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Software-Defined Automation Market Forecasts to 2034 – Global Analysis By Component (Software Platforms, Hardware Infrastructure and Services), Deployment Model, Enterprise Size, Technology Layer, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Software-Defined Automation Market is accounted for $53.6 billion in 2026 and is expected to reach $164.0 billion by 2034 growing at a CAGR of 15.0% during the forecast period. Software-Defined Automation refers to a modern automation paradigm where control and orchestration of industrial processes are driven primarily by software rather than fixed hardware configurations. It separates control intelligence from physical machines, allowing more adaptable and scalable operations across systems. By using cloud platforms, edge computing, and APIs, it enables seamless coordination of workflows in real time. This approach enhances operational agility, supports faster system updates, and reduces reliance on vendor-specific infrastructure. It integrates artificial intelligence for smarter decision-making and improved efficiency. Overall, software-defined automation improves visibility, lowers costs, and strengthens innovation across manufacturing, logistics, energy, and digitally connected industries.

According to the OPC Foundation, over 850 member companies worldwide are adopting OPC UA (Open Platform Communications Unified Architecture), which is a key enabler of software?defined automation by providing vendor?agnostic, interoperable communication standards across industrial devices.

Market Dynamics:

Driver:

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Cloud-native adoption driving software-defined automation

Growing use of cloud-native systems strongly fuels the Software-Defined Automation market. Businesses are moving operations to cloud environments to gain unified management, scalability, and real-time coordination of automated workflows. Cloud platforms make it easier to connect distributed systems and control automation across different sites with greater efficiency. They also speed up software updates and lower reliance on fixed infrastructure. By leveraging cloud-based setups, organizations improve data access, enhance teamwork, and optimize resource usage. This shift encourages adoption of software-defined automation models that are flexible, scalable, and capable of handling advanced automation needs across large, multi-location enterprises worldwide.

Restraint:

High initial implementation complexity

A key limitation for the Software-Defined Automation market is the difficulty involved in initial deployment. Implementing these systems requires combining cloud services, IoT devices, APIs, and existing legacy infrastructure, which creates technical challenges. Many organizations face compatibility issues between old and new systems and often need skilled professionals to manage the transition. Moving from conventional automation to software-defined models also demands careful planning and restructuring of workflows. This complex setup process can extend implementation time and increase the likelihood of operational errors. Consequently, several companies delay adoption even though software-defined automation offers long-term productivity and efficiency improvements.

Opportunity:

Rising adoption of cloud and edge computing

Increasing use of cloud and edge computing technologies creates strong growth opportunities for the Software-Defined Automation market. Cloud systems provide centralized management, scalability, and smooth integration of automation across various locations. At the same time, edge computing processes data closer to devices, which reduces delays and improves system responsiveness. The combination of these technologies enhances flexibility and performance of automation solutions. Many

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organizations are adopting hybrid cloud-edge models to handle complex industrial operations more effectively. As digital transformation expands, cloud and edge integration will remain a key driver of market growth.

Threat:

Vendor lock-in and interoperability issues

Dependence on specific vendors and poor interoperability pose major threats to the Software-Defined Automation market. Many solutions are developed using proprietary technologies, making it difficult for companies to switch providers or integrate multiple systems. This creates vendor lock-in, reducing flexibility and increasing long-term expenses. The absence of common standards across platforms also leads to integration difficulties between different automation tools. Organizations often struggle with compatibility issues when upgrading or expanding their systems. These challenges limit operational freedom and make businesses hesitant to adopt software-defined automation, particularly in environments where multiple vendors and technologies need to work together seamlessly.

Covid-19 Impact:

The COVID-19 outbreak strongly influenced the Software-Defined Automation market by speeding up its adoption in many sectors. Restrictions, labor shortages, and supply chain disruptions pushed companies to adopt remote operations, digital tools, and automated systems. Software-defined automation helped organizations continue operations by enabling centralized monitoring and real-time control of industrial processes without on-site staff. The pandemic emphasized the need for flexible, scalable, and cloud-enabled automation solutions. Although some projects were delayed and budgets were tightened in the early stages, the overall effect of COVID-19 was positive in the long run, driving digital transformation and improving operational resilience across industries worldwide.

