

AI-Powered Network Automation Market Forecasts to 2034 – Global Analysis By Component (Solutions and Services), Deployment Model, Organization Size, Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global AI-Powered Network Automation Market is accounted for \$19.3 billion in 2026 and is expected to reach \$42.0 billion by 2034 growing at a CAGR of 10.1% during the forecast period. AI-powered network automation refers to the use of artificial intelligence and machine learning technologies to autonomously manage, configure, optimize, and secure computer networks with minimal human intervention. These systems analyze network telemetry, traffic patterns, and configuration data to predict issues, enforce policies, and execute remediation actions. The technology encompasses intent-based networking, self-healing capabilities, and predictive analytics that transform manual network operations into intelligent, adaptive processes. AI-powered automation serves enterprise, telecom, and cloud provider networks seeking operational efficiency and reliability.

Market Dynamics:

Driver:

Network complexity growth

The exponential growth in network scale, device diversity, and service requirements is overwhelming traditional manual management approaches, driving AI automation adoption. Cloud-native architectures, multi-cloud deployments, and IoT proliferation create management complexity beyond human capacity. AI systems process vast telemetry datasets to identify anomalies and optimize performance continuously. The

economic pressure to reduce operational expenditures while maintaining service quality accelerates automation investments. Network reliability demands require predictive capabilities that only AI can provide at scale.

Restraint:

Trust and control concerns

Network administrators and organizations express significant concerns regarding ceding control to automated systems for critical infrastructure management. The opacity of AI decision-making processes creates accountability challenges when automated actions cause service disruptions. Fear of cascading failures from automated remediation limits willingness to enable full autonomy. Regulatory requirements for human oversight in certain industries constrain automation scope. These trust deficits necessitate gradual adoption with extensive testing and validation.

Opportunity:

Zero-touch provisioning

The advancement of zero-touch network provisioning and management presents substantial opportunities for fully autonomous network deployment. AI-driven systems can automatically discover devices, apply configurations, and establish policies without manual intervention. New branch offices, data centers, and cloud resources are instantiated with pre-defined operational parameters. The reduction in deployment time from weeks to hours transforms network agility. These capabilities enable rapid business expansion and disaster recovery without specialized technical staffing.

Threat:

Cybersecurity vulnerabilities

AI-powered automation systems themselves become attractive targets for cyberattacks seeking to manipulate network behavior at scale. Compromised automation platforms could propagate malicious configurations across entire networks instantaneously. Adversarial attacks on machine learning models may deceive anomaly detection systems. The concentration of control in automation platforms creates single points of failure. Security frameworks for AI-driven networks remain immature compared to traditional approaches.

Covid-19 Impact:

The COVID-19 pandemic accelerated AI-powered network automation adoption by demonstrating the limitations of manual management for distributed workforces. Remote work surges required rapid network scaling and policy adjustments that manual processes could not support. Operators prioritized automation investments to maintain service quality with reduced on-site staffing. The crisis highlighted the value of self-healing and predictive capabilities for network resilience. Post-pandemic hybrid models sustain demand for autonomous network management.

The services segment is expected to be the largest during the forecast period

The services segment is expected to account for the largest market share during the forecast period, due to extensive demand for consulting, integration, and managed services supporting AI automation deployment. Organizations require expert guidance to design automation strategies and select appropriate technologies. Implementation services ensure proper integration with existing network management tools and workflows. Ongoing managed services provide model monitoring, retraining, and performance optimization. The complexity of multi-vendor AI automation ecosystems drives sustained professional service demand.

The cloud-based segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the cloud-based segment is predicted to witness the highest growth rate, driven by scalability and reduced infrastructure requirements for AI automation platforms. Cloud deployment enables centralized management of distributed network environments from a single interface. Pre-trained models and shared intelligence across customer networks improve automation effectiveness. The elasticity of cloud resources supports fluctuating analysis and processing demands. Growing confidence in cloud security and data handling accelerates adoption.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to early adoption of advanced network technologies and strong AI research capabilities. The United States leads with significant enterprise and telecom investments in intelligent automation. Major technology vendors concentrate their

product development and marketing resources. Venture capital availability fuels innovation in network AI startups. Regulatory frameworks support data-driven network management approaches.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by massive network expansion and government digital infrastructure initiatives. China leads with extensive AI integration in network management by major operators. India's growing digital economy creates demand for automated network operations. Southeast Asian markets invest in smart city and Industry 4.0 infrastructure, requiring intelligent management. Government programs supporting domestic technology development strengthen regional capabilities.

Key players in the market

Some of the key players in AI-Powered Network Automation Market include Cisco Systems Inc., International Business Machines Corporation, Hewlett Packard Enterprise Company, Juniper Networks Inc., Nokia Corporation, Telefonaktiebolaget LM Ericsson, Huawei Technologies Co., Ltd., VMware Inc., Oracle Corporation, Microsoft Corporation, Google LLC, Amazon Web Services Inc., Extreme Networks Inc., Fujitsu Limited, NEC Corporation, Amdocs Limited, Infosys Limited and Capgemini SE.

Key Developments:

In May 2026, Cisco Systems Inc. launched an AI-driven network automation platform with intent-based configuration and self-healing capabilities, reducing manual intervention for enterprise campus and data center networks.

In April 2026, International Business Machines Corporation expanded its Alops for networks solution with generative AI-powered troubleshooting, enabling natural language diagnosis and automated remediation recommendation generation.

In March 2026, Hewlett Packard Enterprise Company introduced a cloud-native network automation suite with embedded machine learning for predictive capacity planning and automated policy enforcement across hybrid infrastructure.

Components Covered:

Solutions

Services

Deployment Models Covered:

Cloud-Based

On-Premises

Hybrid Deployment

Organization Sizes Covered:

Large Enterprises

Small & Medium Enterprises

Telecom Operators

Technologies Covered:

Machine Learning

Deep Learning

Natural Language Processing

Computer Vision

Reinforcement Learning

Predictive Analytics

Intent-Based Networking

Applications Covered:

Network Traffic Management

Network Security Automation

Self-Healing Networks

Cloud Network Management

5G Network Automation

IoT Network Optimization

Data Center Automation

End Users Covered:

Telecom Operators

Cloud Service Providers

Enterprises

Government & Defense

BFSI Organizations

Healthcare Institutions

Manufacturing Enterprises

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

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

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
- 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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