



Foglight® for Cross-Platform Databases

Ensure database stability and obtain maximum performance across all your database platforms.



SIMPLIFY DATABASE PERFORMANCE MONITORING AND MANAGEMENT

Today's DBAs are being asked to manage increasingly complex database environments, which include commercial relational systems like SQL Server, Oracle, and DB2, open source systems like MySQL and PostgreSQL, and non-relational systems like MongoDB and Cassandra. Not only do you have to administer more and more databases, but you also have to explore and

deploy a much broader variety of databases. After all, adding platforms helps organizations avoid single-vendor lock-in. On top of that, DBAs themselves often push for adding in open-source solutions, many of which are fully mature and offer the transparency, scalability, flexibility and support that DBAs and their organizations require.

However, this strategy comes at a price: Large, heterogeneous environments can be a serious challenge to manage. As a DBA,

Get started today at quest.com/products/foglight-for-cross-platform-databases.



Simplify database performance monitoring and management — even as your database environment becomes increasingly complex — with Foglight for Cross-Platform Databases. The solution standardizes performance monitoring and diagnostics across a broad range of platforms so you can ensure consistently high database performance and availability.

database performance is one of your top responsibilities and system uptime is likely the key metric by which you are measured. How do you manage it all?

Many IT organizations try to solve the problem by hiring additional DBAs, making significant investments in training courses and implementing platform-specific tooling. Others simply do nothing and hope that their existing staff and tools can get the job done. However, data volumes are growing, costs are increasing and users are becoming more and more demanding of a high-performing and highly available database. So if you just keep doing what you've been doing you will fall behind.

What if you could centrally manage your cross-platform database infrastructure, providing consistent visibility and diagnostic workflows across each system that you manage? What if you had a solution for working with all of your databases, including both on-premises, hosted systems, as well as cloud-based databases? Foglight® is the only solution on the market today that can meet the complex, cross-platform needs of today's IT environments. With alerting and notification, real-time and historical

diagnostics and reporting, combined with unmatched analytics of collected data, Foglight for Cross-Platform Databases makes your job easier and ensures the health and performance of your entire database environment.

A WEALTH OF FEATURES THAT WORK THE SAME ACROSS YOUR ENTIRE DATABASE ENVIRONMENT

Unlike database-specific point solutions, Foglight for Cross-Platform Databases delivers a coherent, global view of your entire database environment, with consistent, powerful functionality. No matter what combination of supported databases you're managing, you'll get all of the following capabilities:

Global view

Resolve performance issues across database platforms by determining your most critical problems and taking immediate action.

Easy filtering

With one click, limit your view to just one database platform or a particular database server. Or set up groups of database servers and click to view just your production servers, for example.



Deep-dive problem diagnostics

Quickly drill down to investigate platform-specific database health or performance issues — both real-time and historical — in detail.

Built-in intelligence

Get integrated management and performance views that enable you to understand database health and activity. Pop-up advice includes correlated workflows.

Adaptive baselines

Receive alerts about deviations from normal activity during different time periods and track performance with automatic detection and calculation of normal ranges for all metrics.

Rich historical data

Resolve performance issues by easily navigating through diagnostics and alarm data from any drill-down screen.

Drag-and-drop reporting

Use the data collected by Foglight to develop customized views and reports.

Multi-dimensional SQL workload drill-downs

Drill into the data cube to easily investigate database workload. View every dimension of your data, including users, programs, SQL and sessions.

Historical lock analysis

Resolve SQL Server concurrency issues in record time with historical reviews of blocking-lock scenarios.

The lock analysis is part of the dimensional drill-down workflow, simplifying lock investigations.

Automated change tracking

Review and investigate changes to servers, instances, databases and schema, as well as application SQL degradations. Use customizable alerts to keep abreast of critical changes.

Comparison reporting

Review the symptoms of performance deviations in application environments and identify the root cause quickly and easily.

Statement-level wait-event analysis

View wait-event data down to the statement level to rapidly resolve resource-related performance problems.

Alarm workflow

Stay alerted to critical issues with out-of-the-box alarms, including baseline-deviation alarms, which provide detailed information for troubleshooting. Easily add alarms, including alarms based on your own scripts. Search for past solutions, set up blackouts, and manage and annotate your alarms.