The cloud-based segment is expected to be the largest during the forecast period

The cloud-based segment is expected to account for the largest market share during the forecast period because of its strong scalability, flexibility, and simple deployment process. Many organizations prefer cloud platforms to manage automation centrally and coordinate operations across multiple locations more effectively. These solutions support real-time data processing, smooth integration with connected devices, and

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quick software upgrades. They also minimize reliance on on-site infrastructure, which reduces complexity and improves overall cost efficiency. Increasing digital transformation initiatives and the growing need for remote operational capabilities are further boosting cloud adoption.

The healthcare segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the healthcare segment is predicted to witness the highest growth rate because of ongoing digital transformation and the growing need for efficient medical services. Healthcare organizations are increasingly using software-defined automation to improve patient data handling, optimize hospital workflows, and support real-time monitoring of essential systems. The integration of cloud computing, artificial intelligence, and IoT technologies enhances diagnostic precision and operational performance. Rising cost pressures and the demand for better patient care are further boosting adoption. In addition, the expansion of telemedicine and smart hospital systems is driving strong growth in this market segment worldwide.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share because of its highly developed technology infrastructure and early shift toward digital transformation. The region is supported by the strong presence of leading technology firms, significant investment in cloud technologies, and extensive adoption of automation across industries like manufacturing, healthcare, and IT services. Businesses in the United States and Canada are actively implementing AI, IoT, and cloud-based systems to enhance efficiency and scalability. Government support and high research and development expenditure also contribute to market expansion. With its mature industrial base, North America continues to lead the global software-defined automation industry.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR because of fast-paced industrial growth, digital adoption, and increasing use of advanced technologies. Major economies like China, India, Japan, and South Korea are investing significantly in smart factories, cloud platforms, and industrial IoT systems. The rising need for affordable automation solutions and the expansion of manufacturing activities are driving market expansion. Government support for digital infrastructure

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and Industry 4.0 initiatives further accelerates adoption. In addition, growing investments from global technology firms are enhancing regional capabilities, making Asia-Pacific the fastest-growing region in the software-defined automation industry.

Key players in the market

Some of the key players in Software-Defined Automation Market include Siemens AG, Rockwell Automation, Inc., Schneider Electric SE, ABB Ltd, Emerson Electric Co., Honeywell International Inc., Mitsubishi Electric Corporation, General Electric Company, Hitachi, Ltd., Cisco Systems, Inc., Nokia Corporation, PTC Inc., Advantech Co., Ltd., Belden Inc., Red Hat, Inc., VMware, Inc., Stratus Technologies and Intel Corporation.

Key Developments:

In June 2026, Emerson Electric Co. inked a strategic collaboration with SiMa.ai to integrate SiMa.ai’s MLSoC (Machine Learning System on Chip) technology into Emerson’s industrial PCs. The integration of advanced artificial intelligence capabilities into industrial personal computers will enable Emerson to perform real-time data analysis in factory and remote site environments.

In December 2025, Mitsubishi Electric Corporation announced that it has invested in and signed a strategic alliance agreement with Tulip Interfaces, Inc., a Massachusetts, USA-based leader no-code platforms for system operations without programming to support manufacturing digitalization. Tulip Interfaces is also an expert in introducing manufacturing-targeted microservices, which divide large-scale systems into small, independent services to enable flexible development and operations.

In November 2025, Schneider Electric announced a two-phase supply capacity agreement (SCA) totaling $1.9 billion in sales. The milestone deal includes prefabricated power modules and the first North American deployment of chillers. The announcement was unveiled at Schneider Electric'sInnovation Summit North America in Las Vegas, convening more than 2,500 business leaders and market innovators to accelerate practical solutions for a more resilient, affordable and intelligent energy future.

Components Covered:

- Software Platforms

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- Hardware Infrastructure
- Services

Deployment Models Covered:

- On-Premises
- Cloud-Based
- Hybrid

Enterprise Sizes Covered:

- Small & Medium Enterprises (SMEs)
- Large Enterprises

Technology Layers Covered:

- Network Automation
- Process Automation
- IT Infrastructure Automation
- Industrial & Operational Automation

End Users Covered:

- Manufacturing
- Energy & Utilities
- Healthcare

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- BFSI (Banking, Financial Services & Insurance)
- Retail & E-Commerce
- Transportation & Logistics
- IT & Telecom
- Government & Public Sector

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain
  - Netherlands
  - Belgium
  - Sweden

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- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil
- Argentina
- Colombia

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- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa
  - Egypt
  - Morocco
  - Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

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- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

- Company Profiling
  - Comprehensive profiling of additional market players (up to 3)
  - SWOT Analysis of key players (up to 3)
- Regional Segmentation
  - Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)
- Competitive Benchmarking
  - Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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