



## Adding Value to BMC Performance Manager with BMC ProactiveNet Analytics

# Table of Contents

- Executive Summary** ..... 1
  
- BMC Performance Manager**..... 2
  
- Adding Value to BMC Performance Manager** ..... 2
  - Intelligent Baselineing..... 2
  - Intelligent Alarm Management ..... 3
  - Integration with Solutions and Tools ..... 4
  
- Part of a Comprehensive Event Management Solution**..... 4
  - Strong Foundation for BSM ..... 5
  
- Conclusion**..... 5

## Executive Summary

As a BMC customer, you have come to rely on BMC Performance Manager (formerly BMC PATROL) to help ensure the optimal performance and availability of your critical business services. Now, you can get even more value from your BMC Performance Manager implementation through the integration of BMC ProactiveNet Analytics.

BMC ProactiveNet Analytics filters, correlates, analyzes, and enriches the data and alarms provided by BMC Performance Manager to accelerate problem diagnosis and resolution, while also reducing the load on your IT operations staff. What's more, by analyzing BMC Performance Manager data, BMC ProactiveNet Analytics automatically learns to distinguish between "normal" and "abnormal" behavior in your distributed system, and sets thresholds accordingly. As a result, your IT staff no longer needs to set thresholds manually for the hundreds or even thousands of parameters you monitor. If your environment changes, BMC ProactiveNet Analytics automatically adapts, resetting thresholds where appropriate. Think of the time and effort you will save.

BMC ProactiveNet Analytics integrates out-of-the-box with BMC Performance Manager, so you'll be up and running quickly and effortlessly. By adding BMC ProactiveNet Analytics to your BMC Performance Manager installation, you can:

- > Quickly identify and resolve developing performance issues before they impact your business-critical applications, service level objectives (SLOs), or end users
- > Reduce system administration costs, minimize false alarms, and reduce errors by simplifying threshold management and eliminating threshold guess work
- > Accelerate problem diagnosis and resolution with accurate probable cause analysis
- > Reduce the load on the event management staff by filtering out false positives and providing intelligent, actionable events

This paper:

- > Presents a brief recap of the capabilities of BMC Performance Manager
- > Describes the advanced capabilities of BMC ProactiveNet Analytics and discusses how these capabilities significantly increase the value of BMC Performance Manager
- > Touches on the role that BMC ProactiveNet Analytics plays in the larger BMC Event Management solution, and ultimately, in a comprehensive Business Service Management (BSM) approach to managing IT from the perspective of the business

## BMC Performance Manager

BMC Performance Manager is an extensible, scalable, and easily customizable systems management solution for your IT environment. It provides a proven foundation for business-centric systems management and intelligent optimization of your infrastructure and business-critical applications. As such, it enables fast, automated problem detection, resolution, and performance optimization.

With BMC Performance Manager, you proactively manage the availability and performance of your distributed systems environment, including a broad range of applications, databases, operating systems, and network devices — all from a centralized console. Capabilities include monitoring, alert notification, reporting, historical trending, automatic restart of failed processes, and automatic termination of processes that consume more than a specified portion of resources, such as CPU resources.

BMC Performance Manager employs an innovative hybrid architecture that combines agent-based and agentless technologies to create a single, comprehensive monitoring infrastructure. This hybrid approach gives you the best of both worlds: the broad and highly granular monitoring offered by agent-based technology where needed, and the lower cost, lightweight management approach of agentless technology.

## Adding Value to BMC Performance Manager

BMC ProactiveNet Analytics leverages the agent-based data collection functionality of BMC Performance Manager and increases its value with advanced correlation and analysis capabilities. BMC ProactiveNet Analytics communicates directly with your existing BMC PATROL Agents, collecting performance and systems metrics directly from the BMC PATROL Knowledge Modules. As a result, you don't have to deploy additional agents.

