HOW TO

Turn on Baxter—just tap on

Once Baxter powers up, the lights around the top of his head should go green. (the 12 sonar lights are yellow). If you ever see red, that means there is a problem unless you had purposely changed the halo color by publishing a command to Baxter's topic below.

(Head) Halo LEDs   http://sdk.rethinkrobotics.com/wiki/API_Reference#Lights

The 'Halo' light is the red/green light at the top of Baxter's head. The Halo is actually two separate lights - one for the red, one for the green - whose intensity levels can be independently controlled and mixed to produce a range of colors.

Control Light Brightness
```
/robot/sonar/lights/set_red_level (std_msgs-Float32)
/robot/sonar/lights/set_green_level (std_msgs-Float32)
```

Turn Baxter off –

1) Use a shutdown or set back to neutral routine before shutting Baxter off when you are all done

2) The shutdown routine should include disabling the motors.

3) Tap on the on/off button. Do not hold the button down as it can damage the hard drive. Also, do not

   unplug during shutdown or you can have problems when starting up again.

   See picture and website address below.

   http://sdk.rethinkrobotics.com/wiki/Baxter_Power_Down

Baxter Power Down

Baxter Power Down

To power down Baxter, simply press the power button on the back panel of the robot (it's on Baxter's left side).

In a couple of seconds the Rethink Logo splash-screen animation will show on Baxter's monitor for a about 5 seconds, and the robot will shutdown.

Caution!

- Do not hold in the power button when shutting down! Just press the power button for a second. Holding down the power button can cause hard drive corruption on the next boot.
- Do not unplug the robot while it is in the process of shutting down! This can also cause problems for the next time you boot up.

Estop—Baxter will not work if the estop is damaged or pressed down. If Baxter does not start up, you can check the status of the estop by the following command:

rostopic echo /robot/state

Here is the web page to troubleshoot: http://sdk.rethinkrobotics.com/wiki/Robot_State_and_EStop

Checking Connectivity:

If you try to communicate with Baxter and nothing happens:

1) Check the estop

2) Check to make sure all the cables are secure

3) Check your ip address using ifconfig and make sure that it is the same as that on the baxter.sh file

4) The baxter.sh file is in the ros_ws directory.   For the simulator, the path to the baxter.sh file is:

   /ros_ws/src/baxter

5) Go to the following web page to try to establish connectivity:

   http://sdk.rethinkrobotics.com/wiki/Hello_Baxter

Shut down routine or setting Baxter back to neutral

It's good to have a routine that will set Baxter's arms back to neutral position

I included a simple program with a shutdown routine. The direction on how to install it in your ros_ws/src directory are the very last item in the Useful Commands document.

Grippers:

Please try the examples on the use of the grippers. Remember that they must be calibrated, or they will not open and close

http://sdk.rethinkrobotics.com/wiki/Gripper_Example ---shows how to vary velocity and force control

http://sdk.rethinkrobotics.com/wiki/Joint_Position_Keyboard_Example -- I included a document that lists the keyboard bindings for your use.

Camera Control

http://sdk.rethinkrobotics.com/wiki/Camera_Control_Tool

Zero-Gravity and manually moving Baxter's arms

If you need to manually move Baxter's arm, grip his cuff in the groove to activate the Zero-Gravity. This will allow you to easily move Baxter's arms.

http://sdk.rethinkrobotics.com/wiki/Zero-G_Mode

Maintenance

   1) Grippers – what to do if the grippers jam or stop working

     http://sdk.rethinkrobotics.com/wiki/Grippers

   2) Arms -- from the FAQ's page -- http://sdk.rethinkrobotics.com/wiki/FAQ

- **The arms on my Baxter are moving sluggishly, or pulling when in Zero-G mode... What can I do about this?**

  This probably means that your Baxter's arms could stand to be calibrated. Here is a guide on doing this.

- **A spring on an arm of Baxter is making a squeak or groan noise. How do I go about fixing this?**

  This means that you should apply some grease to the gravitational compensation spring. Here is a guide on doing this.

- **The foam on the fan cover appears to be very dusty? How do I clean it?**

  It's good practice to clean the filters on the fan covers to ensure clean air enters Baxter's

torso. [Here](#) is a guide on doing this.
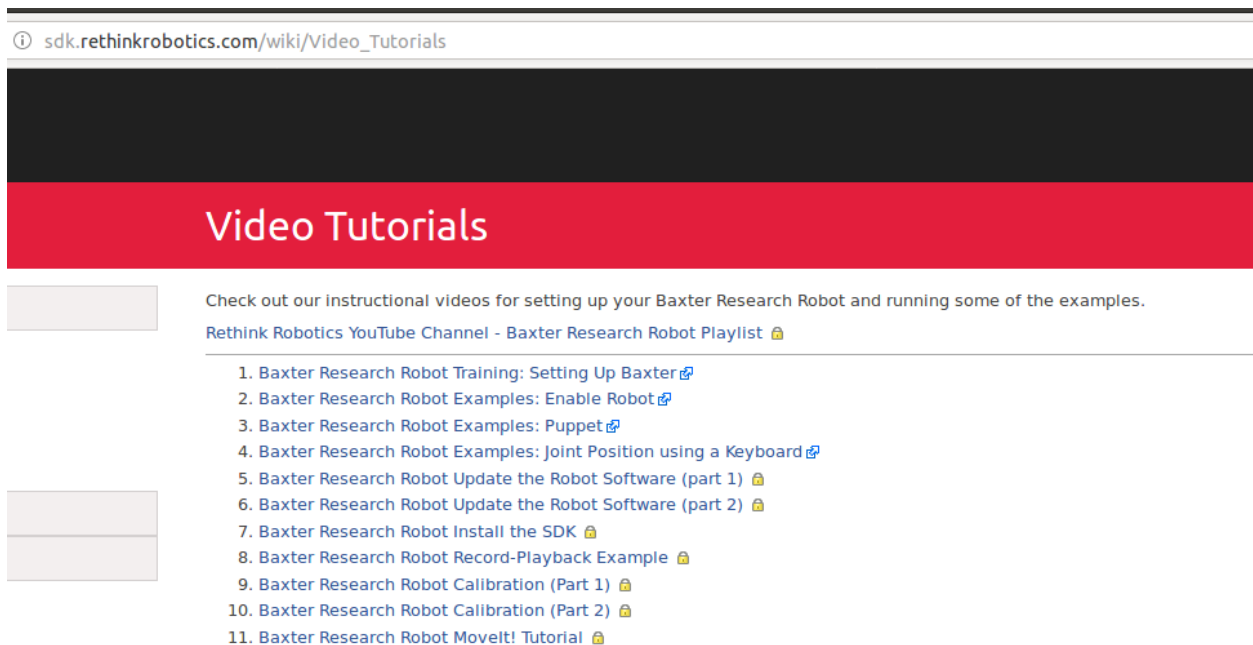
3) Calibration and Tare

I minimized calibrating and tare because to calibrate you have to remove the grippers. Baxter's left gripper is held together by tape, so it is more challenging every time the gripper is removed. The details of what happened to the left gripper are documented in the Baxter Large White notebook on the workstation desk.
The website has a video that shows you how to calibrate and tare.
http://sdk.rethinkrobotics.com/wiki/Tare

Useful Videos

Troubleshooting Page:

http://sdk.rethinkrobotics.com/wiki/Troubleshooting