Helix Fault Management

Streamline your network operations

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Quality of Service. Quality of Experience. Customer Satisfaction. More than ever before, businesses and consumers have high expectations of the quality of service you provide them. They are no longer willing to accept lengthy outages and recurring issues. To meet these expectations your Network and Service Operations Centers (NOC and SOC) must be able to investigate and resolve issues faster than before, and dedicate their resources according to customer and service centric priorities. Efficient fault management is a vital part in assuring high customer satisfaction and accelerating business growth.

Helix Fault Management (FM) is a centralized system for the management of faults and alarms in complex carrier networks. Part of the Helix Service Assurance platform, it provides deep network visibility and an array of advanced tools, enabling communications service providers (CSPs) to prevent predicted problems, act upon alerts in real-time, determine the root-cause of issues and automate the resolution process.

- Focus NOC and SOC teams’ attention on critical issues
- Predict and prevent service degradations and SLA violations
- Prioritize important alarms and identify the source of the problem
- Support self-healing and closed-loop automation

Streamline your network operations
From raw data to automated resolution

Helix FM provides an end-to-end solution for event management. From event data collection and alert receiving, through advanced visualization, ticketing, diagnostics and investigation, and up to machine-learning-driven analytics, correlation and automated resolution - Helix FM accompanies your NOC experts throughout the entire fault management process to simplify the oversight of your network’s health.

The solution provides network connectivity through a scalable bi-directional mediation tool. A variety of network data adaptors enables collection and processing of large amounts of data in real-time, supporting all major technologies, protocols and equipment vendors.

Available over Cloud, Helix FM helps resolving the challenges of monitoring distributed networks, with continuous availability and decoupling of data collection and manipulation.

TEOCO’s patented alarm flooding protection mechanism assures that the FM solution will keep processing alarms even when massive volume of alarms rise from the network.

Helix Analytics tool set
Fault management made easier

The complexity and the increasingly dynamic nature of carrier networks continue to rise with the emergence of new technologies such as 5G, NFV and Cloud. These are translated into more events and alarms in the system. Your NOC team has a limited number of technical experts, required to maintain complex alarm rules and prioritize the flux of events as part of the daily work. Given that, detecting the root cause of complex problems can easily become a daunting task without the right tools and processes in place.

Helix FM is built to address these challenges, equipping your engineers with a set of fault analytics tools that:

- Automatically group alarms into clusters and identify their root cause.
- Identify problems and predict their impact before they occur.
- Reduce the number of alarms and prioritize them.
- Reduce mean time-to-repair (MTTR)
Machine-Learning Root Cause Analysis (ML-RCA)
Locate the source of network problems and expedite repair

ML-RCA adds an important level of automation to fault management, which extends the traditional rule-based RCA with adaptive mechanisms to quickly locate the source of problems.

The set of unsupervised machine-learning algorithms study and analyze the stream of alarms reaching the system, both offline and in real-time, automatically suggesting grouping and correlation between alarms and tagging the potential root-cause alarms among them.

Predictive Failure
Detect outliers and upcoming problems before they escalate

NOCs and SOCs tend to concentrate on current active alarms, with emphasis on the most severe ones, which naturally seem to represent the most urgent problems. But ‘underneath the surface’ there could be hidden developing issues that might not reflect in current active alarms.

Predictive Failure detects these emerging problems before they escalate and become significant. The algorithms analyzes past data of different entities such as sites, equipment, virtual and physical network functions (VNF/PNF), services and customers, producing two scores for each analyzed entity: Trend and Anomaly.

Alarm rules can combine current alarm on an entity with high scores of trend and anomaly to trigger notifications, diagnostics and corrective actions.

Screener
Prioritize and focus on important alarms

Screener is a machine-learning driven tool for alarms noise-reduction and prioritization when coping with large volumes of alarms. Based on automated analysis of alarms history and their related user actions, it assigns each of the current active alarms one of three tags to mark its importance: Premium, Standard or Spam. These tags help NOCs become more efficient by focusing their staff attention and process automation on the most important alarms, and shorten the time it takes to resolve them.
The automated NOC
View, detect and repair faults in real time

When services or their underlying network elements are down, the majority of downtime is spent on analyzing data and events to identify the problems that need correction. Helix Fault Management includes an integrated set of tools that significantly reduce downtime and streamline processes to manage, diagnose and resolve the faults.

End-to-End alarms correlation
Helix FM features powerful alarm correlation and RCA tools. When combined together they increase NOC efficiency and reduce time to repair by suppressing the symptomatic alarms and detecting the root cause of issues.

- Machine-Learning Root Cause Analysis
- Correlator Expert System
- Patented Correlator TRS (Topology-based Reasoning System)

Automatic resolution
Helix FM includes advanced diagnostic and investigation tools that provide operations teams a greater capacity to resolve alarms faster and close the loop with restorative actions.

Auto-matic rules can be created to automate actions upon alarms arrival and adjust to the NOC/SOC related work processes. These rules empower users with set criteria and action rules, performed automatically, for example: send commands to the network elements, send notifications and escalations, change alarms display and color and modify alarms content.

FaultPro is an automatic corrective measures engine. The tool is configured to send commands to the network. It automates fault isolation by querying network elements, identifying the source of problems and associating actions to alarms based on flexible rules, supporting closed-loop operational processes with automatic and semi-automatic fault correction.

Standard APIs
As a member of TM Forum TEOCO takes a active part in API consolidation efforts between standard bodies.

Helix FM uses standard QoS APIs, including JMS and Web Services. These APIs enable fast integration with other OSS systems using two integration methodologies – Request/Reply and notification publication.
Advanced monitoring toolset

**Sentinel** is a centralized user experience tool for accessing all modules, views and user actions. The intuitive interface includes customized widgets and drill down options to help NOC and SOC teams monitor services status, network resources, sites and customers.

**Cruiser** is a diagnostic view module that provides customized view of alarms generated by the network equipment, services and performance threshold crossings.

**Schematic Views** provides a visual picture of the state of the network elements, with emphasis on abnormal events.

**FM History** analysis client is an investigation tool that can quickly retrieve and view an alarm history according to selected criteria.

**NeTkT** is a trouble ticketing solution with unique orientation and benefits for service providers’ operations.

**ServiceImpact** improves maintenance planning and customer satisfaction by predicting which services and customers will be impacted by a planned operation.

**FM Reporter** enables users to detect and investigate critical problems and developing trends, and take proactive actions before these events escalate.

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