Community Metrics Report

Tully Foote
Reporting on July 2019

Comparisons are to July 2018 Report
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Source: Metrics categories borrowed from Dawn Foster of MeeGo: http://wiki.meego.com/Metrics
Awareness Metrics

Discovering the community, learning more about it (potential community members)
ros.org: Visitors & Page Views
wiki.ros.org Visitors: July 2019

### Site: wiki.ros.org
### Source: Google Analytics
### Annual Growth: 5%

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users</td>
<td>203,403</td>
</tr>
<tr>
<td>New Users</td>
<td>128,953</td>
</tr>
<tr>
<td>Sessions</td>
<td>720,326</td>
</tr>
<tr>
<td>Number of Sessions per User</td>
<td>3.54</td>
</tr>
<tr>
<td>Pageviews</td>
<td>2,307,659</td>
</tr>
<tr>
<td>Pages / Session</td>
<td>3.20</td>
</tr>
<tr>
<td>Avg. Session Duration</td>
<td>00:06:42</td>
</tr>
<tr>
<td>Bounce Rate</td>
<td>47.72%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page</th>
<th>Pageviews</th>
<th>% of Total</th>
<th>(Pageviews/total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ROS/Tutorials</td>
<td>107,466</td>
<td>4.66%</td>
<td>(107,466/2,307,659)</td>
</tr>
<tr>
<td>/kinetic/installation/Ubuntu</td>
<td>58,837</td>
<td>2.50%</td>
<td>(58,837/2,307,659)</td>
</tr>
<tr>
<td>/</td>
<td>57,217</td>
<td>2.48%</td>
<td>(57,217/2,307,659)</td>
</tr>
<tr>
<td>/ROS/Installation</td>
<td>49,095</td>
<td>2.13%</td>
<td>(49,095/2,307,659)</td>
</tr>
<tr>
<td>/kinetic/installation</td>
<td>38,889</td>
<td>1.69%</td>
<td>(38,889/2,307,659)</td>
</tr>
<tr>
<td>/melodic/installation</td>
<td>37,539</td>
<td>1.63%</td>
<td>(37,539/2,307,659)</td>
</tr>
<tr>
<td>/ROS/Tutorials/installingandConfiguringROS/Environment</td>
<td>30,438</td>
<td>1.32%</td>
<td>(30,438/2,307,659)</td>
</tr>
<tr>
<td>/cn/ROS/Tutorials</td>
<td>28,308</td>
<td>1.23%</td>
<td>(28,308/2,307,659)</td>
</tr>
<tr>
<td>/melodic/Installation</td>
<td>27,874</td>
<td>1.21%</td>
<td>(27,874/2,307,659)</td>
</tr>
<tr>
<td>/ROS/Tutorials/CreatingPackage</td>
<td>25,987</td>
<td>1.13%</td>
<td>(25,987/2,307,659)</td>
</tr>
</tbody>
</table>
wiki.ros.org visitor locations:

Source: Google Analytics
Site: wiki.ros.org in July 2019
Public wiki.ros.org Mirrors

- Asia:
  - Singapore
  - China
  - Tokyo, Japan
  - Ho Chi Minh, Vietnam
- Europe:
  - Ireland
  - Freiburg, Germany
  - Barcelona, Catalonia
- North America:
  - College Park, Maryland
  - Saint Louis, Massachusetts
  - Potsdam, New York
- South America
  - Sao Paulo, Brazil

This report does not include data from these mirrors.

Source: http://wiki.ros.org/Mirrors
answers.ros.org visitors: July 2019

Site: answers.ros.org
Source: Google Analytics
Annual Growth: 22%
Site: index.ros.org
Source: Google Analytics
Annual Growth: N/A First Report
Membership Metrics

Taking the time to sign up and join the community (passive and active community members)
Site & list membership

- **discourse.ros.org users**
  - 4.2k (39% increase)

- **ros-users@lists.ros.org subscribers (deprecated):**
  - 1,902 (2% decrease)

- **wiki.ros.org users:**
  - 8,473 (10% increase)

- **answers.ros.org users:**
  - 34,054 (51% increase)

Answers is currently subject to a profile spam attack. There are several thousand zero trust users that need to be cleared.

