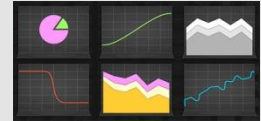


Performance Management and Interactive Dashboard System (PMID)



Exceleron Communication Solution Guide



INTRODUCTION

Performance Management and Interactive Dashboard System is a next generation performance management solution for IT & Telco networks used by engineers and management for detailed and overall performance of a network. It is targeted to make sure network high availability for better performance and services for end customers.

SOLUTION OVERVIEW

- Ability to collect and analyze bulk of network and service platform performance data in the form of raw statistical counters delivered by each network entity
- Parsing raw counters and store in the database
- Implement Customized KPI formulae for different interfaces to visualize, manage and optimize system performance in real-time
- Easy to Use tool to build complex workflows and on-demand dashboard portlets

KEY FEATURES

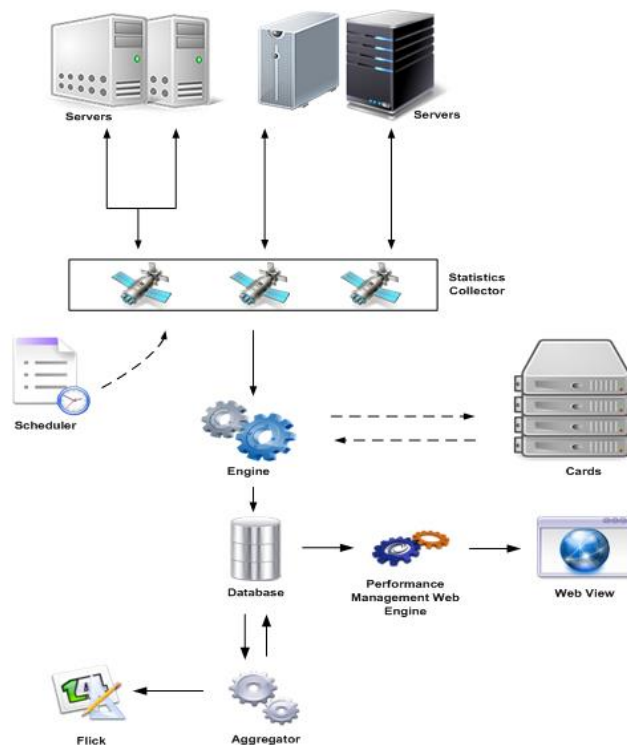
- Designed for multiple technologies that provides a framework utilizing modern database, visualization and analytical techniques
- Enables network operators to truly reap the value and benefit of large data sets available in their network
- Provide complete performance visibility of all integrated nodes
- Extract data in a way that can be acted upon to maximize use, performance and profitability of existing network assets
- Ability for provisioning of customizable reports with alerts for degraded parameters

- Send notifications directly to Object Server
- Dash board view is available for user with following features
 - Drill down functionality
 - Reporting (using manually specify filters) with graphs and charts.
 - Overall performance summary of a network
- Flexibility of user defined threshold parameter values creation through Designer tool that provides facility to customer to do the changes on the fly



