

Robot Operating System Market Current Trends and Future Scenarios 2022 - 2032

Growing industrial automation, rising ROS adoption, and demand for collaborative modular robots are fueling the robot operating systems market.

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According to the report, the global [robot operating system market](#) generated \$534.2 million in 2022, and is anticipated to generate \$1.8 billion by 2032, witnessing a CAGR of 12.9% from 2023 to 2032.



The robot operating system (ROS) industry has witnessed substantial growth in recent years, driven by rapid advancements in robotics, increasing demand for automation across various sectors, and the growing adoption of ROS as a core development framework. While not a traditional operating system, ROS serves as an open-source middleware that simplifies the creation of robotic applications by offering a comprehensive software framework and ecosystem.

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ROS significantly reduces the complexity involved in robotics software engineering, accelerating development and simplifying distribution through its robust set of frameworks and toolkits. These features make ROS particularly valuable for researchers and developers, easing its integration into robotics research and development efforts. As a result, continued technological innovation and rising automation levels are expected to drive market growth.

Key factors contributing to this growth include the increasing implementation of automation in industrial environments and the expanding use of ROS among manufacturers, especially in emerging markets. Additionally, the rising demand for collaborative modular robots is expected to further accelerate market expansion over the forecast period. However, high installation and

maintenance costs remain a challenge for broader adoption. On the upside, the growing trend of Robots-as-a-Service (RaaS) presents a promising opportunity to spur market growth globally.

Based on robot type, the articulated robots segment held the highest market share in 2022, accounting for around one-third of the global robot operating systems market revenue, owing to the increased demand for precise assembly line operation, amplified mechanization, and increasing investment in the automation industry. However, the collaborative robots segment is projected to manifest the highest CAGR of 17.6% from 2023 to 2032, owing to the rise in integration of artificial intelligence and machine learning technologies in collaborative robots, along with the development of next-generation cobots.

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Based on application, the CNC machine tending segment accounted for the largest share in 2022, contributing to more than one-fourth of the global robot operating systems market revenue, owing to the growing adoption in the manufacturing sector, especially automotive and FMCG (fast-moving consumer goods) industries, which eventually drives the need for robot operating systems market. However, the PCB handling and ICT segment is expected to portray the largest CAGR of 14.7% from 2023 to 2032 and is projected to maintain its lead position during the forecast period.

Based on industry vertical, the electrical and electronics segment accounted for the largest share in 2022, contributing to around one-third of the global robot operating systems market revenue, owing to the rising adoption of Industry 4.0 principles and smart manufacturing initiatives in the electronics industry, which eventually drives the demand for robot operating systems in the electrical and electronics segment. However, the other segment is expected to portray the largest CAGR of 18.8% from 2023 to 2032 and is projected to maintain its lead position during the forecast period.

Based on region, Asia-Pacific held the highest market share in terms of revenue in 2022, accounting for nearly half of the global robot operating systems market revenue, owing to the increase in consumer awareness about the benefits of robot operating systems, along with the presence of favorable government regulations. However, the Asia-Pacific region is also expected to witness the fastest CAGR of 14.4% from 2023 to 2032, due to the increased customer-centric robot operating systems solutions tailored to the diverse needs of the consumers in this region.

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Leading Market Players:

Kuka AG

Fanuc Corporation

Yaskawa Electric Corp.

Microsoft Corporation
Omron Corporation
Clearpath Robotics
iRobot Corporation
ABB Ltd.
Denso Corporation
Universal Robotics

The report provides a detailed analysis of these key players in the global robot operating systems market. These players have adopted different strategies such as new product launches, collaborations, expansion, joint ventures, agreements, and others to increase their market share and maintain dominant shares in different regions. The report is valuable in highlighting business performance, operating segments, product portfolio, and strategic moves of market players to showcase the competitive scenario.

Recent Industry Partnerships:

1. In October 2022, ABB formed a strategic partnership with U.S.-based Scalable Robotics to enhance its portfolio of user-friendly robotic welding systems. This move aligns with ABB's strategy to build an ecosystem of partners offering accessible solutions across various industries and applications.
2. In December 2021, Clearpath Robotics partnered with Sygnal Technologies Inc., a specialist in drive-by-wire (DBW) systems, to offer the Sygnal DBW conversion kit to the global autonomous vehicle development community. Through this agreement, Clearpath is authorized to sell and support the DBW system worldwide via its component store.

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