

Telco Service Assurance

Fault & Performance Management

Solution Brief

Context

Telco/Communication Service Provider operators rely heavily on Packet Core and Transport networks for delivering essential communication services; these networks have significantly evolved to incorporate IP-based architectures, virtualization, SDN, and segment routing to meet the demands of 5G, IoT, and cloud computing. This evolution necessitates modern performance, fault management, and service assurance solutions that enable Telcos/CSPs to effectively manage complexity, ensure service quality, and drive new revenue streams

Challenges

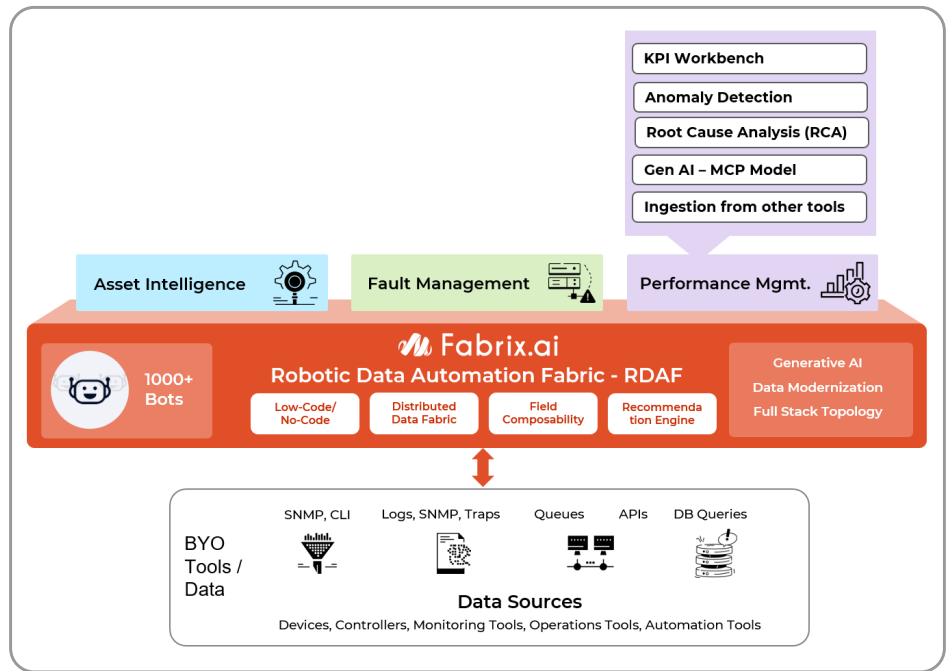
Telco/Communication Service Provider face evolving challenges in managing their networks using traditional or legacy solutions. These include:

- ▶ **Data Volume, Variety, and Velocity:** The increasing volume, variety, and speed of data in modern networks make it difficult to effectively manage performance and capacity using legacy systems.
- ▶ **Multi-vendor, Multi-Domain Complexity:** The evolution towards cloudified, cross-domain operations creates complexity that legacy solutions struggle to handle, requiring more scalable & flexible solutions.
- ▶ **Need for Advanced Analytics:** There's a growing need for advanced analytics, including machine learning and automation, to proactively manage networks and deliver value, which may not be sufficiently provided by older systems.

Addressing these demands requires a modern AI-powered Telco service assurance solution that leverages AI, automation, and cloud-native principles to provide the necessary agility, scalability, and proactive capabilities in managing the network

Solution Overview

Fabrix.ai's Modern AI-powered Telco Service Assurance solution that unifies observability and AIOps. Its Performance and Fault Management module delivers near real-time visibility, fault detection, and operational insights across complex, multi-vendor networks. The integrated AIOps capabilities provide cross-domain operational data correlation, automated root cause analysis, and automated workflows for incident management, data collection, and verification. Thus empowering CSPs and Telecom Operators to overcome the limitations of legacy systems and achieve proactive network management.