FUNCTIONAL DESCRIPTION

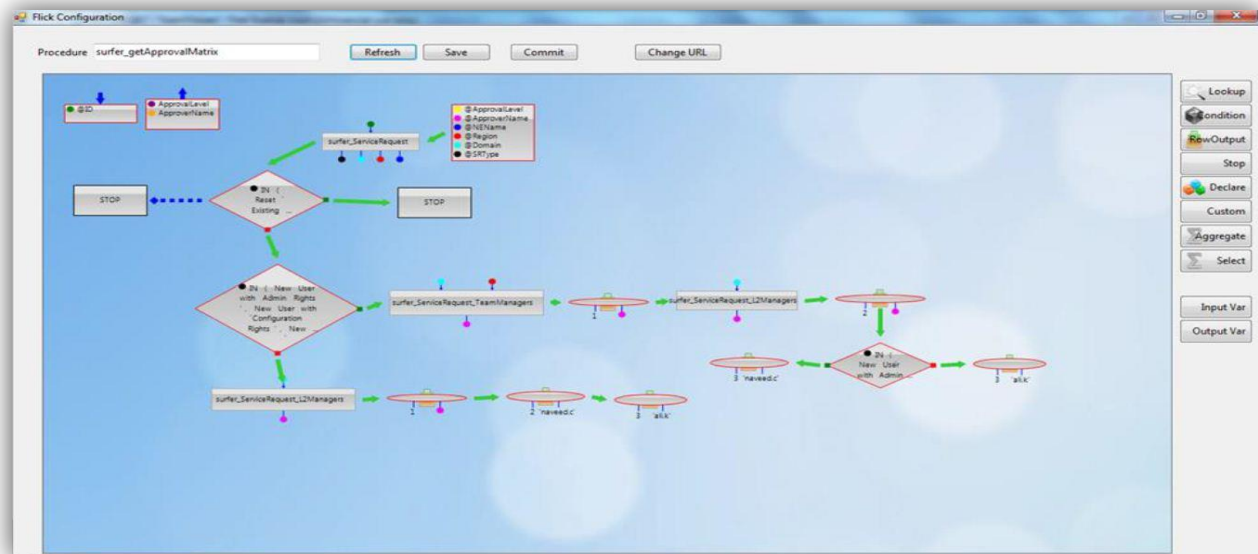
- PMID module integrates with different network Entities on Industry's standard protocols including SNMP, CORBA, Q3, WCF, telnet, raw TCP, UDP, ftp
- Statistics collector collects network and service platform performance raw data/counters for different entities based on the time defined on scheduler by user for different domains
- Statistics collector forwards the collected data to the *Engine*
- *Engine* pass data to logical cards defined for different domains of unique vendors which parse the raw data, send back to *Engine* and store it in the database accordingly
- PMID Web Engine use the processed data to calculate the KPIs using different formulae defined by user for different entities/services
- PMID Flick tool provides complete flexibility to define customized KPIs and thresholds which can be modified in real time



PMID GRAPHICAL WORK FLOW MANAGER (FLICK)

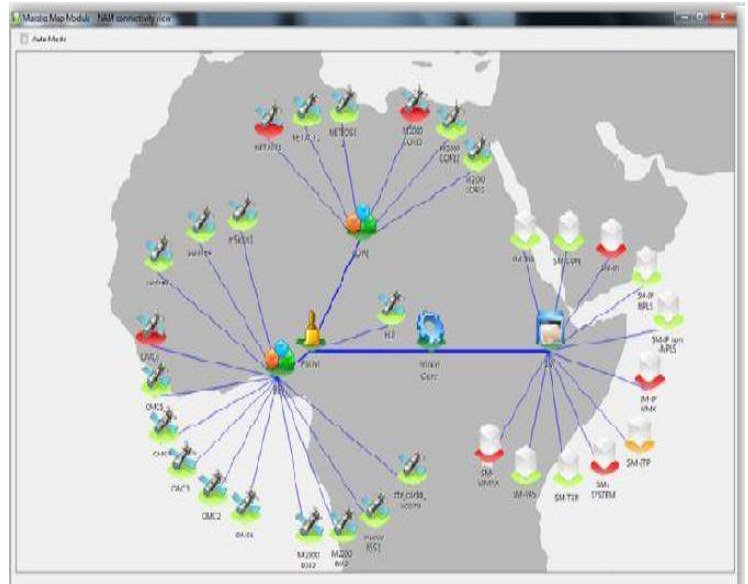
The Graphical Work Flow Manager can build customized workflows and on-demand dashboard portlets. It has multiple benefits like

- Ease of Use
- Coder Independent
- On the fly deployment
- Drag and drop ability
- Empower customer to do customization in real time without any system outage
- Flexibility to create and modify network KPI formulas, conditions and thresholds
- Flexibility to define escalation hierarchy



PMID SYSTEM WEB INTERFACE

- Web interface view provides hierarchy which can be drilled down to any level to view current performance of network based on the KPIs defined
- Flexibility to define customized KPIs at each level of hierarchy
- Different Filtering options are available to view current network performance reports in the form of graphs and charts
- Provides overall performance summary of a network for management view



