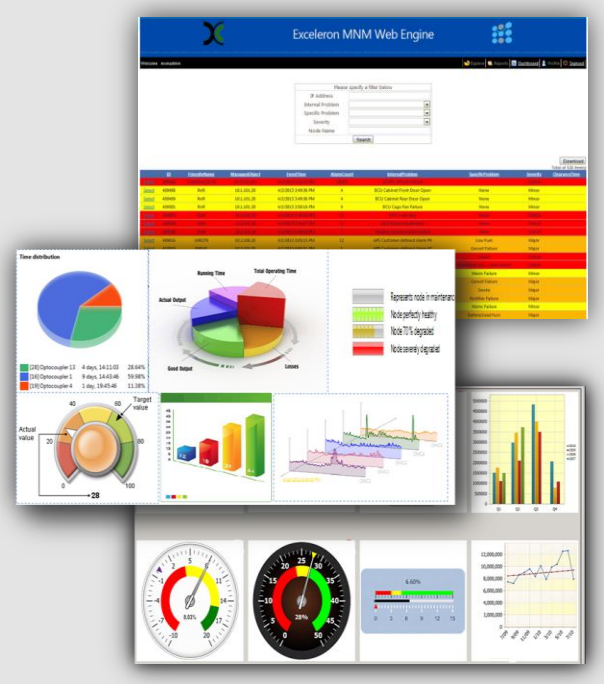
Network Management Pro (NMS)

OSS AND SERVICE MANAGER SUITE

Exceleron Communication Solution Guide



INTRODUCTION

As demand for capacity and quality increases, so does the complexity of network elements. Control and supervision of individual network elements have become a difficult task.
A complete network management system is required that can improve monitoring, performance reporting, configuration and troubleshooting for improved network's operational efficiency.

Exceleron's (XC) Network Management System is a complete set of integrated solutions that controls end-to-end network management for IT/Telecommunication networks. XC OSS ensures your business agility, reduces OPEX through increased QoS/service reliability, increases efficient business processes. Its enhanced features can easily scale to meet the needs of the largest enterprise with most advanced networks.

SOLUTION OVERVIEW

- Real time monitoring of network alarms/events and statistics
- Define correlations and schemes on events or define customized synthetic alarms
- Customizable dashboard views for system performance management
- Expert system for network problem troubleshooting and root cause analysis
- Build customized workflows for Alarms/Events
- Consolidated network outage with better visibility of subscriber service
- First level corrective action for network self-healing quick resolution
- Integrated trouble ticketing system for internal and external interfaces
- Notification system integrated with SMSC and SMTP
- Network's business View and live status of each Network Element (NE) on Google maps

NETWORK ACCESS MODULE

Network Access Module (NAM) listens to the live alarms/events from different network entities. (NAM supports SNMP, CORBA, Q3, WCF, telnet, raw TCP, UDP protocols). NAM also has Re-Sync streamer which can withhold jitters in the network. If the connection to the EMS server/NE is broken for some reason, these streamers have the ability to query the EMS/NE for events/alarms once the connection is restored, thus not losing any information during the disconnection period.

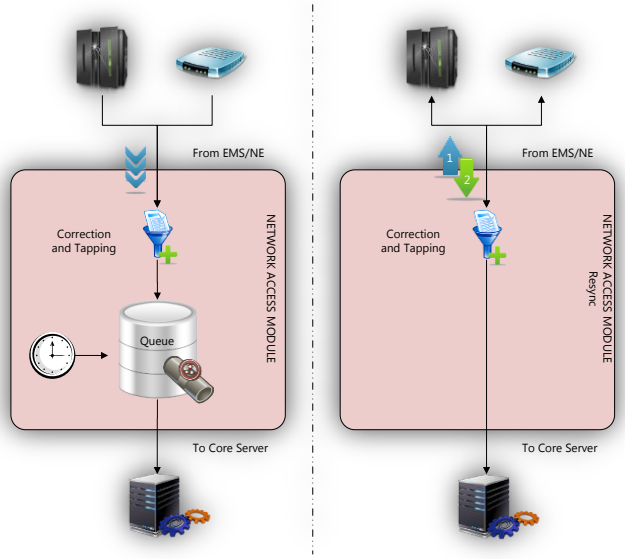


Fig. Network Access Module

FAULT MANAGEMENT MODULE

Alarms/Events processing is done by Fault Management Module (FMM) that first filters out unwanted events which have a high occurring frequency. This reduces load on the core processes allowing them to serve more NEs. It also modifies and adds different fields to the upcoming events. It avoids duplications of the same event within a threshold period by identifying that a similar event has already existed.

