  <build_export_depend>rospy</build_export_depend>
  <build_export_depend>std_msgs</build_export_depend>

  <exec_depend>roscpp</exec_depend>
  <exec_depend>rospy</exec_depend>
  <exec_depend>std_msgs</exec_depend>
  <exec_depend>message_runtime</exec_depend>
```

```
</package>
```

Next you are to open the CMakeLists.txt file and ensure that certain lines are uncommented. The tutorial is very sloppy on the CMakeLists.txt description. Here is a version of the file that will suffice for the rest of the this tutorial:

```
cmake_minimum_required(VERSION 2.8.3)
project(beginner_tutorials)

### Find catkin macros and libraries
find_package(catkin REQUIRED COMPONENTS roscpp rospy std_msgs message_generation)

### Generate messages in the 'msg' folder
#add_message_files(DIRECTORY msg FILES Num.msg)
add_message_files(FILES Num.msg)

### Generate services in the 'srv' folder
# add_service_files(DIRECTORY srv FILES AddTwoInts.srv)
add_service_files(FILES AddTwoInts.srv)

### Generate added messages and services
generate_messages(DEPENDENCIES std_msgs)

### catkin specific configuration
catkin_package()

#####
## Build ##
#####

include_directories(include ${catkin_INCLUDE_DIRS})

add_executable(talker src/talker.cpp)
target_link_libraries(talker ${catkin_LIBRARIES})
add_dependencies(talker beginner_tutorials_generate_message_cpp)

add_executable(listener src/listener.cpp)
target_link_libraries(listener ${catkin_LIBRARIES})
add_dependencies(listener beginner_tutorials_generate_message_cpp)
```

Part 3 of the Tutorial (Using rosmg) should work for you using this package.xml and CMakeLists.txt files.

Part of the Tutorial, *Using srv*, starts fine:

- `roscd beginner_tutorials`
- `mkdir srv` % make the standard srv (service) subdirectory
- `roscp rospy_tutorials AddTwoInts.srv srv/AddTwoInts.srv`