BMC ProactiveNet Analytics provides a proactive approach to performance and availability management, speeds problem resolution, and reduces administrative costs. This advanced solution automatically:

- > Analyzes the comprehensive data collected by BMC PATROL Knowledge Modules to determine normal (baseline) performance ranges of IT infrastructure components
- > Sets and maintains dynamic thresholds based on normal performance and generates alerts when thresholds are

exceeded, providing early warning of impending performance problems

- > Correlates and filters alarms from BMC Performance Manager, reducing the volume of events arriving at the operations console to a manageable few
- > Performs detailed, real-time diagnostics on monitored devices, facilitating problem resolution

## Intelligent Baselineing

BMC ProactiveNet Analytics benefits from patented technology that collects data in real-time from BMC Performance Manager, and employs a powerful statistical engine to self-learn from this data the normal operating band (baseline) for each monitored attribute device or application. This process is called *intelligent baselineing*. (see Figure 1)

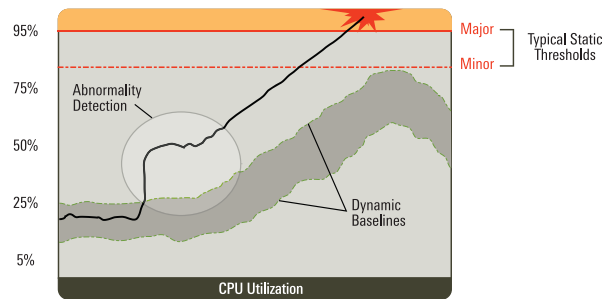


Figure 1. Intelligent baselineing is the foundation of early warning.

Intelligent baselineing is performed out-of-the-box; no additional configuration is required. Upon installation, BMC ProactiveNet Analytics immediately starts collecting data and automatically establishes a baseline for every one of the tens of thousands of attributes you may be tracking.

BMC ProactiveNet Analytics learns the operational trends of your environment by analyzing both the mode and time of the operations. It continually refines and expands its understanding of the normal operating range of each element within your infrastructure, automatically adapting to infrastructure changes and reassessing baselines accordingly. It maintains historical data on every attribute of every element, while continuously adding new data points, enabling both real-time and historical data analysis.

BMC ProactiveNet Analytics determines the baseline for each metric on an hourly, daily, and weekly basis. You set the baseline sensitivity to the level you require, and by so doing, determine the granularity of your monitoring. An hourly

baseline is the most sensitive and should be used only for a small number of critical performance indicators. Weekly baselines are more suitable for less-critical infrastructure components (see Figure 2).

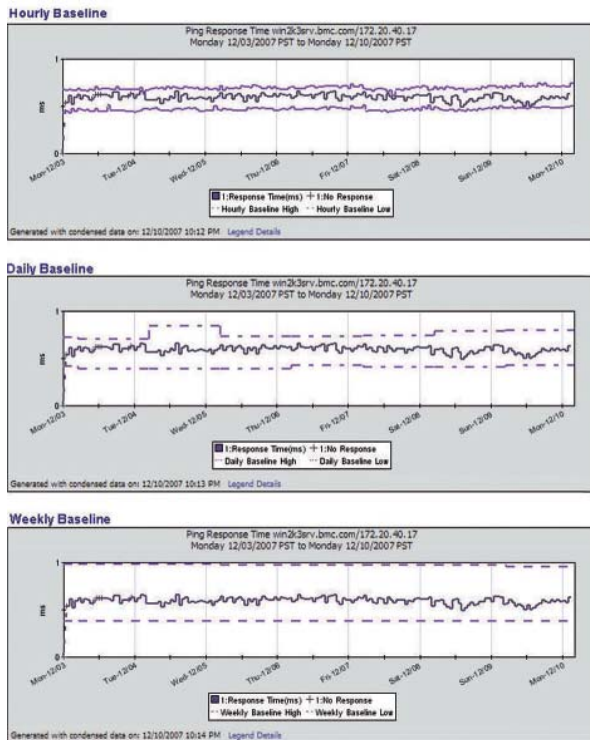


Figure 2. Three types of baselines offer flexibility.

Intelligent baselining forms the basis for identifying performance abnormalities in user transactions, network components, physical and virtual servers, middleware, applications, and databases. Based on normal performance, as indicated by the baselines, BMC ProactiveNet Analytics automatically identifies abnormal behavior and sets dynamic, statistical thresholds for each attribute on every monitored element within your environment — without requiring any scripting effort on your part (see Figure 3). This ability to identify abnormalities is the key to proactively addressing application transaction slowdowns.

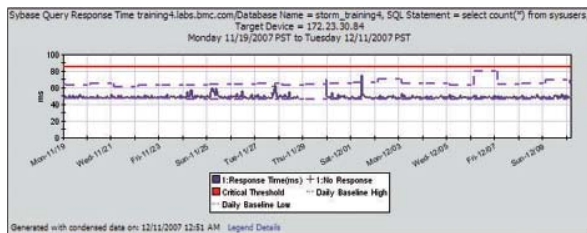


Figure 3. Intelligent baselining combined with traditional thresholds.