Performance Management Dash Board View

CellLevelKPIs

Cell	SiteName	SiteType	CSR	HSR	CDR	SBCCH Congestion	TCH Drop Rate	TCH Congestion Rate
BAA100A	BAA100	Outdoor	98.77	98.782	0.868	0.31	0.312	1.23
BAA100B	BAA100	Outdoor	98.21	98.334	0.849	0.24	0.371	1.79
BAA100C	BAA100	Outdoor	98.89	98.893	0.834	0.292	0.33	1.11
CFOS20A	CFOS20	Outdoor	91.56	89.314	1.3	0.294	0.294	8.44
CFOS20B	CFOS20	Outdoor	90.05	89.562	1.31	0.28	1.931	9.95
CFOS20C	CFOS20	Outdoor	89.9	89.307	1.29	0.312	1.97	10.1
IJK400A	IJK400	Outdoor	96.37	96.467	1.518	1.95	0.641	4.63
IJK400B	IJK400	Outdoor	93.12	93.387	1.295	1.91	0.733	6.88
IJK400C	IJK400	Outdoor	96.23	95.991	1.667	1.7	0.912	3.77
NPM120A	NPM120	Outdoor	96.12	95.636	2	0.54	0.48	3.88
NPM120B	NPM120	Outdoor	96.51	95.885	1.9	0.5	0.52	3.49
NPM120C	NPM120	Outdoor	97.23	95.549	2.1	0.51	0.44	2.77
SPM131A	SPM131	Indoor	94.43	94.44	0.8	0.22	0.687	4.57
SPM131B	SPM131	Indoor	94.33	95.31	0.82	0.24	0.665	5.67
SPM131C	SPM131	Indoor	94.29	95.689	0.83	0.164	0.73	5.71

PRE-DEFINED REPORTS AND GRAPHS

- Pre-defined reports provide valuable decision making information targeted at specific roles within organization, ranging from engineering reports narrating performance of network equipment, to management reports showing network overviews
- Real-time, daily, weekly and monthly reports & graphs can be generated as

Pre-defined report packs are available for the below

Different Performance KPIs in IT Network

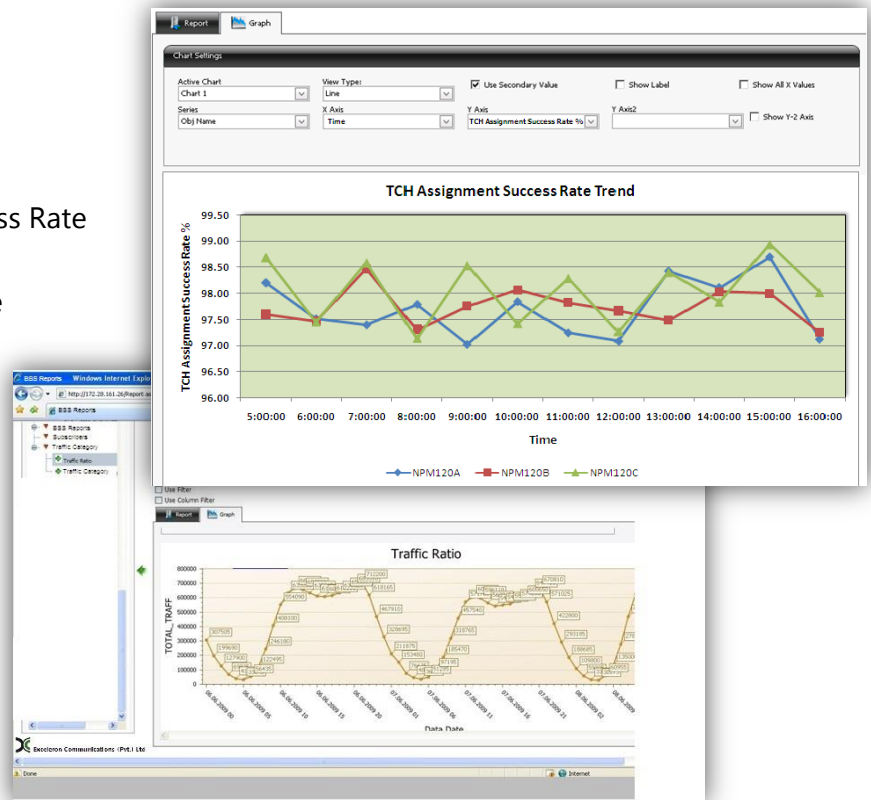
- SNMP Based Traffic Monitoring
- Packet Sniffer based traffic monitoring
- Latency Monitoring (with custom scripts)
- Classifies network traffic by IP address, protocol and other parameters
- Monitoring of custom script results
- Reports on Devices, Model, IP, processor, reach ability, uptime, traffic utilization

Different Performance KPIs in Databases e.g.

