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IBM Cloud Pak for Network Automation

Zero-touch network operations with AI-powered automation

Communications Service Providers (CSPs) provide a vital lifeline for citizens and enterprises globally, and even more so today, as unpredictable events can drive massive changes in network needs and traffic patterns overnight. Modern challenges require modern networks, and CSPs must embrace cloud and virtualization as they look to deliver the 5G and edge computing services that will drive growth and improve customer experiences. Increasingly, CSPs consider automation and AI as essential to their business.

"Intelligent automation is a pre-requisite for CSPs in their journey to remain profitable and relevant. Without it 5G will simply be more of the same." [1]

AI and automation are two drivers of this transformation. In fact, according to Appledore research, the network automation software market will grow 5x in next 5 years – reaching up to $25B by 2025. [2]
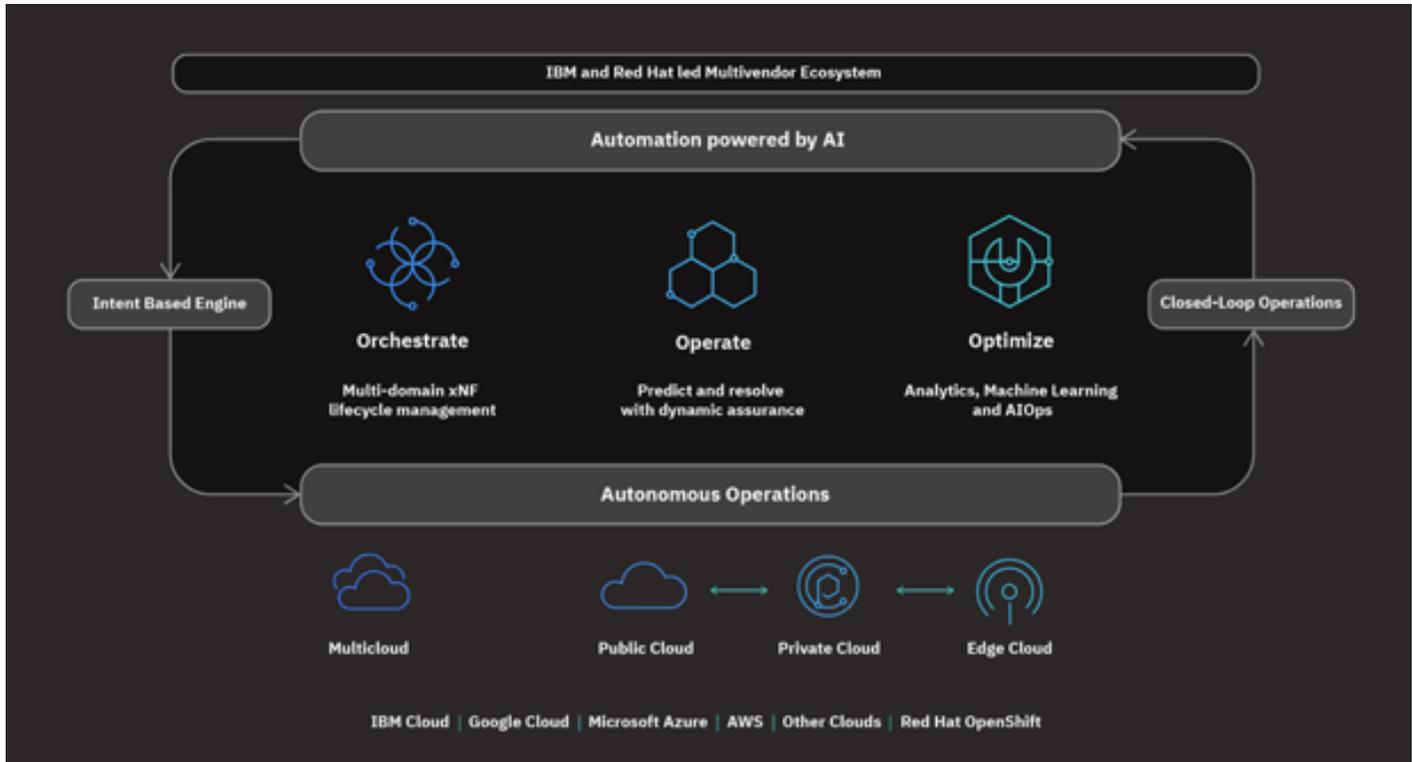
In fact, 76% of leading CSPs surveyed are using or plan to use AI to automate self-diagnostics and problem detection. [3] Yet limited automation and the lack of real-time visibility across the total network, and

Highlights

— Improve business process and service assurance while lowering operations costs.
— Design, test and deploy services in minutes instead of days or weeks and evolve to zero-touch operations.
— Run on any cloud, anywhere and manage any network vendor infrastructure.
— Includes Watson® AIOps technology, driving predictive insights to improve network efficiency.
— Open IBM and Red Hat® ecosystem to rapidly onboard certified VNFs/CNFs.

dynamic converged environments, have hindered their ability to deliver services fast enough and substantially reduce costs.

