

Ten Ways to Avoid Performance Black Holes in Data Center Build Outs

Emerging technologies in the data center place organizations at a unique crossroads.

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The convergence of virtualization, consolidation, and cloud computing in today's data center offers more promise and risk than at any time since the client-server revolution of the 80s and 90s. The promise lies in optimizing data center operations by reducing capital expenses, management costs, and energy consumption. The risks include compromised security, reduced visibility, and degraded availability of critical IT resources.

In this quickly changing landscape, the most important question to ask is, "Will my monitoring tools provide visibility and analysis into these new data center technologies and challenges?" Here are 10 key capabilities your performance management solution will need to successfully monitor data center performance and avoid visibility black holes.

Move at Data Center Speeds: The more packets your solution fails to capture, the more likely application issues will go unresolved. Network data centers are quickly migrating to full 10 Gb rates. Verify your solution captures full-duplex 10 Gb at line rate so you don't miss packets.

Store Everything: Given the massive increase in the amount and types of information traversing the network, capturing terabytes of data for post-event analysis is a necessity to effectively resolve intermittent application anomalies. Use solutions with larger packet-capture capacities to increase the probability the problem is recorded for quick resolution.

Benefit From Multiple Perspectives: Within the data center, you need complete and integrated visibility into all aspects of the IT infrastructure to rapidly and accurately resolve problems. Although some IT professionals will suggest using only packet or flow data, look for solutions providing more than one perspective of performance. Choose a solution that provides views into your network, applications, and systems for a comprehensive approach to problem resolution.

View Virtual Networks: Consolidating servers within a virtualized environment can result in improved management and utilization of computing resources but at the risk of decreased application visibility. Ensure the solution provides an integrated view of both virtual and physical environments to avoid this risk.

Monitor through the Cloud: When implementing any form of cloud service, verify whether visibility and analysis will suffer. Your solution should provide key metrics for managing performance across the WAN/Internet, SLA enforcement, ensuring precedence, and pinpointing the cause of delay to the internal network, ISP, or cloud service provider.

Optimize Multi-Tiered Applications: Successful data center implementations often incorporate multi-tiered applications to achieve optimal service delivery. The challenge is to capture these efficiencies while avoiding problems presented by services that operate across multiple network segments and tiers. Multi-segment analysis is essential for resolving issues in highly-distributed environments.

Prepare for the UC Surge: Unified Communications (UC), such as VoIP and videoconferencing, will transform how business runs by increasing user collaboration. UC's promise is great, and so are the network overhead requirements. Video consumes 5-10 times the bandwidth of VoIP. To avoid degraded performance, use solutions that provide UC-specific metrics.

Know the Warning Signs: Given the mission-critical nature of the data center for an organization, executive management is now insisting on increased accountability for overall service delivery. Integrated enterprise-wide reporting and alerting address these demands by providing real-time notification of events and infrastructure status to ensure service delivery agreements are satisfied.

Post-Event Intrusion Resolution: The question is not whether your IT infrastructure will be compromised but what to do when the breach is detected. Beyond the risk to your company's intellectual property, financial details, and legal exposure, application performance can also be significantly affected. Choose solutions offering integrated security capabilities, including the ability to import open source Snort rules and define custom filters for unique threats.

Plan for Future Growth: A comprehensive view of your existing user application performance status is the foundation upon which to expand your IT infrastructure as your business grows. The most effective solutions offer integrated capacity planning, ensuring adequate resource availability to avoid degraded performance.

A Final Word

Emerging technologies in the data center place organizations at a unique crossroads. Only by implementing comprehensive performance management solutions can companies fully realize the benefits of these technologies while avoiding obstacles that often plague the ill-prepared.

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