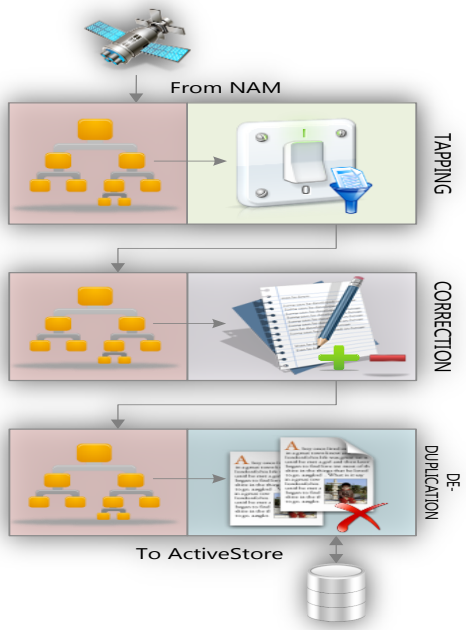


Fig. Fault management Module

FMM also applies smart and intelligent coding logic on the upcoming events to yield customized results. Unlimited schemes can be defined as per the customer needs. It also helps in reducing the number of service requests by relating an event to any other persistent/known events. Live Synthetic alarms can be generated where the performance KPIs from network statistics reach any critical threshold

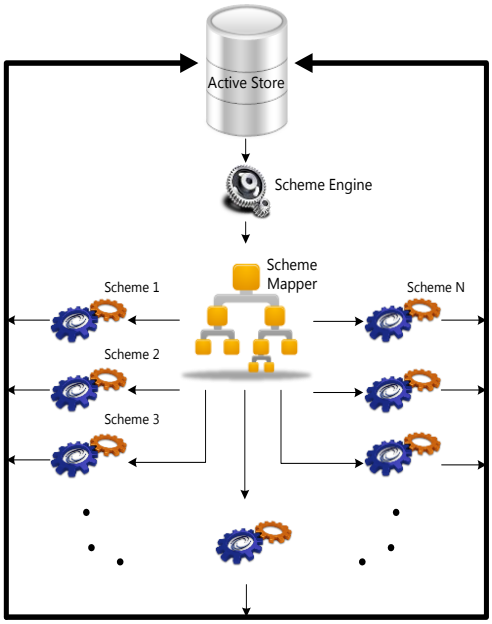


Fig. Fault management Module

PERFORMANCE MANAGEMENT MODULE (PMM)

Network Performance data is the most important component for an operator to assess network efficiency and represents a methodology for defining measurement data e.g. the availability, the quality etc. PMM data can be used to get real time picture of network, to plan network, capacity enhancement and to improve the operation of the system.

Key performance and health stats indicators can be marked and can be used for KPI analysis and operation.

PMM provides the following.

- Provide customized performance analysis reports on real time alarms and statistics.
- Measure KPIs of different network elements over time.
- Daily, weekly, and monthly reports to scale and manage network for high performance.
- It can be integrated with any network element including switches, routers and servers on SNMP or cobra platform and supports all OS.
- The data can be extracted on real time or scheduled.
- The performance management module help operator to understand when the capacity of site is nearing or have been exhausted.
- Customers are able to get various types of reports

SERVICE MANAGER MODULE

It scans the alarm database and marks events for creating incidents/service requests with intelligent logic and customized requirements. Provides web interface for operator to view tickets and perform different actions. It also provides management with live system reports and keep track of the employee's performance

Fig. Service Manager Module

MAP AND BUSINESS MODULE

It shows geographical placing of network elements on google map with live status. Also highlights areas affected by any sector/site/core element outages. Fully customizable Icons to represent Fault type/level. It also shows business view with better visibility of subscriber service impact in case of network outage.

Fig. Map Module

CONFIGURATION MANAGER MODULE

A model – based automated compliance, change, and configuration management module. Enhances collaborative network infrastructure design, verifies controlled change processes, provide network device and service configurations transparency, and ensure compliance with corporate and regulatory requirements. These capabitlites of our Configuration manager enable you to ensure the security , availability and operational efficiency of your network.

A complete platform to send configuration commands to network elements.

- Manual/automatic corrective action for network self healing quick resolution
- Configurations can be fed with multiple flow paths for multiple responses
- Enables automated scripting so WiMAX network operators can effectively address any ad-hoc needs on custom requirements
- Manage both IPV4 and IPv6 devices.
- Integrate configuration manager with fault manager and performance monitoring module to dramatically reduce te time required to investigate and resolve change or configuration related issue.
- Deploy nation wide changes in minutes rather performing on per device basis.
- Backup and restore facility.

