gmapping

- http://wiki.ros.org/gmapping
- This is just a thin ROS-wrapper around
  - http://openslam.org/gmapping.html
Navigation Stack Setup

```
move_base
  "move_base_simple/goal"
  geometry_msgs/PoseStamped

global_planner
  global_costmap
  internal
  nav_msgs/Path
  recovery_behaviors

local_planner
  local_costmap
  "cmd_vel"
  geometry_msgs/Twist

base_controller

"/map"
nav_msgs/GetMap

map_server

"/tf"
  tf/tfMessage

tf

"odom"
  nav_msgs/Odometry

sensor transforms

odometry source

amcl

sensor sources

sensor topics
  sensor_msgs/LaserScan
  sensor_msgs/PointCloud

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Review of ROS Communication

- **Publish/Subscribe** - best for sharing streaming data
- **Services** - remote procedure calls, send a request, wait for result
Review of ROS Communication

- **Publish/Subscribe** - best for sharing streaming data
- **Services** - remote procedure calls, send a request, wait for result

Sometimes we want to request a long-running service, then get on with things, potentially cancelling the request later:
  - actionlib
  - [http://wiki.ros.org/actionlib](http://wiki.ros.org/actionlib)
actionlib example

action_nav.py