

Case Study



Industry

Entertainment, Gaming, Media

Why AppDynamics for Databases?

- Low overhead – production-safe monitoring technology
- Rapid installation – agentless technology meant no installation or changes required on the monitored database platform
- Ease-of-use – intuitive web GUI meant it was easy to share information between teams.

“The best thing about AppDynamics in production is the amount of time it saves us when investigating performance problems. This means we fix problems faster and keep our customers happy. It automated our approach to performance tuning and removed the need for manually reviewing data from different tools.”

Unai Basterretxea
DBA Engineering Manager

Betfair chooses not to gamble with database performance

AppDynamics for Databases

Introduction

Betfair is the world’s leading online betting exchange, a concept it has pioneered. Driven by cutting-edge technology, Betfair enables customers to choose their own odds and bet against each other, even after an event has started. Betfair processes 5 million transactions a day and more than 300 bets a second.

“When we thought about our selection criteria for a database performance monitoring tool, there were four things that were key,” said Nigel Noble, Sr. Performance DBA at Betfair. “Firstly it needed to be able to provide us with a very fine level of detail, so that we could capture very short duration performance issues. Secondly it needed to be able to cope with monitoring our huge transaction volumes on various Oracle platforms, without adding significant overhead. Thirdly it needed to be good at profiling performance during load-tests, allowing us to quickly and easily highlight bottlenecks, and compare differences between multiple tests. And fourthly it needed to support not just Oracle but SQL Server and MySQL.”

“In just a few months we’ve become totally hooked on AppDynamics for Databases. Its ease of installation has meant that we’ve been able to deploy the product quickly, and because it is so intuitive and easy to use we’ve had no trouble in getting our colleagues across the business to use it. AppDynamics is used throughout all stages of application development as well as in production, helping everyone to communicate internally about database performance issues. I now frequently email my colleagues URL links to AppDynamics that point them directly ‘in context’ to the issue or SQL statement that I’m working on. As you can imagine, this saves us a lot of time and helps to ensure that we can get to the root cause of an issue more quickly, which is better for us and our customers.”

Granularity

“Improving visibility into very short duration performance problems was critical for Betfair. In the past, we’ve seen performance problems in production that affect our customers for no longer than 15 seconds and then go away. But they always return at a later date because we haven’t been able to see why they happened or do anything about it. Having a problem that only lasts 15 seconds may not sound that serious but if it’s the wrong 15 seconds it could seriously impact both our customers and the business. When you consider the huge number of customers that use our website to place bets just prior to the start of a major sporting event, then you can understand the impact having a performance slowdown at that time would have, hence our need to be able to understand exactly what is going on inside the database and resolve it the first time it strikes.”

“Over the years we have reviewed a number of database monitoring tools but each time have been disappointed to find that the best granularity they could provide in our busy production environment was a 15 minute time slice. Although this information is interesting when looking at over the long term, when applied to our short duration performance problems, you realize that they completely miss the information we need, and effectively leave us blind. AppDynamics, in contrast, enables us to select the level of granularity we require for each of our databases; we routinely set the time slice to 10 seconds to give us the granularity and detail we require.”

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“AppDynamics’ responsiveness to our questions and requests for enhancements has been nothing less than superb.”

Oliver Cook
Engineering Services Manager at Betfair

“...being able to learn how to use AppDynamics on, say, Oracle and then use this knowledge when looking at SQL Server is great. Over time I’m sure that being able to transfer skills in this way will help us provide the business with a higher level of service and our customers with consistently high performance.”

Oliver Cook
Engineering Services Manager at Betfair

Scalability

“The last thing you want when trying to improve database performance is for your performance monitoring tool to impose a significant overhead, particularly when being implemented on production or highly stressed load testing servers. For this reason we tested AppDynamics exhaustively and confirmed that even when capturing information at the finest level of detail that total overhead would still be less than 1% of CPU resource. This overhead was well within acceptable limits and has enabled us to deploy AppDynamics on even our most heavily loaded Oracle servers, which are among the busiest in the world.”

Support for load-testing

“Betfair has seen year on year customer usage almost doubling for four years and now needs to deal with regularly in excess of 25,000 dynamic page impressions per second. To meet the demands of high performance it is essential that we load test all of our applications thoroughly prior to release, because if we get it wrong, even a seemingly innocuous change can have a significant impact on the customer experience,” said Oliver Cook, Engineering Services Manager at Betfair. “AppDynamics has helped us to significantly reduce the time it takes to isolate and resolve performance problems during development and pre-production load testing. The result is that we can release new functionality faster without having to compromise on quality.”