- ▶ **Real-time Visibility:** Gain real-time insights into network performance and operational health.
- ▶ **AI-Driven Proactive Management:** Leverage AI-based and automation to predict and prevent network issues before they impact service, through features such as anomaly detection, forecasting, and intelligent alerting.
- ▶ **Single Pane of Glass (Operations Visibility):** Provides a unified view across network domains, eliminating data silos and enabling holistic network management.
- ▶ **Cross-Domain Correlation:** Correlates events, alarms, and performance data across different network layers and domains to identify dependencies and pinpoint the root cause of issues.
- ▶ **Noise Reduction:** Intelligent filtering and correlation capabilities reduce alert fatigue by focusing on the most critical events and suppressing irrelevant or redundant alarms.
- ▶ **Accelerated Root Cause Analysis:** Leverage AI-based and correlation to quickly identify the underlying causes of network problems, reducing mean time to repair (MTTR).
- ▶ **Streamlined Incident Management:** Reduce downtime and improve issue resolution with automated incident management, alert correlation, bi-directional ticketing integration, and on-demand automation.
- ▶ **Efficient Integration and Customization:** Easily integrate with existing tools and infrastructure, and customize data collection and analysis to meet unique requirements.
- ▶ **Flexible Deployment:** Deploy the solution on-premises, in the cloud, or in hybrid environments to match operational needs.
- ▶ **Addressing Legacy Challenges:** Fabrix.ai Telco Service Assurance is designed to overcome the limitations of traditional solutions in dealing with legacy devices (non-standard outputs, lack of APIs), multi-vendor diversity (diverse protocols, no standardized data model), large datasets, and raw data that lacks context.

By offering these capabilities, Fabrix.ai Telco Service Assurance empowers CSPs and Telco operators to move beyond rigid, manual, and limited traditional solutions and embrace a more agile, proactive, and intelligent approach to network management.

Key Features/Highlights:

Category	Key Features
Discovery & Inventory	Automated network asset discovery using multiple protocols and integrations
	CMDB Synchronization: Automatically sync discovered asset data with CMDB systems to maintain data consistency
Unified Visibility / Single Pane of Glass	Single pane of glass view across multiple network domains, including RAW Packet Core Transport and Datacenter
	South-bound and North-bound integrations with OSS/BSS, 3rd party BI tools, Datalakes etc.
Asset Intelligence	Capacity analysis to find free network capacity and over/under-provisioned resources by mapping network topology
	Tracks asset lifecycle, including End-of-Life (EoL) and End-of-Support (EoS) status.
	Accelerate change management showing impacted apps during network/OS upgrades.
	Track compliance against plan of record, best practices, golden images and IT controls.
Real-Time Insights & Monitoring	Real-time performance and operational health insights
	Ingestion of metrics, events, syslogs from n-number of resources
	Real-time network topology and operational data overlay
	Geo mapping and Network data path visualization/traceability
AI & Analytics	Anomaly detection, upper bound, lower bound deviations
	Auto learning of baselines, seasonality & trends
	KPI forecasting and KPI workbench for on-demand analytics
	Predictive insights and alerting
Intelligent Alerting & Incident Management	Intelligent alerting with dynamic thresholds
	Auto alert rise and clear
	Alert deduplication and correlation across domains and full-stack
	Automated incident management with bi-directional integration with Ticketing Systems (ex: ServiceNow, PagerDuty, FreshDesk etc.)
AI-Powered Correlation	Advanced Correlation Engine: Correlates events and data using unsupervised ML clustering, full-stack context, time windowing, and graph database techniques for multi-level correlation.
Automated Root Cause Analysis	Automated discovery of root causes, including scope of impact, recommendations, and suggested actions
	Similar Incident Analysis: Find and show similar past incidents to help resolve issues faster.
Automation & AI Agents	On-demand or trigger-based automation to invoke native or 3rd party workflows for diagnostics, data collection/verification, and remediation
	Create your own agents with no-code. Pre-built agents include: Anomaly Detector, Event Correlator Agent, and more.
	AI Copilot chat assistant to support conversational queries to automate artifact creation or respond to queries on operational data.
Data Enrichment & Contextualization	Syslog/Event data enrichment and contextualization (ex: reasoning, suggested actions extraction from vendor KB)
	Powerful Jinja2 and Mako templating engine for data/event processing and payload generation
	Built-in support for TextFSM templates enabling efficient processing and structured data extraction of device CLI outputs
Visualization & Customization	Storyboards for creating appealing visualizations to convey outcomes, data/process flow covering multiple domains
	Intuitive UI to upload any SNMP MIB to extract collection groups, notifications, scalars, tables, and compile MIB to JSON
	Easy to create or update SNMP profiles to customize inventory and performance data collection as per needs
Reporting	Can export dashboards into reports (Excel/CSV/PDF) for offline processing
	On-demand and Scheduling of reports.
	Dashboard report consisting of metric anomalies, log anomalies and more
Integrations & Extensibility	Out-of-the-box integrations and solution packs with popular Infrastructure vendors and Network OS
	Customizable low-code telemetry pipelines to integrate with any device/OS/vendor
Scalability & Deployment	SSO, Multi-tenancy, RBAC and customer onboarding workflows
	Provisioning/Orchestration: Kubernetes, RedHat Openshift, Helm charts, Docker Compose, Terraform
	Deployment freedom: on-prem, cloud, or hybrid

