

BROCHURE

Agentic AI-Driven Lifecycle Management for Cloud-Native Networks

Enable self-healing 5G and edge operations through Agentic AI, observability and closed-loop automation



Overview

Enabling Autonomous, AI-driven Network Operations

Telcos are rapidly transitioning to cloud-native, Kubernetes-based architectures to support 5G, edge computing, and hybrid cloud deployments. However, this shift introduces new operational complexity—dynamic scaling, distributed topologies, and deep interdependencies across network, platform, and application layers, which are ineffective under traditional manual and rule-based operations.

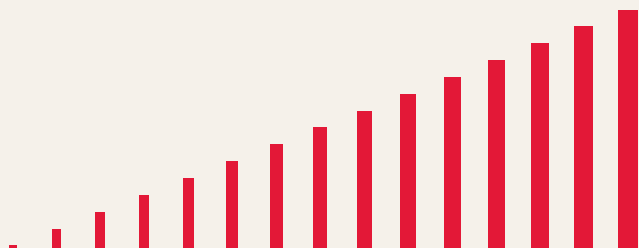
Agentic AI-driven lifecycle management solution has emerged as a critical capability in this environment. It enables the correlation of signals, the prediction of failures, the dynamic optimization of policies and actions, and autonomous, closed-loop decision-making at cloud scale.

While over 85% of operators aspire to achieve autonomous network level 4+ maturity by 2030, only 4% have reached that maturity today. Most telcos continue to have delayed fault detection and reactive remediation, manifesting in SLA breaches and higher costs.

TechM's solution, powered by Red Hat OpenShift and OpenShift AI, addresses this gap by delivering automated, intent-driven operations capabilities that enable fully autonomous, closed-loop networks.

Description

The solution automates the end-to-end telco cloud lifecycle, from provisioning physical bare-metal infrastructure to enabling cloud-native network functions (CNFs) and virtualized network functions (VNFs). OpenShift AI operates as an intelligent execution layer between observability and orchestration. It ingests high-fidelity telemetry events and alarm data via Vector and Kafka and runs anomaly detection, predictive analysis, and intent optimization. The insights generated by OpenShift AI are then fed into the Tech Mahindra Service Orchestrator and the Red Hat Ansible Automation Platform for policy-controlled remediation.



Core Components



Red Hat OpenShift: Provides a unified Kubernetes runtime for CNFs, VNFs, and AI services. By deploying OpenShift natively on bare-metal infrastructure, telcos benefit from eliminating virtualization overhead, simplifying operations, and reducing software licensing costs.



Tech Mahindra Service Orchestrator: Translates OSS/ITSM inputs into intent-based actions, enabling deep integration with telco-specific domains and ensuring alignment to TM Forum's Open Digital Architecture (ODA).



Red Hat Ansible and Advanced Cluster Management (ACM) : Enable centralized event-driven automation for day-0 to day-2 lifecycle management across hybrid/multi-cloud clusters.



Embedded Security: Enforces identity-aware access, policy-as-code, and automated secrets management for highly distributed workloads.

Unlike rule-based or siloed tools that focus solely on automation, this solution enables Agentic NetOps. It promotes proactive self-healing over reactive fixes by leveraging AI to enable cross-domain signal correlation, failure prediction, and autonomous, closed-loop decision-making at a cloud scale.

Benefits



Shift from reactive operations to autonomous recovery with proactive assurance and self-healing capabilities that reduce mean time to repair (MTTR) by 50-75%.



Maintain SLA compliance while drastically reducing network outages for latency-sensitive 5G services through AI-correlated network and platform signals, targeting 99.95%+ uptime.



