

Amdocs Fault Management (FM)

Streamline your network operations



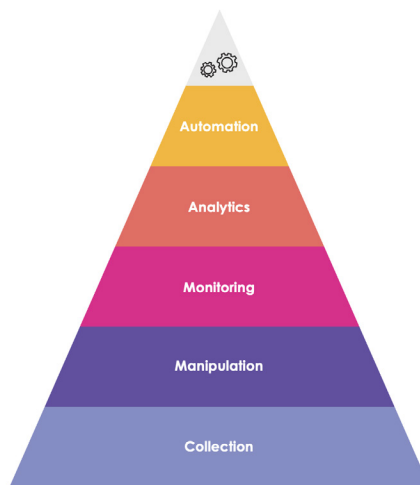
Communications service providers (CSPs) are being confronted with the ever-growing challenge of delivering exceptional quality of service (QoS), quality of experience (QoE) and customer satisfaction. This challenge is particularly pronounced within network and service operations centers (NOCs and SOCs), where teams face immense pressure to swiftly investigate, prioritize and resolve issues. In this demanding environment, the efficient management and resolution of network faults have emerged as critical factors, not only to guarantee high customer satisfaction but also to foster sustainable business growth.

Amdocs FM is a centralized system for the management of faults and alarms in complex carrier networks. As part of Amdocs Service Assurance Suite, the system provides deep network visibility and an array of advanced tools that help automate the fault resolution process. These capabilities empower teams to prevent network problems before they occur by acting upon alerts in real time and determining the root-cause of critical issues.

Analytics-driven Insights	Streamlined NOC/SOC Processes
Fast Correlation & Resolution	Fault Prediction & Prevention
Closed-loop Automation	Highly Scalable & Modular

From raw data to automated fault resolution

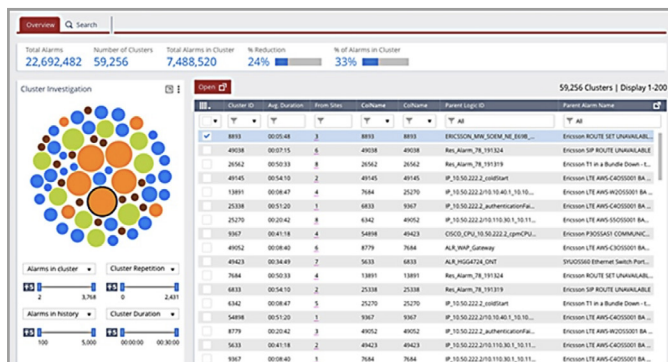
Amdocs FM is an end-to-end solution for managing network events, providing comprehensive support throughout the entire fault management process, and simplifying the task of overseeing network health. This includes collecting event data, receiving alerts, creating trouble tickets, diagnosing and investigating network issues, analyzing network events, correlating faults and automating their resolution.



Amdocs' FM's cloud-based architecture helps resolve the challenges of monitoring distributed networks, with continuous 24/7 availability and the decoupling of data collection and manipulation. The solution connects to the network through a scalable, bi-directional mediation tool. Within the solution are network data adaptors that collect and process large amounts of data in real-time, supporting all major technologies, protocols and equipment vendors. Meanwhile, its alarm flooding protection mechanism assures the ability to process alarms, even during massive spikes in activity.

Fault management made easier

With the rising complexity and increasingly dynamic nature of carrier networks, NOC and SOC teams face the challenge of responding to a growing number of system events and alarms. This becomes even more pronounced due to the added burden of limited resources and in-house expertise. Furthermore, the absence of the right tools and processes leaves them ill-equipped to accurately detect the root cause of complex problems.



