

# Strategies for Effective Application Problem Management

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## Strategies for Effective Application Problem Management

By Herb VanHook

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Outdated, manual approaches to problem management — for example, “eyeballing” logs and spreadsheets or running internally written scripts — are costing businesses like yours a lot of money. According to one industry study, software defects cost the U.S. economy about \$60 billion annually, primarily because of the impact on business availability and performance. The \$60 billion includes the labor cost to find and fix these problems. The study also reports that 80 percent of the time spent in managing an application lifecycle is spent fixing defects.

To reduce these costs, you need proactive and timely problem detection coupled with automated problem isolation. That calls for the right combination of software and processes. But what should you look for in a problem management solution? The truth is that every

organization is different and so the exact requirements vary somewhat from one organization to another. There are, however, key capabilities that you should look for when you're selecting a solution for your environment.

## **Getting Started**

A comprehensive problem management solution should address all three major aspects of the problem management process — detection, isolation, and resolution — and offer key capabilities that help drive efficiency and effectiveness for dealing with problems in your IT infrastructure. Look for the following capabilities:

1. **Availability, performance, and throughput monitoring.** A thorough monitoring strategy encompasses the application infrastructure and the end-to-end transaction execution flow. Moreover, to spot problems before they impact users, it should include monitoring of synthetic transactions (simulated users).

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2. **Isolation and categorization of problems.** A single transaction may trigger a sequence of complex processes involving events on dozens of servers. The root cause of a problem could be a software issue, a hardware fault, a configuration issue, or human error. An effective solution isolates and categorizes the problem quickly and helps pinpoint its location precisely.
3. **Comprehensive data capture.** To determine the root cause of a problem, you must have data that fully describes user actions, application configuration, access to external resources, application performance, and full code-level execution history. Re-creating the problem environment to get that data is time-consuming and cumbersome, so an effective solution should capture data automatically and provide an easy way to drill down for root-cause analysis.
4. **Data capture from clients and servers, both remote and local.** Problems occur everywhere: on servers and workstations; inside and outside the firewall; locally and at remote sites. So your solution must capture root-cause data from all application tiers — clients, Web servers, application servers, and so forth — as well as from all possible run-time environments, local or remote.



5. **Support for any type of application problem.** You encounter many different types of problems throughout the application lifecycle. Functional problems, such as coding errors and bugs, sneak through QA testing. Performance issues occur due to non-optimized code, insufficient hardware resources, or incorrect settings within the run-time environment. Configuration problems invariably occur when you distribute across many components, and operator errors sometimes disrupt mission-critical applications. Your solution needs to address all of these problems.
6. **Support for multiple platforms.** You may be using both J2EE and Microsoft technologies for new application development capabilities. And, most likely, you still have a significant investment in existing legacy applications. A comprehensive solution should support them all.
7. **Role-based views.** According to industry experts, when software fails, nine people on average “touch” the problem before it is resolved. Each one of them looks at different data and different aspects of the problem. Application developers need visibility into code execution; application support staff look at end-user configuration settings; and performance engineers analyze system and application performance. Role-based views ensure that these people have the information they need without being overwhelmed by too much data.

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8. **Integration with existing tools.** You already have systems and processes for production problem resolution, including a variety of homegrown logging, defect tracking, service management, and help desk processes. The ideal solution integrates into these systems and processes. These integrations must leverage existing workflows to communicate root-cause data between different teams engaged in the problem-resolution process. Additionally, the solution must seamlessly integrate with homegrown logging mechanisms to ensure it is fully utilized by application developers and support engineers who are accustomed to using internal logs as the primary means of problem diagnostics.
9. **Minimal and dynamically controllable overhead.** To detect application problems quickly and proactively, you need a 24x7 transaction monitoring solution that adds only minimal overhead to your production environment. The solution must capture substantial volumes

of data without disrupting or degrading the production environment. It must allow you to balance the level of data capture against performance overhead, without restarting the application, so that business operations are not disrupted by problem capture activities.

**10. Quick and non-disruptive processes for reactive problem isolation and resolution.**

Although monitoring solutions run 24x7 to detect problems, actual problem resolution is often a reactive process. So you need the ability to deploy capture agents on-demand to local or remote environments without disrupting the ongoing operation of the application. These non-intrusive agents should be able to record problem data while the application runs undisturbed. You should be able to accomplish this without any changes to your source code, executables, or run-time environment.

## **The solution must capture substantial volumes of data without disrupting or degrading the production environment.**

### **Business Benefits**

A comprehensive solution for application problem management lets all IT staff, from operations to development, simultaneously understand the true end-user experience; see the components involved in end-to-end transaction service delivery; and rapidly identify the root cause of a problem so they can find and fix problems that affect critical business applications. The payback is substantial. Such a solution enables your IT staff to pinpoint the root cause of production application problems up to 80 percent faster than with manual processes. It also eliminates time-consuming, disruptive processes for gathering information from end users. With an effective solution in place, you can perform triage more rapidly to avoid unnecessary escalations to the development team, and you eliminate the need to reproduce the environment or replicate the problem before resolving it.

These are just a few of the advantages. Given the critical nature of today's business applications, now is the time to develop a comprehensive strategy and deploy the solutions and processes you need for swift isolation and resolution of application problems. Once you do, you'll enjoy higher performance and availability and reduced risks to the business.

For more information, visit [www.bmc.com](http://www.bmc.com).



## 5 Benefits of Implementing a Problem Management Solution

1. Understand the true end-user experience and see the components involved in end-to-end transaction service delivery.
2. Pinpoint the root cause of production application problems up to 80 percent faster than with manual processes.
3. Eliminate time-consuming, disruptive processes for gathering information from end users.
4. Perform triage more rapidly to avoid unnecessary escalations to the development team.
5. Eliminate the need to reproduce the environment or replicate the problem before resolving it.



### About the Author

*Herb VanHook is vice president of Corporate Strategy at BMC and has held several key positions at META Group (most recently serving as interim president and chief operating officer). VanHook has more than 30 years of experience in information technology, including senior positions at IBM, Computer Associates, and Legent Corporation.*