KEY FEATURES OF ROS 2

- Based on Data Distribution Service (DDS)
  - Much faster performance
  - Suitable for real-time distributed embedded systems
- Implemented in C++ (ROS 1 is based on python)
  - More resourceful and faster
  - Easier portability between versions of ROS and Ubuntu
  - Lower latency and smaller memory footprint

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ETHERNET SUPPORT OF ROS 2

- Vehicles including multiple different sensing technologies like cameras, radars, and infotainment systems require tremendous bandwidth
  - Our solution: Ethernet-based ROS 2 driver interfacing with smartmicro sensors
- Open-source on GitHub
  - More convenient and user-friendly
  - Any developer or user can easily get it
  - Possibility to requests and reports using GitHub issues
  - Active support for the driver on GitHub
  - Licensed under MIT, available for commercial use

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ROS 2 DRIVER HIGHLIGHTS

- Bundled with Smart Access
- Data stream for UMRR-11 Type 132 Automotive and UMRR-96 Type 153
- Multi-sensor support connecting up to 10 smartmicro sensors at a time with one ROS 2 node
  - Point cloud data and visualization of up to 10 sensors at once
- ROS 2 driver node configurable using ROS 2 parameters (e.g.: setting IP address, ID, and interface)
- Integration tests based on official ROS 2 testing methods and gtest
- Possibility to replay pre-recorded PCAP data using a multi-docker setup
- Docker support for building and testing
- Docker providing an alternate environment without the need to have ROS 2 on the system
- Driver has a CI/CD pipeline using GitHub actions