Installing ROS and Gazebo

- Installed ubuntu 16.04.4 from an USB pen.
- Installed ROS Kinetic
    - http://wiki.ros.org/kinetic/Installation/Ubuntu
    - sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
    - sudo apt-key adv --keyserver hkp://ha.pool.sks-keyservers.net:80 --recv-key 421C365BD9FF1F717815A3895523BAEEB01FA116
    - sudo apt-get update
    - sudo apt-get install ros-kinetic-desktop-full
        - This also installs gazebo version 7
- Installed ros controls for gazebo
    - sudo apt-get install ros-kinetic-gazebo-ros-control
- Updated ros dep
    - sudo rosdep init
    - rosdep update
- Installed requirements that are needed later
    - sudo apt install git python-jinja2 python-pip libopencv-dev protobuf-compiler
    - sudo pip install --upgrade pip
    - sudo pip install numpy toml
- Installed px4 software simulator
    - https://dev.px4.io/en/setup/building_px4.html
    - mkdir ~/localbuild
    - cd ~/localbuild
    - git clone https://github.com/PX4/Firmware.git
    - cd Firmware
    - git submodule update --init --recursive
    - Try to start the jMAVSim
        - make posix jmavsim
        - Builds and starts the simulator, but no window is shown. The message shown below is given in the console.
            - INFO [simulator] Waiting for initial data on UDP port 14560. Please start the flight simulator to proceed.
    - Start the gazebo simulator with a simulated 3DR Iris drone
    - cd ~/localbuild/Firmware
    - make posix_sitl_default gazebo
        - Gazebo starts up and the 3DR Iris drone is seen on the ground.
        - Issue the command “commander takeoff” on the commandline where the make command was entered.
        - You should see that the drone takes off and lands again.

Missing elements in the guide

- Install mavros
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