

INDIANA UNIVERSITY SPEEDS PERFORMANCE TUNING AND DIAGNOSTICS FOR ORACLE AND SQL SERVER ON VMWARE

With a single-pane view into database, virtual and physical layers, Indiana University speeds database performance to be more responsive

The Challenge for Indiana University

Indiana University (IU), a respected public education institution with more than 110,000 students and 19,600 employees, operates eight campuses and more than 200 research centers and institutes throughout Indiana. To achieve flexibility, scalability and cost savings in its IT infrastructure, IU has become a trailblazer in virtualization, and in deploying enterprise databases on VMware. Today, IU has more than 230 Oracle and 50 Microsoft SQL Server enterprise-class databases and more than 2,000 VMware virtual machines (VMs). However, for IU's Enterprise Infrastructure Database Administration team (EDBA), database problem identification and resolution typically took hours or days. Plus it involved getting separate inputs from virtualization, system, and storage administrators. To be more responsive, the EBDA team needed a faster, more proactive way to identify the root cause of performance issues.

The Solution: SolarWinds DPAVM Unifies Performance Data from the Database, Virtual and Physical Layers

IU implemented SolarWinds DPAVM, based on its unique abilities to provide both an easy-to-use visual history and real-time performance data across the database, virtual and physical layers. Additionally, DPA requires no agents on the monitored servers and doesn't impact current database performance. These combined capabilities enable the EBDA team to be proactive in database management and deliver exceptional service levels.

The Results: Identifying Issues Faster

Previously, the EBDA team identified performance issues using information from virtual and systems administrators, and with diverse tools such as the vSphere client. This ad hoc process was cumbersome and the data was often limited to just the prior 24 hours. Now, with DPAVM, the EBDA team views historical and trending data for the past day, week, month or any relevant time period. Now they can better identify performance regression resulting from application upgrades, software changes or system modifications, correlate SQL and database activity with virtual, OS and physical host performance, and evaluate hardware lifecycle replacement strategies. For example, the team can quickly correlate information about an event in the virtual layer, such as use of vMotion to move a VM from one host to another, to database performance, without requiring input from the virtualization or systems administrators. The information is so easy to understand that IU's development partners can answer questions on their own.



Challenge: Proactively diagnose and tune database performance on an estimated 280 Oracle and Microsoft SQL Server enterprise-class databases running on VMware

Solution: SolarWinds DPAVM unites all performance management – including database, VM and physical host indicators -- in one comprehensive, single-pane view safely shared between DBAs, developers, and system administrators

Benefits:

- Performance issues resolved faster and with fewer resources
- Proactive issue identification with improved service-levels and end-user experience
- Overall improved performance on enterprise-critical Oracle and SQL Server databases on VMware

The Results: Improving Performance by Identifying and Addressing Underperforming SQL

At IU, optimizing application performance, especially in enterprise-critical databases, is a top priority. Yet the EDBA team struggled to identify and remediate underperforming SQL. For its Oracle databases, the team used Oracle's Automated Workload Repository (AWR), but these reports weren't real-time, and only a DBA with low-level, specialized database knowledge could interpret them. For the Microsoft SQL Servers, the team had no tools. With DPAVM, the EDBA team quickly identifies underperforming SQL issues, and establishes baseline behaviors to aid in issue identification in the future. For example, using DPAVMs' granular data, the EDBA team quickly found a dramatic increase in the number of query executions for one underperforming SQL, even though development staff reported that normal data volumes were to be expected.

What's Next for Indiana University?

Commenting on how DPA has made his team more proactive, Dan Young, Manager of Enterprise Database Administration, says, "We've been able to examine SQL activity and trends during core business hours and quickly identify and remediate underperforming SQL. DPAVM allowed us to identify and fully remediate the most intensive Decision Support SQL statement in a typical processing day within the first full week after installation." According to Young, the EDBA team now spends more time on strategic initiatives and contributes more fully to realizing IU's mission of enabling more effective research, teaching and learning through technology.

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— Dan Young,
Manager of Enterprise
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Indiana University

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