Sources: MailMan, MoinMoin, askbot, Discourse

Sampled: 2019-08-19
Engagement Metrics

Interacting with other community members  
(active community members)
wiki.ros.org: activity in July 2018

- Wiki pages:
  - 117,488 (15% increase)
- Wiki page edits:
  - 24.1 / day (averaged over July, 40% increase)
- Wiki page views:
  - 74,440 / day (averaged over July, 5% increase)

Source: MoinMoin, Google Analytics (sampled 2019-08-19)
answers.ros.org: activity

- Total questions:
  - 48,222 (14% increase)
- Answered questions:
  - 32,605 (11% increase)
- New questions in July:
  - 677 (21.8 / day, 4% increase)
Histogram of users by karma. Users get karma points for having answers upvoted (+10) or accepted (+15) and for accepting someone else’s answer (+2).
discourse.ros.org activity

<table>
<thead>
<tr>
<th>Site Statistics</th>
<th>Last 7</th>
<th>Last 30</th>
<th>All Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topics</td>
<td>26</td>
<td>95</td>
<td>3.1k</td>
</tr>
<tr>
<td>Posts</td>
<td>208</td>
<td>912</td>
<td>24.0k</td>
</tr>
<tr>
<td>Users</td>
<td>42</td>
<td>140</td>
<td>4.2k</td>
</tr>
<tr>
<td>Active Users</td>
<td>375</td>
<td>682</td>
<td>—</td>
</tr>
<tr>
<td>Likes</td>
<td>106</td>
<td>363</td>
<td>7.9k</td>
</tr>
</tbody>
</table>

Source: http://discourse.ros.org/about
Sampled: 2019-08-19
Code Metrics

Engaging with the ROS project at a code level (developers and users)
Binary Downloads – July 2019

- Total Unique Visitors downloading .deb files:
  - 437,687 (33% increase)
- Total downloads of .deb packages:
  - 20,645,089 (27% increase)
- Unique package names downloaded as .deb files:
  - 11,403 (3% decrease)
- Number of unique versions of .deb packages downloaded:
  - 55,277 (22% decrease)

Source: Apache2, counting only downloads from the main repository (not the testing repository, shadow-fixed, or mirrors). Some server logs may have been lost prior to analysis.
## Top 40 Downloaded Packages

Direct downloads from packages.ros.org - July 2019

<table>
<thead>
<tr>
<th>Package</th>
<th>Downloads</th>
<th>Description</th>
<th>Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>python-catkin-pkg-modules</td>
<td>83057</td>
<td>ros-kinetic-geneus</td>
<td>49546</td>
</tr>
<tr>
<td>python-catkin-pkg</td>
<td>82967</td>
<td>ros-kinetic-genpy</td>
<td>49541</td>
</tr>
<tr>
<td>python-rosdep</td>
<td>75091</td>
<td>ros-kinetic-gennodejs</td>
<td>49533</td>
</tr>
<tr>
<td>python-rospkg-modules</td>
<td>73874</td>
<td>ros-kinetic-genlisp</td>
<td>49533</td>
</tr>
<tr>
<td>python-rospkg</td>
<td>73853</td>
<td>ros-kinetic-std-srvs</td>
<td>49532</td>
</tr>
<tr>
<td>python-rosdistro</td>
<td>73468</td>
<td>ros-kinetic-genmsg</td>
<td>49523</td>
</tr>
<tr>
<td>python-rosdistro-modules</td>
<td>73370</td>
<td>ros-kinetic-gencpp</td>
<td>49518</td>
</tr>
<tr>
<td>ros-kinetic-actionlib</td>
<td>52232</td>
<td>ros-kinetic-message-generation</td>
<td>49492</td>
</tr>
<tr>
<td>ros-kinetic-pluginlib</td>
<td>51652</td>
<td>ros-kinetic-roslaunch</td>
<td>49465</td>
</tr>
<tr>
<td>ros-kinetic-class-loader</td>
<td>51512</td>
<td>ros-kinetic-cpp-common</td>
<td>49453</td>
</tr>
<tr>
<td>ros-kinetic-roscpp</td>
<td>50477</td>
<td>ros-kinetic-rosout</td>
<td>49386</td>
</tr>
<tr>
<td>ros-kinetic-catkin</td>
<td>50380</td>
<td>ros-kinetic-rosparam</td>
<td>49380</td>
</tr>
<tr>
<td>ros-kinetic-dynamic-reconfigure</td>
<td>50238</td>
<td>ros-kinetic-sensor-msgs</td>
<td>49370</td>
</tr>
<tr>
<td>ros-kinetic-std-msgs</td>
<td>49897</td>
<td>ros-kinetic-rostest</td>
<td>49357</td>
</tr>
<tr>
<td>ros-kinetic-rosgraph-msgs</td>
<td>49888</td>
<td>ros-kinetic-rosmaster</td>
<td>49291</td>
</tr>
<tr>
<td>ros-kinetic-rosconsole</td>
<td>49837</td>
<td>ros-kinetic-rosbuid</td>
<td>49288</td>
</tr>
<tr>
<td>ros-kinetic-message-filters</td>
<td>49779</td>
<td>ros-kinetic-message-runtime</td>
<td>49275</td>
</tr>
<tr>
<td>ros-kinetic-xmlrpcpp</td>
<td>49708</td>
<td>ros-kinetic-rostime</td>
<td>49269</td>
</tr>
<tr>
<td>ros-kinetic-geometry-msgs</td>
<td>49673</td>
<td>ros-kinetic-roslib</td>
<td>49256</td>
</tr>
<tr>
<td>ros-kinetic-rospy</td>
<td>49655</td>
<td>ros-kinetic-rosbag</td>
<td>49249</td>
</tr>
</tbody>
</table>
Downloads by architecture
Direct downloads from packages.ros.org - July 2019
Results larger than 0.001%