Fabrix.ai Advantage

Comparison Metric	Cisco Prime	Fabrix.ai
Telco Service Assurance		
— Core Platform & Architecture —		
Architecture		
Platform		
System		
— Management & Operations —		
Inventory Management		
Fault Management		
Ticket Management		
Performance Management		
Capacity Management		
Service Assurance		
Service Orchestration		
End-to-End Visibility		
Data Collection and Storage		
CI/CD/CT		
Configuration Management		
Command Builders		
Automation		
SPoG		
RBAC		
Extensibility		
Asset Intelligence		
Vendor Service Integration (VSI)		
Technology Domains		
— Advanced Analytics & AI —		
Generative AI		
AIOps		
Alert Noise Reduction		
Cross-Domain Correlation		
ML-Driven Insights		
Predictive Intelligence		
Dynamic Thresholds		
Auto RCA		

Typical Integration Mechanisms

- Element Manager, Network Management System, Domain Controller
- Direct to device integration
- SNMP v1, v2c, v3
- SSH/CLI, REST APIs, Webhook, tcpjson, 3GPP
- Open Telemetry
- Syslog, rsyslog
- gRPC, gNMI dial-out, gNMI dial-in
- Cisco StarOS Bulkstats
- **Messaging:** Kafka, NATS.io, MQTT
- **Logs/Events:** Splunk, Filebeat, Winlogbeat, Fluentd, Collectd
- **Open Source:** Prometheus, Telegraf, Grafana, Zabbix
- **Discovery/Topology Protocols:** CDP, LLDP, ISIS, OSPF, BGP-LS

Comprehensive Data Collection

- **Inventory:** Network devices, supervisors, line cards, modules, power supply, fans
- **Metrics:** CPU, Memory, Environmentals, Interfaces, QoS, Latency, Throughput, Jitter, Packet Loss,
- **Events:** Syslogs, SNMP traps, faults
- **4G Evolved Packet Core:** Sessions: Active, VoLTE, IMS Gx: CCR-U Success Rate, CCR-I Success Rate, RAR Success Rate
- **5G Mobility:** SMF, UPF, APN, sx, rulebase, gtpu, p2p, user-plane-service, saegw, system, sgsn, sgw, mme, cscf, ecs, pgw-egtpc-s5s8, pgw

Typical Network Vendors/Devices/OS

- **Mobility:** 4G, Cisco ASR 5500, PCRF, Gateway, PAS
- **Optical:** Cisco NCS 4200, LI, TDM, Mux ponders
- **Managed Network Services (MNS):** VMware Velocloud, Cisco SD WAN, Juniper, Vyatta, Fortinet
- **Network OS:** Cisco StarOS, IOS XE/XR, NXOS, Juniper JunOS, Arista EOS, HPE Provision or Comware
- **Domain Controllers:** Cisco DNA Center, Meraki, vManage, Nexus Dashboard, ACI APIC, Crosswork Controller
- **Network Performance Monitoring:** Prometheus, Telegraf, Grafana, Zabbix, PRTG
- **Cisco:** DNAC, DCNM, Meraki, SDWAN vManage, VMware VeloCloud
- **IT Service Management (ITSM):** ServiceNow, BMC Remedy, Jira, ManageEngine
- **DEM & RUM Data:** ThousandEyes, AppDynamics, Accedian Skylight, Splunk, ThousandEyes, APM tools.
- **Automation Platforms:** Cisco NSO, BPA, Ansible, Terraform
- **Devices:** Firewalls, Load Balancers, Storage devices, Routers, Switches, Access Points, Wireless LAN Controllers, Servers, VMs, Guest OS, Containers, Microservices

Key Benefits

- 100% of your ops data & tool integrated
- Increased availability, reduced downtime
- MTTD/MTTR Reduction by 60% or more.
- Ability to predict/prevent impending issues
- Intelligent alerting based on usage/trends
- Alert deduplication and noise reduction
- Productivity improvements with AI agents, AI conversational chat assistant

FAQs

► Does the solution run on-prem? If so, what are the installation options?