Amdocs FM addresses these challenges, equipping engineers with a set of tools that:

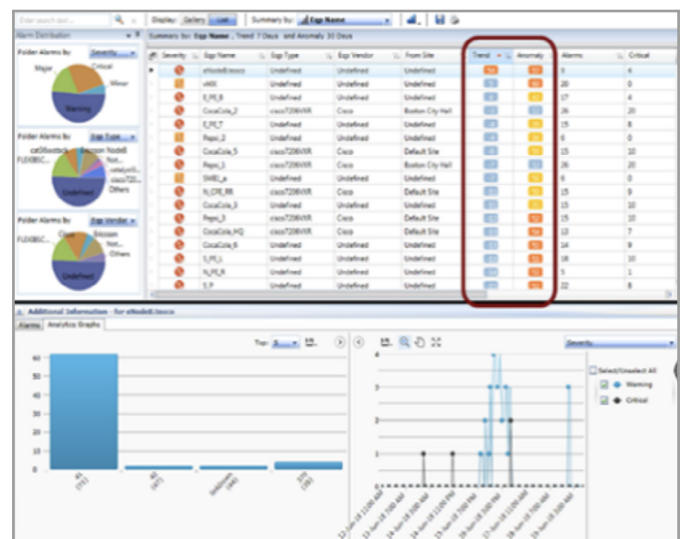
- Automatically group alarms into clusters and identify their root cause
- Identify problems and predict their impact before they occur
- Reduce the number of alarms and prioritize them
- Reduce mean time-to-repair (MTTR)

Machine learning root cause analysis

Machine learning root cause analysis (ML-RCA) adds an important level of automation to fault management, extending traditional rule-based RCA with adaptive mechanisms to quickly locate the source of network problems. Through unsupervised machine learning algorithms, ML-RCA studies and analyzes the stream of alarms coming into the system, both offline and in real-time, automatically grouping, correlating and tagging the potential root-cause for faster resolution.

Trend and anomaly detection

Network and service operations centers tend to concentrate on active alarms, focusing only on the most severe. However, there is a risk of overlooking underlying issues that may be quietly developing beneath the surface. Amdocs Trend & Anomaly module detects these emerging problems before they escalate. It's powered by algorithms that analyze historical data from various entities such as cell sites, equipment, virtual and physical network functions (VNF/PNF), services and customers, and produce two scores for each analyzed entity: "trend" and "anomaly". Rules can be created to factor in these scores, which, in turn can trigger alarm notifications, diagnostics or corrective actions.



Screener

Screener is a tool for reducing and prioritizing alarm "noise." Based on an automated analysis of alarm history and user actions, it assigns each active alarm one of three tags to mark its importance: "premium", "standard" or "spam," which help NOC and SOC teams become more efficient by focusing their attention on the most important issues.

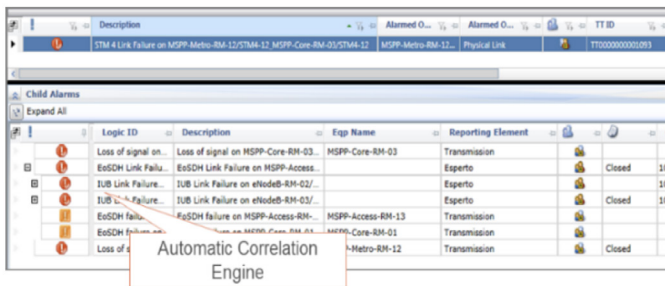
The automated NOC/SOC

When services (or their underlying network elements) are down, much time is spent analyzing data and events to identify what needs to be corrected. Amdocs FM provides an integrated set of tools that streamlines the entire process – managing, diagnosing and resolving faults more quickly, leading to significantly reduced downtime.

End-to-End alarm correlation

Amdocs FM features powerful alarm correlation and RCA tools, which when combined, increase NOC/SOC efficiency and reduce time-to-repair by suppressing symptomatic alarms and detecting the root cause of issues. These tools include:

- Machine-learning root cause analysis
- Correlator expert system
- Patented correlator TRS (topology-based reasoning system)



Automatic fault resolution

Amdocs FM includes advanced diagnostic and investigation tools that provide operations teams with greater capacity to resolve alarms faster and close the loop with restorative actions. Rules can be created to automate alarm-related activities that are aligned with NOC/SOC related work processes, empowering users with a set of criteria and actions that can be triggered automatically. Examples include: send commands to the network elements, send notifications and escalations, change alarm display and color – and modify alarm content.

