VIRTUAL INSTRUMENTS

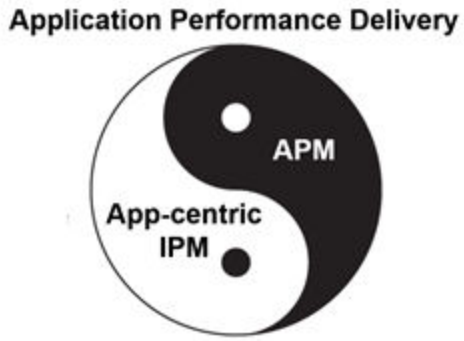
INFO SHEET

The Benefits of Deploying Application *and* Infrastructure Performance Monitoring

Ensuring that applications and infrastructure perform better together through comprehensive visibility and authoritative insight

Today's Application Performance Delivery Challenges

Business-critical IT application infrastructures are becoming increasingly shared and multi-tenant, often supporting hundreds of applications, which continue to increase in complexity and scale. The need to bring new capabilities to market faster to remain competitive is driving continual change. Facilitated by the adoption of agile development and DevOps deployment techniques, the result is a continual state of infrastructure change to meet business requirements while delivering a flawless end-user experience. The supporting IT infrastructure must deliver hyper-responsive performance and complete availability.



Today, each IT domain lives in a stovepipe, with minimal understanding and view into other domains. Problems in one domain frequently impact other domains, and the supported applications in the shared environment, resulting in much time wasted conferring and attempting to correlate metrics like server resource utilization, storage port contention, datacenter network latency, and application response time data from various application performance monitoring (APM) tools. Tedious, error-prone data-gathering tasks keep staff from more important work, such as actually optimizing IT resources and rolling out new applications.

Additionally, building in application SLAs, especially in hybrid data center environments, in the face of enormous scale and ongoing changes is nearly impossible. Application owners need a complete real-time view of the infrastructure servicing their applications, while the infrastructure teams need to see how application workload changes are affecting or will affect overall infrastructure performance. Today's silo-centric approaches to providing this type of cross-domain visibility are causing excessive finger-pointing and preventing IT organizations from creating and adhering to application SLAs. A better approach that combines APM tools with application-centric infrastructure performance monitoring (App-centric IPM) is the answer.

Application Performance Monitoring (APM)

APM solutions focus on behavior and performance of the application, its internal code structure components, and its supporting runtime environments and components of the operating system on the servers that applications are deployed on. They usually capture the web user experience of an application or service. APMs measure internal code call or method response times, errors and load, and other aspects such as page requests, response time, database SQL query times, and queue depths for things like MQ or Enterprise service buses like Tibco. They measure response times of the queue managers, database components, gateways, and utilization of physical, virtual and web-application servers. APMs tell a customer if the application is working well and if not, leads them to the

problem causality if the problem is in the code or runtime environment.

Infrastructure problems cannot be sufficiently diagnosed with APMs because they are largely blind beyond the virtual server they are deployed on, with no visibility into the storage network or storage arrays. Although many APM vendors claim otherwise to be more broadly relevant, they simply can't find or diagnose any but the simplest infrastructure problems.

APM tools are typically used by application support, operations, QA, and development teams to rapidly identify, isolate, and repair application issues. These teams usually have a basic level of understanding of how user networks or data center infrastructures operate, but not nearly the detailed knowledge required to resolve infrastructure related issues. They live and breathe application code, integration points, and component (server, OS, VM, JVM, etc.) metrics. They call in the network team when they think there is a network issue or the virtualization and storage managers when they think it's server or storage related. APM tools often have limited value as they lack real-time visibility of how the application interacts with its supporting infrastructure components, and they are typically only instrumenting the top tier apps, which is a small fraction of a company's business applications. So, they have no visibility into secondary apps and worse, cannot detect when secondary apps (noisy neighbors) affects the APM-instrumented Tier 1 apps.

Application-centric Infrastructure Performance Monitoring (App-centric IPM)

App-centric IPM solutions focus on performance and availability management of the holistic data center infrastructure, from the application to the storage. The best App-centric IPM products record hundreds of metrics in real-time, correlate time-relevant events from the application to the storage, and point to potential problems and optimization opportunities through advanced analytics. IPM solutions quickly tell an IT manager if the infrastructure is working well, and if not, leads them to the problem causality. To be effective, App-centric IPM products must:

- Continuously capture, correlate and analyze system-wide heterogeneous infrastructure performance as measured by response time, plus utilization and health metrics, in real-time.
- Provide a vendor-independent comprehensive view of system-wide infrastructure performance, from client, to server, to network, to storage in the context of the applications being serviced by the infrastructure.
- Understand the relative business value and priority of the applications being supported by the infrastructure.
- Leverage an analytics framework for contextual understanding, correlation and discovery. Gathering and presenting metrics in a dashboard is insufficient. Predictive analytics are essential to preventing performance problems and outages.
- Understand how the applications are stressing the infrastructure and offer definitive insights that are accurate and actionable by the operations and engineering teams
- Scale to handle a very large number of physical devices and the associated metrics without risk of hitting a limit

Virtual Instruments

Virtual Instruments offers the industry's leading App-centric IPM platform, VirtualWisdom. It empowers IT staff to deliver on the complex requirements of their application infrastructure. Virtual Instruments provides vendor-independent insights into the performance and availability of the end-to-end system—across physical, virtual and cloud environments. We intelligently correlate and analyze an unmatched breadth and depth of data, transforming data into answers and actionable insights. This enables applications and infrastructure teams to collaboratively promote and guarantee performance-based SLAs, dramatically increasing the value of the infrastructure. Enabling Virtual Instruments products include:

- VI's application workload I/O profiling enables engineers and architects with the essential insight needed to optimize the cost and assure the performance of networked storage infrastructure, eliminating the risk and guesswork associated with changes, migrations or consolidations.
- VI's infrastructure monitoring offers a unique combination of machine and wire data probes combined with advanced analytics to correlate and analyze a breadth and depth of data never before possible—collected non-intrusively from throughout the end-to-end infrastructure. This highly accurate and comprehensive solution enables IT managers to start proactively managing performance, stop reactive troubleshooting, and achieve significant cost optimization across their infrastructure – all in a vendor-independent approach.

Only by deploying both APM and App-centric IPM solutions can IT organizations truly guarantee performance across the emerging hybrid data center.

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