

Network Assurance Market Forecasts to 2034 – Global Analysis By Component (Software, Hardware and Services), Deployment Mode, Organization Size, Technology, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Network Assurance Market is accounted for \$4.1 billion in 2026 and is expected to reach \$13.2 billion by 2034 growing at a CAGR of 15.7% during the forecast period. Network assurance refers to software, hardware, and services that monitor, validate, and optimize the performance, reliability, and security of communication networks. These systems integrate performance monitoring, fault management, configuration management, predictive analytics, and service assurance tools to ensure consistent quality of service. By leveraging AI, machine learning, and visualization technologies, network assurance platforms enable telecom operators, cloud service providers, enterprises, and government agencies to proactively detect issues, optimize resources, and deliver resilient connectivity across 5G, SD-WAN, and enterprise networks.

Market Dynamics:

Driver:

5G network complexity surge

5G standalone network deployment is generating unprecedented monitoring complexity as operators manage heterogeneous network environments combining legacy 4G infrastructure, virtualized 5G core functions, open RAN radio units, and cloud-native application workloads across centralized, distributed, and edge computing tiers simultaneously. Traditional element management systems lack the cross-layer

correlation and real-time anomaly detection capabilities required to assure service quality across software-defined 5G architectures, where performance degradation can originate from hardware, virtualization, orchestration, or application layers. This complexity is compelling operators to invest in AI-powered network assurance platforms capable of autonomous root cause analysis and proactive fault remediation at the speed and scale demanded by commercial 5G network operations.

Restraint:

Multi-vendor integration complexity

Network assurance platform deployment across heterogeneous multi-vendor network infrastructures requires extensive custom integration work to normalize telemetry data from diverse proprietary element management systems, network management systems, and orchestration platforms that use incompatible data models, APIs, and alarming conventions. The absence of universal network telemetry standardization despite progress in OpenConfig, YANG models, and gNMI streaming telemetry means that large operators managing equipment from ten or more infrastructure vendors face substantial professional services costs and deployment timeline extensions to achieve comprehensive network visibility. These integration barriers create total cost of ownership challenges that disproportionately affect mid-sized operators lacking dedicated network analytics engineering teams capable of building and maintaining complex multi-source data ingestion pipelines.

Opportunity:

AIOps network automation adoption

Growing adoption of AIOps frameworks within telecom network operations centers is creating demand for network assurance platforms that serve as the primary telemetry data foundation for AI-driven closed-loop network automation use cases, including predictive fault prevention, capacity optimization, energy efficiency management, and automated service level agreement breach response. Network operators reporting significant operational expenditure reductions from AIOps-driven automation of routine fault diagnosis and resolution workflows are building business cases for enterprise-wide network assurance platform investments that enable higher automation coverage ratios. The convergence of network assurance, service orchestration, and AI-powered automation into integrated network intelligence platforms represents a significant market expansion opportunity beyond traditional point monitoring solutions.

Threat:

Cloud-native observability tool displacement

The rapid maturation of cloud-native observability platforms, including Datadog, New Relic, and open-source OpenTelemetry-based stacks originally designed for application performance monitoring, is enabling technology-capable operators to repurpose general-purpose observability tools for network function monitoring, potentially displacing specialized network assurance platforms in virtualized network environments. As 5G network functions migrate entirely to cloud-native containerized architectures, the technical distinction between network monitoring and application observability narrows, allowing hyperscaler-native monitoring tools bundled with cloud infrastructure to compete with dedicated network assurance products at lower incremental cost for operators already committed to public or private cloud deployment models.

Covid-19 Impact:

Pandemic-driven traffic surges across enterprise VPN, video conferencing, and streaming platforms exposed network capacity and quality monitoring gaps, triggering emergency procurement of network assurance capabilities at major operators and enterprises. The acceleration of network virtualization and cloud migration programs during remote work periods increased demand for cloud-native assurance platforms capable of monitoring hybrid physical-virtual network architectures. Post-pandemic, sustained hybrid work traffic patterns and accelerated 5G deployment timelines continue to drive network assurance investment.