Support for production

“The best thing about AppDynamics in production is the amount of time it saves us when investigating performance problems,” said Unai Basterretxea, DBA Engineering Manager at Betfair. “Using AppDynamics, we can now fix problems faster and keep our customers happy. It has dramatically improved the way we handle performance problems, ensuring that we get to the root cause of a problem via an automated process rather than having to review database information manually.”

“It’s also important to realize that AppDynamics displays performance information based on the time spent waiting for resources rather than simple metrics, ensuring that when we run into a problem we can quickly isolate where time and resources are being wasted and work to remove the bottleneck. AppDynamics has made a real difference and we would not be without it.”

Comparisons made easy

“Comparing any two database loads in a changing environment can be complex. This is especially true in a load testing environment where many different scenarios are evaluated for performance and scalability. Being able to quickly see what has changed between the different scenarios is vital. This is where AppDynamics load test comparison report excels. It immediately highlights where things have changed either positively or negatively saving Betfair valuable analysis time.”

“The report gives a side-by-side comparison of two load tests, clearly showing the key performance indicators of each test along with the differences. It is easy to spot any change in CPU utilization, wait time, or number of executions for each individual SQL statement as well as for the database instance overall. The AppDynamics load test comparison reports are not limited only to load testing and can simplify the task of comparing any two scenarios. For example you could compare a QA load with production, or compare two nodes of a cluster. Or you might want to compare a period of time before and after a change such as the addition of a new index.

“Whatever your reason for using it, the AppDynamics load test comparison report is a real time saver.”

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Nigel Noble
Senior Performance DBA at Betfair

Support for Oracle, SQL Server and MySQL

“It was common sense for us to look at a standard tool for use across our database estate, and AppDynamics’ unique ability to support MySQL as well as Oracle and SQL Server from exactly the same user interface was an important benefit. Like all organizations, the different members of our team have different skill levels across each of the database platforms we support. So being able to learn how to use AppDynamics on, say, Oracle and then use this knowledge when looking at SQL Server is great. Over time I’m sure that being able to transfer skills in this way will help us provide the business with a higher level of service, and our customers with consistently high performance.”

SQL Server Case Study

Betfair.it runs Betfair’s Sportbook betting site for Italy. It is a very busy site backed by a large SQL Server 2005 database. When CPU consumption peaked to 100% at random times of day and for quite lengthy periods, AppDynamics was able to provide deep dive visibility into exactly what was occurring and helped locate the root cause of the issue.

AppDynamics was able to provide a performance profile of each and every SQL statement and stored procedure executing within the SQL Server instance, and assess the percentage of CPU consumed by each. It quickly pinpointed two stored procedures consuming the majority of the CPU resource, but this was only part of the story. What AppDynamics clearly showed was that the number of executions was high, yet fairly static, for the two offending stored procedures. However, the number of logical I/O operations had increased fourfold during the problematic time periods due to a shift in query execution plans; it was this that had caused the CPU to spike. Further investigation revealed that a batch operation preceding the problem had deleted many rows and triggered the shift in execution plan; correlation of these two events was key in understanding what had occurred and vital for resolving the issue.

Oracle Case Study

Betfair’s Oracle databases are among the busiest in the world, and managing their performance levels is critical. AppDynamics has proven its ability to monitor these heavily utilized Oracle databases in great detail around the clock while incurring only a tiny overhead and enabling the various operational, testing and development teams to share information about performance trends and bottlenecks much more effectively.

AppDynamics provides graphical views of resource usage over time that show exactly where Oracle and server resources are being consumed by the various applications. This enables Betfair to focus on the bottlenecks caused by time spent waiting on resources, making it easy to get to the root cause of a problem. This is a way of working which allows the Betfair team to quickly view the performance profile of each component part of their applications, making it very easy to find out how a particular function is performing e.g. the User Login process, before drilling down to view the performance of each SQL and PL/SQL statement involved in the process.

AppDynamics also helps with performance comparison analysis across different time periods and/or different database instances. For example, it is possible to compare two busy Saturday afternoons, or report on how the pre-production load test compares with the live database. This type of analysis is even more valuable when tracking the performance of new code releases into production. The comparison report can be filtered by a specific functional area, and it is then possible to get a report on the exact CPU and wait-time differences before and after the code goes live. This means that it is easy to assess the impact of new code releases, and provides the team with all the information they need to confirm that a change is good hence reducing risk by immediately spotting any adverse effects.

How to Get Started

Try it for free
appdynamics.com