Easy integration

Integrate your other end-to-end enterprise monitors seamlessly.

Wizard-driven installation

Add database monitoring to your existing infrastructure or configure Foglight as a standalone solution with a powerful wizard.

Unlike database-specific point solutions, Foglight for Cross-Platform Databases delivers a coherent, global view of your entire database environment and consistent, powerful functionality — no matter what combination of supported databases you're managing.

Foglight for Cross-Platform Databases is a modular solution that grows with your database environment. Simply start with the cartridges you need now, and add new ones as your environment changes.

Automatic instance discovery

Use automatic instance discovery on specific hosts to deploy Foglight capabilities rapidly and painlessly. Manually add instances as needed.

THE BROAD COVERAGE YOU NEED, WITH PLATFORM-SPECIFIC EXPERTISE BUILT IN

Foglight for Cross-Platform Databases is a modular solution that grows with your database environment. Simply start with the cartridges you need now, and add new ones as your environment grows and changes. Choose any or all of the following:

- Foglight for Oracle
- Foglight for SQL Server
- Foglight for DB2
- Foglight for Sybase
- Foglight for MySQL
- Foglight for MongoDB
- Foglight for Cassandra
- Foglight for PostgreSQL

Each cartridge includes platform-specific functionality along with built-in expertise that dramatically shortens the learning curve, so you'll be quickly able to quickly

ensure the same high performance and availability for your new databases using the same familiar tool and workflows, without having to invest time and money learning all the minutia associated with each new database technology.

Here are the cartridges currently available and some of the platform-specific additional features they provide:

Foglight for Oracle

- **SQL Performance Investigator** — Get multidimensional drill-downs and complete historical session data from this powerful analytics engine. Investigate high-traffic areas in the system and generate reports along the way. Analytics include baselines, lock and execution plan analysis, and change tracking.
- **RAC, Exadata, ASM and Data Guard monitoring** — Receive global alerts for issues detected at the cluster or instance level, plus notifications on cluster overhead and interconnect problems. Monitor failover replication and manage storage efficiently.
- **Support for virtualization** — Use in conjunction with virtualization monitoring to diagnose Oracle performance problems in virtual environments.
- **Custom performance counters** — Track and get alerts on processes tied to service levels as though they were metric counters so you can proactively handle business-critical performance issues.





- **Support for Oracle Database 12c multitenant architecture** — Easily understand the health and activity of your pluggable databases.

Foglight for SQL Server

- **SQL Performance Investigator** — Turn granular data into action with multidimensional drilldowns. Get complete historical session data, investigate high-traffic areas in the system, and generate reports on SQL Server and SQL Server Analysis Services.
- **TempDB monitoring** — Monitor TempDB performance metrics, including wait times, and view all sessions occupying TempDB. Be alerted when TempDB runs out of storage.
- **Support for SQL Server Integration Services (SSIS), SQL Server Analysis Services (SSAS) and SQL Server Reporting Services (SSRS)** — Get monitoring and analysis for the full Microsoft business intelligence (BI) stack.

Foglight for DB2

- **DB2 pureScale monitoring** — Resolve performance issues by easily navigating through diagnostics and alarm data of your pureScale environments.
- **HADR monitoring** — Monitor environments configured to use the High Availability Disaster Recovery (HADR) feature.
- **OS cluster support** — Monitor instances installed in an OS cluster environment.

Foglight for Sybase

- **Workload analysis** — Diagnose and tune top SQL, procedures, hash, users, sessions and tables.
- **Replication server monitoring** — Monitor replication activity handled by the replication server.
- **Instance resources monitoring** — Get detailed analysis of the various instance resources, including engines and spinlocks (CPU), cache activity (memory), and devices (IO).

Stop wasting your time — and risking errors — by juggling multiple tools. Foglight for Cross-Platform Databases supports Oracle, SQL Server, DB2, Sybase, MySQL, MongoDB, Cassandra and PostgreSQL.





New database platform?
No problem. Each Foglight cartridge includes platform-specific functionality along with built-in expertise that dramatically shortens the learning curve.