Yes, the solution can be deployed on-prem, in the cloud, or in hybrid environments. Installation options include: VMware OVF, Kubernetes, RedHat Openshift, Docker Compose and scripted installs on Linux (Ubuntu and RHEL)

► Can the solution integrate with my existing network management tools or controllers? Can the solution communicate directly to the device?

Yes, the solution can integrate with existing network management tools or controllers and also supports direct device integration.

► What integrations are supported out of the box?

Out-of-the-box integrations and solution packs are available for popular Infrastructure vendors and Network OS. See list here: https://docs.fabrix.ai/Bots/search_bots/

► How can I integrate with vendors that are not your integration list?

Customizable low-code telemetry pipelines enable integration with any device/OS/vendor.

► How do I customize the list of SNMP traps processed?

The solution provides an intuitive UI to upload any SNMP MIB to extract and customize data collection.

► Does the solution have intelligence to set dynamic thresholds?

Yes, the solution has intelligent alerting with dynamic thresholds, which adapt to actual data patterns and trends.

► Does the solution provide any forecast alerts or early watch alerts?

Yes, the solution provides predictive insights and alerting. Forecasting can include a 7-day KPI forecast. On-demand analysis of KPIs can be done with KPI workbench.

► Can the solution automatically create and update incidents?

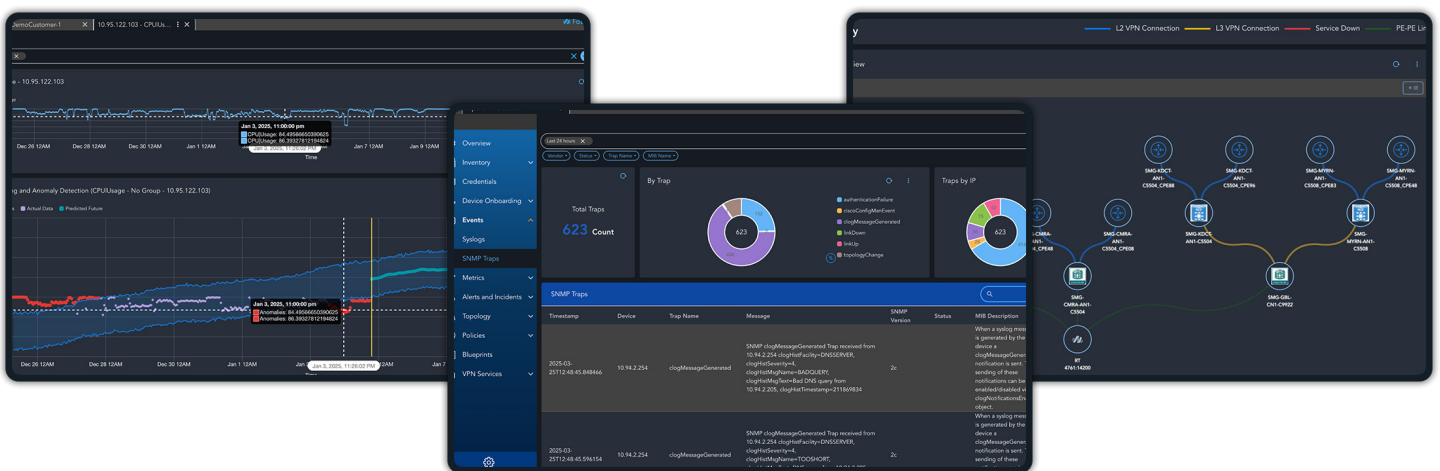
Yes, the solution has automated incident management with bi-directional integration with Ticketing Systems like ServiceNow, BMC Remedy, PagerDuty, ManageEngine, ServiceDesk, Jira etc.

► What is the licensing model?

The typical licensing model is based on per asset, on a subscription basis (in increments of 1-year, 3-years or 5-years).

► What is the product support model?

Standard support is included, but premium support involves additional costs. Contact your Fabrix.ai sales representative for more information.



For more information visit:

www.fabrix.ai



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