IBM Cloud Pak® for Network Automation is an AI-powered, telco cloud platform that enables the automation of network operations so CSPs can transform their networks, evolve to zero-touch operations, reduce OPEX and deliver services faster. CSPs can now rapidly design, deploy, and scale new services in minutes instead of days and improve customer responsiveness by up to 6x. [4]

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Solution components

IBM Cloud Pak for Network Automation provides a full suite of automation and AI features to orchestrate, operate and optimize multivendor network functions and services while evolving to autonomous operations. Watson® AIOps technology is integrated with this platform so you can gain insight to both improve client experiences and drive network efficiencies. In addition, IBM and Red Hat® open source industry leadership, coupled with a joint multivendor ecosystem, allows CSPs to rapidly onboard certified VNFs/CNFs.

Orchestrate: The intent-based orchestration engine models the desired operational state of the service rather than manually programming workflows. The utilization of normalized lifecycle models supported by CI/CD and DevOps toolchains enables services to be rapidly designed and activated to increase competitiveness and take advantage of new 5G and edge capabilities.

Operate: Closed-loop operations allows CSPs to proactively detect and remediate incidents to improve customer SLAs and experiences, while maintaining high network availability.

Optimize: The utilization of advanced analytics, machine learning and AIOps further helps to discovers hidden patterns and trends so CSPs can continuously optimize network operations and performance with minimal human intervention.

Technology

IBM Cloud Pak for Network Automation allows CSPs to virtualize and modernize Operations Support Systems (OSS) and Business Support Systems (BSS). This enables the support of dynamic operations management for fast-changing virtual or

container network services in production, and delivers these key capabilities:

Normalized lifecycle modeling: For all network functions to enable model-driven automation supported with CI/CD and DevOps toolchains.

Intent-driven orchestration: Model the desired service operational state rather than pre-programming workflows.

Closed-loop operations: Automatically adjust network and service resources, proactively responding to dynamic operational conditions.

AI and machine learning: AIOps provides insight across complex datasets to automate diagnostics, detect anomalies and initiate runbooks.

Intelligent analysis: Draw inferences across data silos via patented AI entity linking.

Predictive insights: Identify potential service impacts with real-time and historical blast-radius and topology mapping.

Deployment options

IBM offers a revolutionary approach that helps CSPs evolve to zero-touch automation throughout the plan, deploy and optimize cycle of network operations:

Plan	*Onboard with ease and confidence: Quickly design, test and certify CNF, VNF and network services.*
Deploy	*Orchestrate and instantiate with flexibility: Implement complex services and networks in minutes with minimal effort and skills.*
Optimize	*Automated change management: Upgrade or change one or more components of network services automatically.*

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Summary

IBM Cloud Pak for Network Automation allows CSPs to reduce operational costs, deliver services faster, easily onboard network functions from any vendor and evolve to zero touch operations.

Lower Costs
Improves business process and service assurance while lowering operations costs.

IBM's telco cloud platform allows users to continuously optimize both business processes and network operations. CSPs can gain insights across complex datasets to proactively detect and resolve anomalies with closed-loop operations before they impact end-users. Customer responsiveness can now be improved by up to 6x.

Deploy Faster
Accelerates the delivery of networks and services through AI-powered automation.

It provides a single point of control with intent driven orchestration so users can now model the desired service operational state, rather than manually pre-programming workflows. CSPs can rapidly design, deploy and scale new services in minutes instead of days with up to 80% less operations effort.

Run Anywhere
Runs on any cloud, anywhere, and manages any network vendor infrastructure.

IBM's telco cloud platform is open and optimized for hybrid multicloud, multi-vendor core, access and edge networks. It's built on Red Hat® OpenShift, the market-leading container platform, and offers an ecosystem to rapidly onboard certified virtual network functions and container network functions (VNFs/CNFs). Almost 30% of the top Fortune Global 500 companies use OpenShift, including two of the top three telecommunications companies.

Next Steps

Unlock the value of IBM Cloud Pak® solutions with the IBM Partner Ecosystem.

IBM Cloud Pak solutions host a growing ecosystem of technology partners. As an open, Kubernetes-based platform, we integrate with an array of tech solutions that enhance what we do. IBM Business Partners play an integral part in empowering your organization to build the cloud business solutions you need. To find a partner, go to ibm.com/partnerworld/public/find-partner-solution.

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For more information

To learn more about IBM Cloud Pak for Network Automation, please contact your IBM representative or IBM Business Partner, or visit the following website: ibm.com/cloud-pak-for-network-automation

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1 Appledore paper: *Take a revolutionary path to 5G cloud native*

https://www.ibm.com/downloads/cas/WOKLW0GD

2 Appledore Market Forecast October 2019

https://appledoreresearch.com/report/network-automation-software-forecast-2020-to-2025

3 IBM Institute for Business Value: *"Re-envisioning the CSP network"*

https://www.ibm.com/downloads/cas/73NVRNRY

4 Nextel case study

https://www.ibm.com/case-studies/nextel-networkops-video