FaultPro

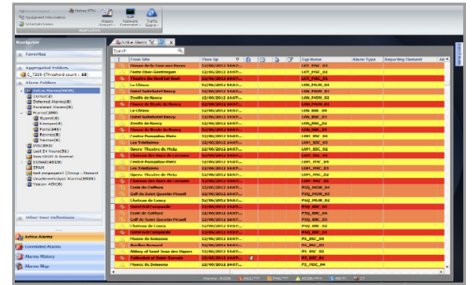
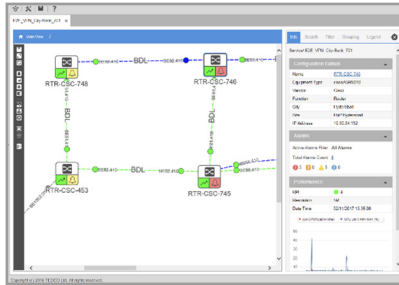
FaultPro is an automatic fault resolution tool that sends automated corrective actions to the network. The tool is configured to automatically isolate faults by querying network elements, identify the source of the problem and associate actions to alarms based on a set of flexible rules. It also supports closed-loop operational processes with automatic and semi-automatic fault correction capabilities.

Standard APIs

Amdocs FM uses standard APIs, leveraging the latest technologies, which enable fast integration with other OSS systems using two integration methodologies – Request/Reply and notification publication.

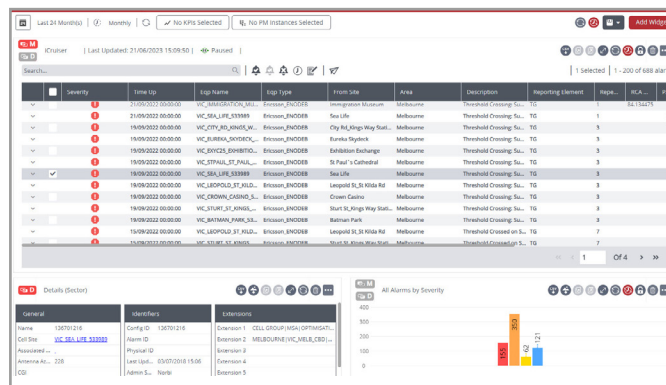
Additional advanced fault monitoring tools

- **Sentinel:** a centralized user interface for accessing all modules, views and user actions across the Amdocs platform. The intuitive interface includes customized widgets and drill down options to help NOC and SOC teams monitor the status of services, network resources, sites and customers.
- **Cruiser:** a diagnostic module that provides a customized view of alarms generated by network equipment and services and monitors performance thresholds.
- **Schematic views:** visually depicts the schematic representation of network elements and services, with an emphasis on abnormal events.
- **FM history analysis client:** an investigative tool for quickly retrieving and viewing alarm history based on selected criteria.
- **Service Impact:** a tool for assessing and predicting which services and customers have or will be impacted by existing issues or a planned operation – improving maintenance planning and customer satisfaction.
- **FM Reporter:** enables users to detect and investigate critical problems and developing trends, and take proactive actions before events escalate.



Amdocs FM

Amdocs FM incorporates fault management capabilities enhanced by smart analytics, fast diagnostics, and automated resolution, enabling NOC and SOC teams to effectively manage faults, improve network performance and ensure uninterrupted operations. With smart analytics, it rapidly analyzes network data in real time, identifying potential faults, their root causes, and facilitating timely and precise remediation. Additionally, through fast diagnostics, it efficiently pinpoints and isolates issues, enabling rapid troubleshooting for fast resolution.



About Amdocs

Amdocs helps those who build the future to make it amazing. With our market-leading portfolio of software products and services, we unlock our customers' innovative potential, empowering them to provide next-generation communication and media experiences for both the individual end user and large enterprise customers. Our 31,000 employees around the globe are here to accelerate service providers' migration to the cloud, enable them to differentiate in the 5G era, and digitalize and automate their operations. Listed on the NASDAQ Global Select Market, Amdocs had revenue of \$4.58 billion in fiscal 2022.

For more information, visit Amdocs at www.amdocs.com

