indigo	kinetic	lunar	melodic	*Show EOL distros:* ☐

Documentation Status

robot (/robot?distro=melodic)*: control_msgs (/control_msgs?distro=melodic) | diagnostics (/diagnostics?distro=melodic) | executive_smach (/executive_smach?distro=melodic) | filters (/filters?distro=melodic) | geometry (/geometry?distro=melodic) | joint_state_publisher (/joint_state_publisher?distro=melodic) | kdl_parser (/kdl_parser?distro=melodic) | kdl_parser_py (/kdl_parser_py?distro=melodic) | robot_state_publisher (/robot_state_publisher?distro=melodic) | ros_base (/ros_base?distro=melodic) | urdf | urdf_parser_plugin (/urdf_parser_plugin?distro=melodic) | xacro (/xacro?distro=melodic)*

Package Links

- **Code API (http://docs.ros.org/melodic/api/urdf/html)**
- Tutorials (/urdf/Tutorials)
- Troubleshooting (/urdf/Troubleshooting)
- FAQ (http://answers.ros.org/questions/scope:all/sort:activity-desc/tags:urdf/page:1/)
- Changelog (http://docs.ros.org/melodic/changelogs/urdf/changelog.html)
- Change List (/urdf/ChangeList)
- Reviews (/urdf/Reviews)

Dependencies (6)
Used by (25)
Jenkins jobs (11)

Package Summary

✔ **Released** ✔ **Continuous Integration** ✔ **Documented**

This package contains a C++ parser for the Unified Robot Description Format (URDF), which is an XML format for representing a robot model. The code API of the parser has been through our review process and will remain backwards compatible in future releases.

- Maintainer status: maintained
- Maintainer: Chris Lalancette <clalancette AT osrfoundation DOT org>, Shane Loretz <sloretz AT osrfoundation DOT org>
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- License: BSD
- Bug / feature tracker: https://github.com/ros/urdf/issues (https://github.com/ros/urdf/issues)
- Source: git https://github.com/ros/urdf.git (https://github.com/ros/urdf) (branch: melodic-devel)

English (/urdf) 简体中文 (/cn/urdf)