- Number of sessions
- Commit & Roll back by users
- User hit ratios
- CPU usage by session
- Cursor usage by session

Some of the performance parameters are mentioned below which are not limited to this only and can be defined as per user requirement to generate pre-defined graphs and reports

- Call Setup Success Rate
- Handover Success Rate
- SDCCH Call Drop Rate
- SDCCH Congestion Rate
- TCH Call Drop Rate
- TCH Congestion Rate
- Immediate Assignment Success Rate
- Paging Success Rate
- TCH Assignment Success Rate



Note: In addition to pre-defined reports, customized reports can be easily created using different filtering options available on PMID

PMID ALARMS/EVENT VIEWER

- Alarms/Events generated when user-defined threshold values or other conditions are breached. For example, network alarms can alert a NOC team to a “sleeping cell” or “degraded KPI values” within the network, which, if left undetected, could degrade network performance
- Reports are generated with the fields red highlighted having alarm conditions and requires immediate action
- Notifications to customized defined hierarchy for the improvement of parameters
- Historical data stored in the database to monitor trends that could identify performance degradation

Alarm Classification Count

View Table View Chart Export

Number of hours:

Classification	Count
Rectifier Input Failure	3290
Commercial Power Failure	2922
DG Running Alarm	1046
Cell Down Alarm	656
Low Battery Alarm	636
Site Down Alarm	289
DG Failure	245
Rectifier Alarm	228
Temperature Alarm	186
Combinational Alarm	51

1 2

Alarm List

Site Name	Occurrence Time	Alarm Name	Description	Event Type	Possible Cause	Severity	Clearance Time
<input type="checkbox"/>	NPM120	7/8/2014 20:21:51	Sleeping Cell	Cell without traffic	Service failed	Resources not available	Critical
<input type="checkbox"/>	SPM1:1	7/9/2014 19:53:07	Congestion	Congestion	Quality of Service	Threshold Crossed	Major 7/9/2014 20:13:55
<input type="checkbox"/>	IJK400	7/9/2014 21:03:46	Congestion	Congestion	Quality of Service	Threshold Crossed	Major

Delete Selected

TicketID	TicketStatus	AlarmID	FriendlyName	ManagedObject	AlarmTime	TicketCreationTime	InternalProblem	SpecificProblem	Severity	
Select	2851	Open	78292	10.1.105.39	1/15/2013 10:40:39 AM	1/15/2013 10:50:58 AM	APS Customer-defined Alarm #7	Genset Failure	Major	
Select	3365	Open	83738	10.2.125.126	1/16/2013 6:34:05 PM	1/16/2013 6:44:36 PM	APS Customer-defined Alarm #7	Genset Failure	Major	
Select	3512	Open	85723	KH019	10.3.98.2	1/17/2013 5:13:58 AM	1/17/2013 5:24:45 AM	APS Customer-defined Alarm #7	Genset Failure	Major
Select	4829	Open	112347	10.3.101.100	1/21/2013 1:01:54 PM	1/21/2013 1:13:09 PM	APS Customer-defined Alarm #7	Genset Failure	Major	
Select	4925	Open	114719	KH016	10.3.99.13	1/21/2013 8:31:05 PM	1/21/2013 8:41:15 PM	APS Customer-defined Alarm #7	Genset Failure	Major
Select	5063	Open	117973	KH0298	10.3.104.61	1/22/2013 9:15:27 AM	1/22/2013 9:26:26 AM	APS Customer-defined Alarm #7	Genset Failure	Major
Select	5544	Open	130200	KH0299	10.3.104.6	1/27/2013 12:18:51 PM	1/27/2013 12:29:06 PM	APS Customer-defined Alarm #7	Genset Failure	Major