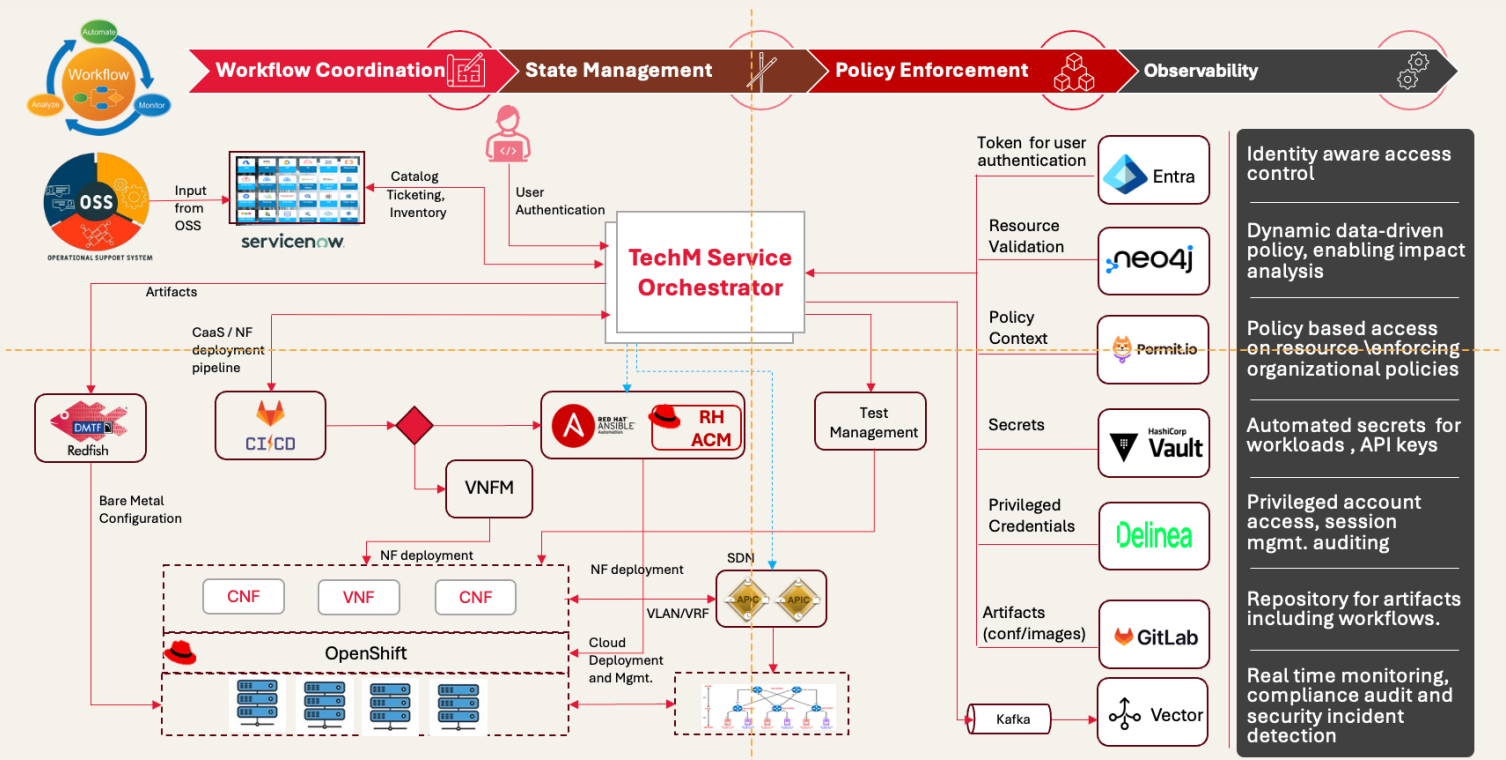
Optimize resource utilization by deploying Kubernetes on bare metal, reducing operational expenses (OPEX) by more than 30% and improving TCO by up to 18%.



Deploy a scalable foundation to accelerate autonomy maturity to TMForum Autonomous Network Level 4, while paving the path for Level 5.



Optimize infrastructure efficiency by eliminating duplicate, redundant operational stacks, thereby reducing energy consumption by millions of kilowatt-hours across large-scale deployments.



Functional architecture for agentic AI Driven Lifecycle management for cloud-native networks



Moving from Cloud-Native to Autonomous

The transition to cloud-native 5G is no longer optional—but autonomy is what determines long term performance, resilience, and cost efficiency. Telecom operators relying on legacy, rule-based management will struggle to keep up. Sustained performance now depends on the ability to move from reactive operations to autonomous, intent-driven networks.

Tech Mahindra's Agentic AI-Driven Lifecycle Management for Cloud-Native Networks enables this transition by delivering real-time intelligence, closed-loop automation, and continuous optimization at scale.

TechM Advantage:



Enables organizations to revive their stalled journey toward a cloud-native architecture.



Extends the capabilities of Red Hat platforms through deep telco expertise, a proven netOps.ai framework, and over 5,000 Red Hat-certified professionals.



Introduces constant topology changes, workload mobility, and latency-sensitive demands through distributed cloud-native networks.



Moves telcos and enterprises beyond GenAI experimentation to practical, agentic AI deployment at scale.



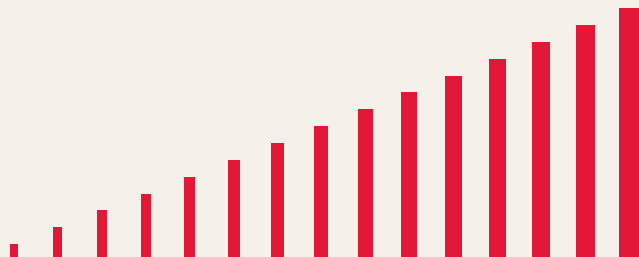
Embeds agentic intelligence across the service lifecycle to enable proactive assurance, closed-loop automation, and ecosystem-aligned operations.



Integrates Service Orchestrator seamlessly with Red Hat's platforms to accelerate real-world Level 4+ autonomous network deployments for CSPs globally.



Establishes a 'common telco cloud' that keeps networks performant, compliant, and cost-efficient.



Visit www.techmahindra.com/alliance/red-hat/ to schedule an assessment and identify tailored ROI opportunities for cloud-native network operations..

About Tech Mahindra

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 147,000+ professionals across 90+ countries helping 1100+ clients, Tech Mahindra provides a full spectrum of services including consult-ing, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal, which recognises global companies that are actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federation of companies. For more information on how TechM can partner with you to meet your Scale at Speed™ imperatives, please visit <https://www.techmahindra.com/>



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