Inhaltsverzeichnis

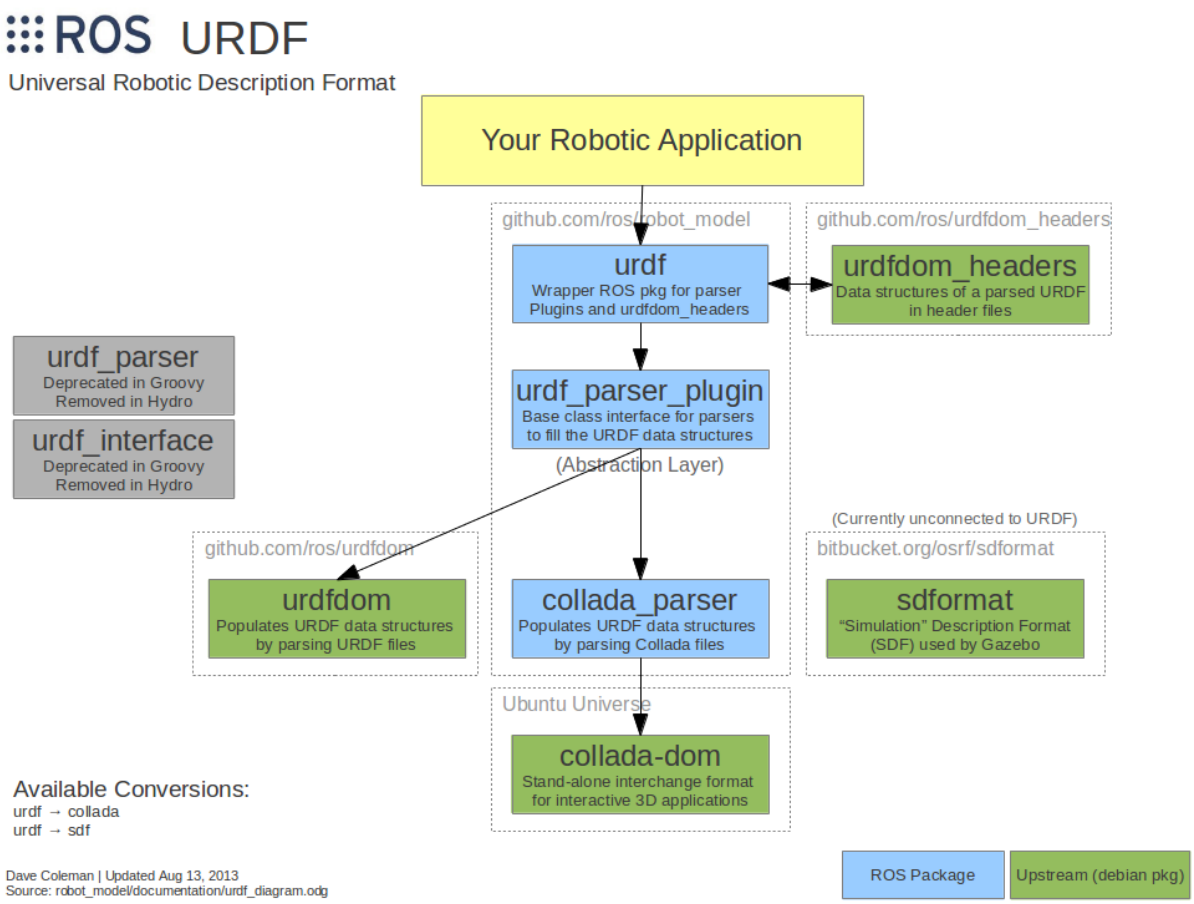
1. Overview

This package contains a number of XML specifications (/urdf/XML) for robot models, sensors, scenes, etc. Each XML specification has a corresponding parser in one or more languages.

	XML Description	C++	Python
Model	model (/urdf/XML/model)	Parser API (http://www.ros.org/doc/api/urdf/html/) Model API (https://github.com/ros/urdfdom_headers/tree/master/urdf_model/include/urdf_model)	
Sensor	sensor (/urdf/XML/sensor)		

2. Components

New in Hydro A number of different packages and components make up urdf. The following diagram attempts to explain the relationship between these components:



2.1 Current Status of URDF Components in Hydro:

- The core URDF parser and data structures (urdfdom, urdfdom_headers) have been pushed upstream into stand alone (no ROS-dependencies) software packages that will in the future be released into Ubuntu completely separate from ROS.
- There is now a distinction between a URDF file and a URDF data structure. A URDF file follows the XML format as described on the ros.org wiki. A URDF data structure is a set of generic classes that various formats (currently URDF and Collada) can be parsed into.
- A new plugin abstraction layer (urdf_parser_plugin) allows the URDF data structures to be populated with various file formats (currently URDF and Collada)

- The ROS packages urdf_parser and urdf_interface have been deprecated in Groovy and removed in Hydro.

3. Getting Started

There is large set of **tutorials** on how to build up your own robot models using the URDF specification. Check out the urdf/Tutorials (/urdf/Tutorials) page.

We also developed a macro language called xacro (/xacro) to make it easier to maintain the robot description files, increase their readability, and to avoid duplication in the robot description files.

4. Examples

See this page (/urdf/Examples) for a list of robots described by a URDF model.

5. Tools

5.1 Verification

A command line tool check_urdf attempts to parse a file as a URDF description, and either prints a description of the resulting kinematic chain, or an error message.

For example, to run this tool on the pr2 urdf, first create the urdf file by running:

```
rosrun xacro xacro.py `rospack find pr2_description`/robots/pr2.urdf.xacro -o /tmp/pr2.urdf
```

New in Indigo

Then run the check by running:

Note: You may need to run `sudo apt-get install liburdfdom-tools`.

```
check_urdf pr2.urdf
```

