
Business Intelligence Real Time and Analytical Service Modelling

A White Paper

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Matthew Foster is the CTO of Sydney based TechSMART International. Matthew is responsible for the team in TechSMART that develops eMite Analytics, the first and currently only software in the world to encompass consolidated real time and analytical service modelling.

Introduction

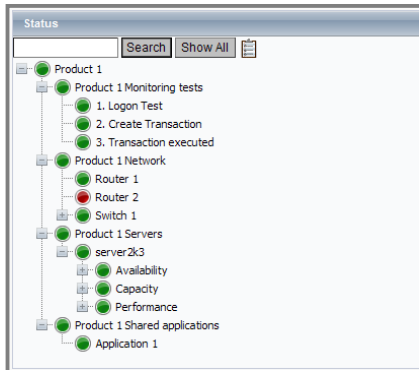
There are an extremely large number of tools available on the market for system monitoring, and analytics / business intelligence. One problem is that there is no link between the monitoring requirements of IT operations, and the B.I reporting expected by the business. eMite Analytics was designed to solve this problem by combining real time monitoring and analytical reporting into one tool.

Service Modelling and Relationships

The core of eMite analytics is the *service modelling capability*. This allows the user to create relationships and groupings between metrics that are being monitored. These relationships can define geographies, team structures, applications, products and any kind of IT to business mapping. The service model is easily changed and configured via an online relationship editor. Relationships can also be synchronized from a CMDB (configuration management database) or any other data source.

Real Time Service Modelling and Monitoring

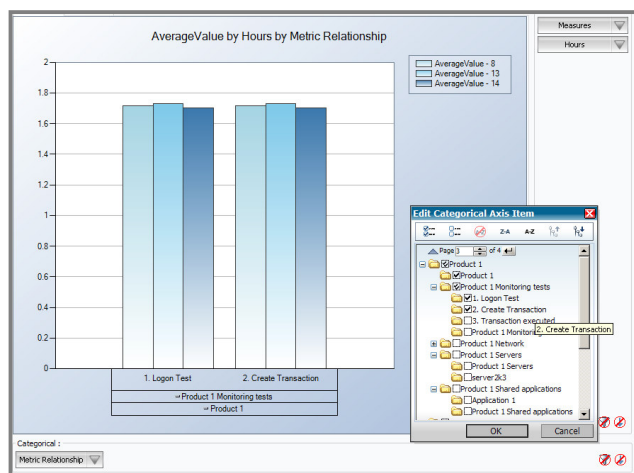
Once these relationships are defined they represent the status of the higher levels in the service model, for example the application or product status. Alarms can be directed at the appropriate members of staff on an application basis, rather than an infrastructure basis. *Propagation rules* can define redundancy in the infrastructure so that single failures do not result the application showing down. The real time monitoring can receive feeds from eMite agents, patrol, snmp, WMI, and many other data sources.



An example product modelled in terms of server and network infrastructure, shared applications and monitoring tests. Here the router 2 is red, but the overall product is still up, since it is redundant infrastructure, and the propagation rules have been defined. Metrics are grouped in terms of availability, capacity and performance automatically using a template facility.

Analytical Service Modelling and Reporting

Using the same service model created for the real time monitoring the reporting side of eMite analytics can show management the high level information that has been collected from the service model. For example the weekly and monthly application availability, the number of alarms by product, Top 10 servers causing problems, business hour average web site response time, peak hour availability etc. The power of multi dimensional analysis makes the reporting possibilities with eMite analytics almost limitless. The ability to 'slice and dice' using the service model relationships is unique to eMite analytics and gives management the information they need to see in order to make their decisions on capacity, performance and availability trends.



The Service model is available as a dimension within the eMite analytics multi dimensional cube. This allows aggregation and reporting at any level, and against any other dimension such as hour of the day, or by another parameter.

Consolidating the Information

Utilizing both real time and analytical data allows the user to look at the current performance and immediately compare to the hourly or daily trends. Alerts can be raised if the current values are more than a certain amount over the normal trend for that time of day.

Advanced Reporting

eMite Analytics also contains two unique features in the correlation and predictive capability.

Correlation helps find *performance dependencies*. A target metric business metric can be selected and correlated against an IT metric. For example the logon time to a website could be correlated against disk IO and CPU. The correlation would show which servers are correlating most highly with these 2 metrics.

Predictive capability improves *pro-active monitoring* in an organization. The user can be informed of possible threshold breaches 1 month, or even 1 year in advance. This can help capacity planning and also reduce outages.

MetricName	Current Value	Next Month's Prediction ^
DALI /LogicalDisk/M:/% Free Space	9.19	7.26
ZELDA-PROD Drive D Free Space	24.06	7.69
MATISSE Drive C Free Space	11.35	7.9
techsmart5 /LogicalDisk/C:/% Free Space	14.56	9.13
techsmart5 /LogicalDisk/F:/% Free Space	14.57	9.22
server2k3 /LogicalDisk/C:/% Free Space	13.51	11.93
TECHSMART Drive I Free Space	14.66	16.17
techsmart2 /LogicalDisk/L:/% Free Space	16.45	16.45
DALI /LogicalDisk/C:/% Free Space	13.88	16.81
MAILIN Drive D Free Space	16.99	17.01

Here the metrics are ordered by next month's predicted value. Alarms can also be raised to warn of a predicted threshold breach.

Conclusion

Business Intelligence methods and Dashboards designs are constantly changing. Allowing the user to interact with the dashboard creates significant advantages to users above the various dashboard vendors that only provide a static historical view.

The advantage of user interactivity within the dashboard is to give the user the ability to make business decisions in real-time, based on analysis that is built in to the dashboard.