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

The service segment is expected to account for the largest market share during the forecast period, due to the critical priority operators place on end-to-end service quality validation across complex multi-layer network paths from customer premises equipment through access, aggregation, core, and internet exchange infrastructure to application delivery platforms. Service capabilities that correlate customer-facing quality metrics with underlying network element performance indicators enable operations teams to rapidly isolate degradation sources across multi-vendor infrastructure and prioritize remediation actions based on subscriber impact severity. Enterprise and carrier customers paying premium prices for guaranteed service level agreement performance require continuous automated service assurance monitoring as contractual compliance

evidence supporting dispute resolution and penalty avoidance.

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

Over the forecast period, the cloud segment is predicted to witness the highest growth rate, driven by the migration of network assurance workloads from on-premises hardware-based monitoring systems to cloud-native SaaS platforms offering elastic scalability, continuous feature updates, and lower total cost of ownership for operators modernizing their network operations technology stacks. Cloud-based network assurance platforms enable centralized visibility across geographically distributed network infrastructure without requiring dedicated monitoring hardware at each site. Vendors, including VIAVI Solutions Inc, RADCOM Ltd, and Accedian Networks Inc are delivering cloud-native assurance solutions purpose-built for virtualized 5G and SD-WAN network environments that traditional on-premises probe architectures cannot efficiently monitor.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to advanced 5G network deployment progress at major carriers, combined with high enterprise SD-WAN and cloud connectivity adoption, driving sophisticated network assurance requirements across telecom, financial services, and healthcare verticals. United States-headquartered vendors, including Cisco Systems Inc, IBM Corporation, NETSCOUT Systems Inc, and Keysight Technologies Inc., represent a significant share of global network assurance platform revenue generation. Federal government network security monitoring mandates and critical infrastructure protection requirements are driving substantial public sector network assurance procurement beyond commercial operator investment.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to massive 5G network rollout investment across China, India, South Korea, Japan, and Australia, creating large-scale new network assurance procurement requirements as operators build out standalone 5G core and open RAN infrastructure requiring modern cloud-native monitoring platforms. China Telecom operator's 5G network scale, representing the world's largest deployed 5G subscriber base, generates proportionally large network operations technology investment, including assurance platform modernization. India operators' 5G expansion by Reliance Jio and Bharti Airtel

is driving network assurance platform adoption across newly virtualized core network architectures.

Key players in the market

Some of the key players in Network Assurance Market include Cisco Systems Inc, IBM Corporation, Juniper Networks Inc, Broadcom Inc, Huawei Technologies Co Ltd, Ericsson, Nokia Corporation, NETSCOUT Systems Inc, Accedian Networks Inc, EXFO Inc, RADCOM Ltd, VIAVI Solutions Inc, Spirent Communications plc, Hewlett Packard Enterprise, Dell Technologies Inc, Keysight Technologies Inc, and Anritsu Corporation.

Key Developments:

In April 2026, Nokia Corporation introduced its AVA Network Operations suite with generative AI-powered network incident summarization and automated resolution recommendation capabilities designed for large-scale 5G network operations centers.

In March 2026, RADCOM Ltd secured a contract with a Tier-1 Asia Pacific operator to deploy its cloud-native 5G assurance solution, providing real-time subscriber experience monitoring across the operator's nationwide standalone 5G core network.

In January 2026, VIAVI Solutions Inc launched its Observer Apex 10 cloud-native network assurance platform with integrated AI-powered root cause analysis supporting simultaneous monitoring of 5G standalone, SD-WAN, and hybrid cloud environments.

Components Covered:

Software

Hardware

Services

Deployment Modes Covered:

Cloud

On-Premises

Hybrid

Organization Sizes Covered:

Large Enterprises

Small & Medium Enterprises

Organization Sizes Covered:

Large Enterprises

Small & Medium Enterprises

Technologies Covered:

AI and Machine Learning

Analytics and Visualization

Network Functions Virtualization

Software Defined Networking

Applications Covered:

5G Network Assurance

SD-WAN Assurance

Data Center Assurance

Enterprise Network Assurance

Network Slicing Assurance

Real-Time QoE Monitoring

End Users Covered:

Telecom Service Providers

Cloud Service Providers

Enterprises

Managed Service Providers

Government

Regions Covered:

North America

United States

Canada

Mexico

Europe

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France

Italy

Spain

Netherlands

Belgium

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Poland

Rest of Europe

Asia Pacific

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India

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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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