i386: 0.93 %
amd64: 87.24 %
armhf: 2.60 %
arm64: 4.29 %
source: 0.00 %

artful_amd64: 0.00 %
bionic_amd64: 25.30 %
bionic_arm64: 2.43 %
bionic_armhf: 0.82 %
precise_amd64: 0.05 %
precise_i386: 0.00 %
quantal_amd64: 0.00 %
quantal_i386: 0.00 %
saucy_amd64: 0.00 %
saucy_i386: 0.00 %
stretch_amd64: 0.38 %
stretch_arm64: 0.05 %
stretch_armhf: 0.00 %

trusty_amd64: 5.83 %
trusty_armhf: 0.13 %
trusty_i386: 0.16 %
utopic_amd64: 0.00 %
utopic_i386: 0.00 %
xenial_amd64: 50.27 %
xenial_arm64: 1.61 %
xenial_armhf: 1.45 %
xenial_i386: 0.68 %
Binary Downloads by rosdistro

The fraction of packages downloaded per rosdistro

- Hydro and earlier: 0.00 %
- Indigo: 5.02 % (Long Term Support Release)
- Jade: 0.00 %
- Kinetic: 53.06 % (Long Term Support Release)
- Lunar: 0.85 %
- Melodic: 26.71 % (Long Term Support Release)
- Bouncy and earlier ROS 2: 0.12 %
- Crystal 0.62 %
- Dashing 1.51 % (Long Term Support Release)
- Rosdistro independent: 12.10% (packages like python-rosdistro and python-rosinstall, as well as backported 3rdparty libraries like pcl and colladadom)

Source: Apache2, counting only downloads from the main repository (not the testing repository, shadow-fixed, or mirrors)
Public Debian Package Mirrors

- USTC (China)
- Tsinghua University (China)
- Ireland
- Singapore
- Freiburg (Germany)
- Delft University of Technology (The Netherlands)
- Clarkson University (USA)
- University of Maryland (USA)
- Centro Universitário da FEI (Brazil)
- University of Tokyo (Japan)

This report does not include data from these mirrors.

Source: http://wiki.ros.org/ROS/Installation/UbuntuMirrors
The rosdistro repository is the repository where releases are managed and the main index of publicly announced ROS packages. Most pull requests on this repository are requests for indexing or packaging of ROS packages.
Research use

Total number of papers citing “ROS: an open-source Robot Operating System” (Quigley et al., 2009):

5875 (22% increase)

Source: Google Scholar 2019-08-19
Documented ROS Robots

The number of different types of robots available to the community with ROS drivers.

Source: Ken Conley, Tully Foote, wiki.ros.org/Robots, 2017 changed over to robots.ros.org