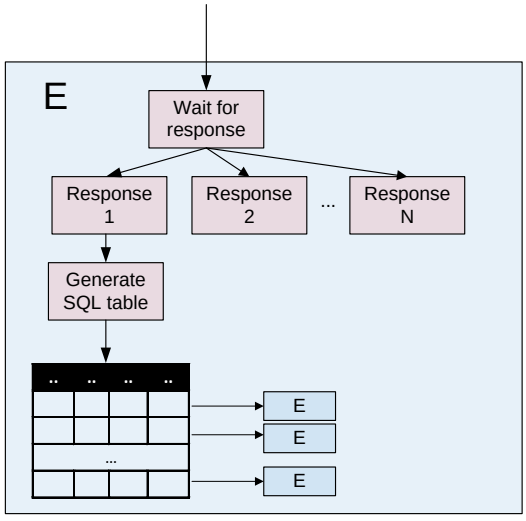


Fig. Configuration Manager Module

CLIENT ACCESS MODULE (CAM)

This module provides the means for the clients to interact with the Network Manager

SmartView - It is a windows based application running on a simple desktop system . Real-time view of the alarms or events with flexible options of filtering, sorting of the events and opening different alarm windows.

Web Interface - Flexible in monitoring the network, even on hand held devices without needing to install any application - Provides all the Features of SmartView

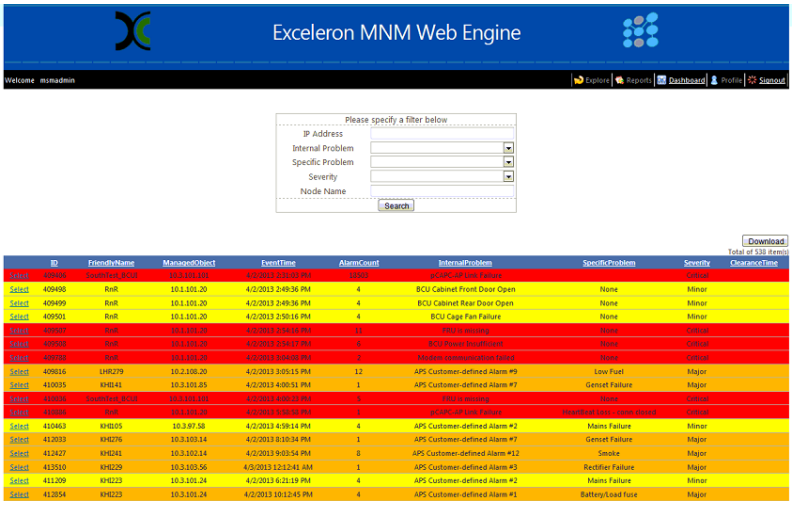


Fig. Client Web Access Module

NOTIFICATION MODULE

- Highly customizable module for the intimation of alarms/events over SMS and E-mail
- Open architecture for extending corporate data of wireless networks to mobile users of the enterprise
- Help increasing business productivity by delivering critical enterprise content to make timely decisions
- Easy and flexible integration with existing enterprise infrastructure

- Bi-directional, scalable and reliable solution for cost-effective operational environment
- Notifies events to group of users to simplify operational workload
- Smart data formatting to send graphs or health charts for easy network operations
- Operates on a pre-fed escalation matrix defining communication hierarchy to report critical thresholds

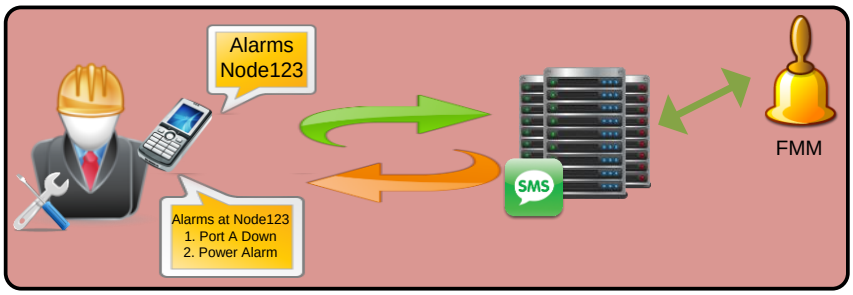


Fig. Notification to Support Engineers

ESCALATION MANAGEMENT - Can be triggered by a variety of parameters such as worsening of the fault condition from given threshold or after a specific time has elapsed . Works on a pre-defined escalation template defining communication hierarchy and the level up to which the issue can be escalated . It ensures availability and health through automated event escalation via email and SMS. Provides comprehensive management reports by monitoring the response time of the corrective actions and updates

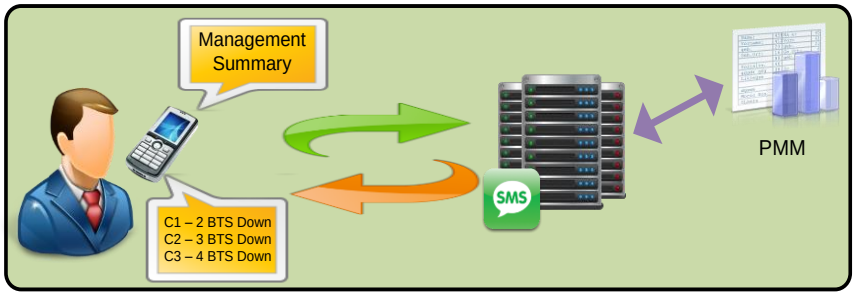


Fig. Escalation to Support Management