New in Hydro

Then run the check by running:

```
rosrun urdfdom check_urdf /tmp/pr2.urdf
```

and you should see something resembling:

```
robot name is: pr2
---------- Successfully Parsed XML ---------------
root Link: base_footprint has 1 child(ren)
    child(1):  base_link
        child(1):  base_laser_link
        child(2):  bl_caster_rotation_link
            child(1):  bl_caster_l_wheel_link
            child(2):  bl_caster_r_wheel_link
        child(3):  br_caster_rotation_link
            child(1):  br_caster_l_wheel_link
            child(2):  br_caster_r_wheel_link
        child(4):  fl_caster_rotation_link
            child(1):  fl_caster_l_wheel_link
            child(2):  fl_caster_r_wheel_link
        child(5):  fr_caster_rotation_link
            child(1):  fr_caster_l_wheel_link
            child(2):  fr_caster_r_wheel_link
        child(6):  torso_lift_link
            child(1):  head_pan_link
                child(1):  head_tilt_link
                    child(1):  head_plate_frame
                        child(1):  sensor_mount_link
                            child(1):  double_stereo_link
                                child(1):  narrow_stereo_link
 ...
```

5.2 Visualization

To get a graphviz diagram of your urdf file, do the following:

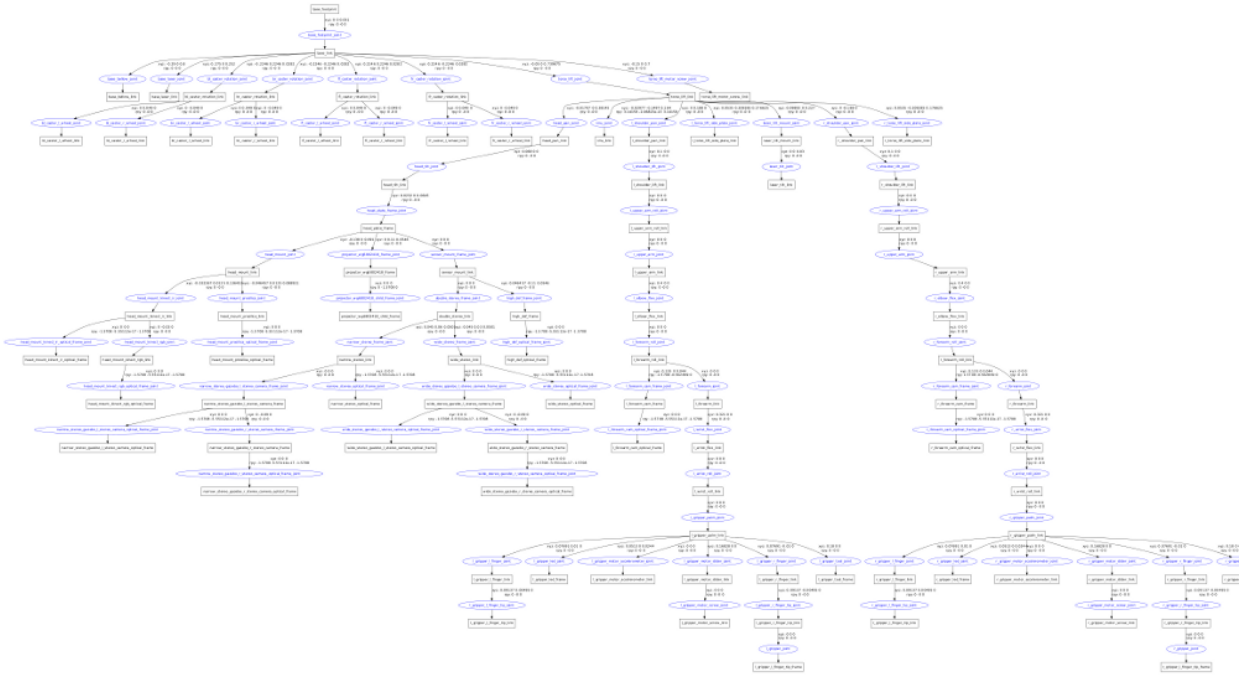
New in Indigo In Indigo, the `urdf_to_graphiz` tool has moved to the `liburdfdom-tools` package. You may need to run `sudo apt-get install liburdfdom-tools` if you can't use `urdf_to_graphiz`

```
urdf_to_graphiz pr2.urdf
```

New in Hydro

```
urdf_to_graphiz pr2.urdf
```

The result is a file called pr2.pdf that looks something like this:



6. Known Issues

- Sensor model information is not included (except in gazebo extensions for simulated sensors).

Wiki: urdf (zuletzt geändert am 2019-01-11 01:15:14 durch Playfish (/Playfish))