Although you can also set static (traditional) thresholds for any attribute, BMC recommends that you use static thresholds only for critical performance indicators and service level measurements, such as response time and availability.

Dynamic thresholds based on intelligent baselining are better suited for the remaining thousands of secondary and tertiary performance data points. For these secondary and tertiary data points, static thresholds may yield too many or too few alerts. What's more, unlike intelligent thresholds, static thresholds don't adjust dynamically to the fluctuations in behavior often seen with online applications and transactions, and they require more hands-on day to day management.

Intelligent baselining technology completely eliminates the need to manually write filtering and suppression rules to compensate for normal operating fluctuations. As such, it eliminates one of the most time-consuming and frustrating configuration activities: setting up and managing alarm thresholds. In addition, BMC ProactiveNet Analytics automates many tasks that previously required dedicated IT staff resources, such as continuously updating and maintaining scripts and other mechanisms to compensate for changes in the IT environment.

## Intelligent Alarm Management

BMC ProactiveNet Analytics provides intelligent alarm management, including automatic alarm suppression, alarm reduction, and alarm notification. It enables your IT staff to move proactively to address potential problems. BMC ProactiveNet Analytics generates intelligent events when it detects abnormalities. It delivers quantifiable value by enabling the IT operations staff to quickly identify and resolve developing performance issues before they impact your business-critical applications, SLOs, or end users.

Drawing on its extensive, self-learned knowledge of your application infrastructure and historical performance data, BMC ProactiveNet Analytics performs real-time performance analysis whenever it receives an alarm or detects an abnormality. Performance analytics is much more than just time-based correlation. It employs patented statistical quality control techniques to sift through real-time performance data, correlating observed performance with the normal performance expectations for each attribute. It also takes into account the dependencies and relationships of the infrastructure elements, the services the elements support, and captured expert domain knowledge.

When it detects an alarm or abnormality, BMC ProactiveNet Analytics applies statistical performance analytics to narrow the field of underlying probable causes to a few prime candidates. First, it filters through all performance abnormalities, zooming in on those that occurred at approximately the same time as the alarm. Leveraging its knowledge of your infrastructure, it then filters out all the issues that appear to have no logical connection to the alarm, such as nonrelated or insignificant abnormalities. This dramatically reduces the amount of data to be further analyzed. After

analyzing the remaining candidates, it categorizes and ranks them, narrowing your focus to the few most likely problem sources.

Through performance analytics, BMC ProactiveNet Analytics delivers to management consoles only those actionable events that are related to the probable causes of the associated performance issues. It virtually eliminates irrelevant and secondary events, such as false positives, that would otherwise be propagated from a single device failure. As a result, instead of sifting through hundreds or even thousands of alerts searching for clues, your staff is presented with only a few actionable probable causes.

In addition to real-time performance analytics, you can also configure BMC ProactiveNet Analytics to automatically perform detailed diagnostic procedures. These procedures execute a number of predefined or custom commands, capturing a rich set of data at the time an abnormal performance is detected. These commands can be performed remotely, and don't require an additional agent. The diagnostic data supplements the probable cause information generated by real-time performance analytics, providing additional forensic information to further speed problem analysis and resolution. The diagnostic data provides the IT staff triaging the problem with insight into what exactly had been taking place in the infrastructure when the performance began to deviate from its normal range.

### Integration with Solutions and Tools

If you're looking to further enhance your BMC Performance Manager installation, BMC ProactiveNet Analytics integrates with other BMC solutions, as well as monitoring and event management tools from third parties. BMC ProactiveNet Analytics allows you to combine both IT and business data sources, benefiting your organization by adding both performance and availability-based data analysis; correlating IT and business data; and learning the normal range of business metrics per minute, hour, or day for certain times of the month, season, or years.

For example, BMC ProactiveNet Analytics integrates with BMC Transaction Management Application Response Time, a key component of the BMC User Experience Management solution. This integration offers the ability to correlate transaction data (i.e. the user's perspective) with the data collected from the rest of the infrastructure that includes systems, applications, Web servers, databases, networks, and other data types. This added scope of data collection adds additional user perspective when running probable cause analysis provided by BMC ProactiveNet Analytics.

This integration provides a holistic picture of your infrastructure health, its pain points, and affected areas. Moreover,

BMC ProactiveNet Performance Analytics creates a baseline of the data collected by BMC Transaction Management Application Response Time, and provides an early warning when abnormal behavior patterns become too significant to be missed. This early warning gives you time to address the issue in a proactive manner, transparent to end users.

As another example, BMC ProactiveNet Analytics integrates with BMC Remedy Service Desk. When it detects an abnormality that requires attention, BMC ProactiveNet Analytics automatically generates an incident ticket, alerting the service desk to a problem before it results in service disruption. BMC ProactiveNet Analytics includes rich analytics information with the ticket to speed problem analysis and resolution.

Finally, BMC ProactiveNet Analytics integrates with your existing third-party monitoring and event management solutions, such as CA Unicenter, Microsoft Operations Manager, and IBM® Tivoli Enterprise Console®, extending the value of your initial investment in these tools. This integration permits you to achieve true enterprisewide visibility and deep understanding of how various IT infrastructure elements relate and impact one another.

## Part of a Comprehensive Event Management Solution

BMC ProactiveNet Analytics is an integral component of the broader BMC Event Management solution.

The BMC Event Management solution detects IT problems, identifies performance abnormalities, provides insight into root cause, determines business impact, and provides comprehensive reporting — all to minimize downtime, reduce mean time to repair (MTTR), and improve operational efficiency.

BMC Event Management enriches events with contextual information and correlates events across applications and technologies. This provides more accurate probable cause analysis and reduces the amount of information that your IT staff has to digest. What's more, the BMC Event Management solution assesses these "intelligent" events against service impact models to provide insight into the impact of the events on the business, thus enabling you to:

- > Optimize your existing IT investment by linking business processes and services to the underlying IT infrastructure, and by maintaining this information in a centralized database that is shared across all BMC solutions
- > Improve staff efficiency and service availability by automatically prioritizing events according to business importance, allowing your IT operations staff to focus on those issues that have the greatest impact on the business
- > Reduce MTTR by filtering and correlating event data to deliver meaningful and actionable information to IT staff

- > Enforce and maintain SLOs by quickly identifying which events put service level agreements (SLAs) at risk
- > Reduce second-level calls by providing the service desk with automated notifications that contain IT outages, business impact information, and affected users
- > Increase IT efficiency by eliminating false positives and event overload through advanced probable cause correlation

### **Strong Foundation for BSM**

The comprehensive BMC Event Management solution provides a direct path to BSM by developing meaningful, tangible connections between the IT organization that delivers services and the business constituents who use them. BSM combines best-practice IT processes, such as support for the IT Infrastructure Library® (ITIL®); automated technology management; and a shared view of how IT resources directly support the business. BSM brings you a step up in service management maturity level: You transition from managing IT from a technology perspective to managing IT from the perspective of the business.

## **Conclusion**

You can greatly enhance the value of your BMC Performance Manager implementation by using BMC ProactiveNet Analytics to provide such advanced features as intelligent baselining and intelligent event management. These features enable you to take a proactive approach to performance management and accelerate problem resolution, while also reducing the load on your IT operations staff through greater efficiency.

With BMC ProactiveNet Analytics, you can improve service delivery and service support while reducing costs. With its low incremental cost and high return on investment, BMC ProactiveNet Analytics provides a valuable addition to your BMC Performance Manager installation, one that can help you improve your company's bottom-line business results and drive business success.

To learn more about BMC ProactiveNet Analytics, please visit [www.bmc.com/bmcproactivenetanalytics](http://www.bmc.com/bmcproactivenetanalytics)



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## About BMC Software

BMC Software delivers the solutions IT needs to increase business value through better management of technology and IT processes. Our industry-leading Business Service Management solutions help you reduce cost, lower risk of business disruption, and benefit from an IT infrastructure built to support business growth and flexibility. Only BMC provides best-practice IT processes, automated technology management, and award-winning BMC Atrium technologies that offer a shared view into how IT services support business priorities. Known for enterprise solutions that span mainframe, distributed systems, and end-user devices, BMC also delivers solutions that address the unique challenges of the mid-sized business. Founded in 1980, BMC has offices worldwide and fiscal 2007 revenues of \$1.58 billion. Activate your business with the power of IT. [www.bmc.com](http://www.bmc.com).

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