Foglight for MySQL

- **Workload analysis** — Drill into every dimension of your data, including users, connections, SQL and sessions. A derived workload metric tells you how much work your server is performing for comparison to other MySQL servers.
- **Query analysis and statement digests** — Understand query performance with a complete breakdown of resource consumption, wait and lock times, exceptions, and row counts. Compare the performance of similar queries across your MySQL servers and see full explain plans. Understand how workload is affected when specific statements are executed.
- **Component visualization** — Visualize the performance of critical server components and the underlying host. An interactive dashboard displays high-level server components and the flow of information between them, and alerts you when components are operating outside normal ranges.
- **Table visualization** — Visualize all tables for all your MySQL databases on a single screen, with table health and basic properties.

- **Server metrics** — Understand server performance by category. Quickly identify issues affecting server components and drill down to details for fast resolution.
- **InnoDB performance** — Track performance indicators for InnoDB so you can allocate the correct amount of memory to your buffer pool, know if queries are waiting to enter InnoDB, understand how transactions affect InnoDB performance and more.

Foglight for MongoDB

- **Connection monitoring** — Easily track the number of current connections and the associated memory requirements. Get alerts when the number of connections exceeds normal limits.
- **Memory tracking and analysis** — Review a robust set of metrics that shed light on all aspects of memory utilization, including allocated memory and resident memory. Get alerts if allocated memory is insufficient to store all indexes or is insufficient for peak performance.
- **Page fault tracking** — Receive alerts when the number of page faults is high or increasing, so you can consider increasing allocated memory.



- **Database operation analysis** — Track and analyze the load on your database with a complete set of database operation statistics, including details on replication and sharding.
- **Monitoring of profiled operations** — Get comprehensive monitoring for all profiled operations, aggregated into groups for statistical analysis. Include your own queries in the aggregation. View operation-specific information by simply selecting a row. (This feature requires system profiling to be enabled on the MongoDB server.)
- **Replica set discovery and monitoring** — Automatically discover and monitor MongoDB replica sets, including member status, health, optime date and timeouts. Get alerts if members become unreachable or their status changes, and when optimes are out of sync.
- **Shard chunk distribution monitoring** — Identify lagging in the sharding process and quickly troubleshoot the root cause, such as high lock percentages.
- **Monitoring of journaling** — Ensure MongoDB resiliency by monitoring multiple metrics about commits to the journal, as well as background flushes and total time writing the data to disk.

Foglight for Cassandra

- **Cluster overview** — Review all your Cassandra clusters from a single dashboard, including cluster structure, nodes, health status and key performance metrics. Drill down to expose details for any particular node.
- **Node overview** — See a comprehensive view of your nodes, with health, alarm, configuration and performance information sorted by category. Review granular information on any node, or compare performance across nodes in the same cluster.
- **Keyspace views** — Easily view all keyspaces in a cluster or for a selected node, or compare keyspaces across nodes. Quickly identify which objects are accessed most frequently, visualize read/write performance and diagnose latency.
- **Table views** — View tables on a cluster or a node along with aggregated performance information. Compare tables across different nodes with a single click. Get alerts when performance counters deviate from baselines. Predict when additional capacity will be required.

With Foglight, you can quickly ensure the same high performance and availability for new databases — using the same familiar tool and workflows, and without having to learn all the minutia associated with each new database technology.





With Foglight for Cross-Platform Databases to consolidate and standardize database management, you can adopt the databases that are right for your organization with full confidence that you can deliver the high performance and availability your business requires.

- **Connection monitoring** — Assess connection performance for all nodes in the cluster. Quickly identify nodes with the most dropped messages, the most large completed messages and other useful comparison metrics. Get alerts if timeouts occur or if pending tasks are creating workflow bottlenecks.
- **JVM monitoring** — Understand the performance of Cassandra's underlying JVM with easy-to-read metrics. Optimize garbage collection to avoid memory, throughput and response time problems.
- **Client request monitoring** — Know how quickly Cassandra is servicing client requests. Be alerted when client request failures occur or timeouts exceed normal rates.
- **Background Writer monitoring** — Prevent database performance problems by monitoring write delays, which can limit the amount of memory in the shared buffer pool.
- **Function analysis** — Analyze the behavior of critical PostgreSQL functions, including call rates, functions with the highest average self-time, and functions with the highest average total time.
- **Table visualization** — Quickly visualize all tables for a given database on a single screen, with table health, basic properties and calculated table-level operations. Understand whether reads from table indexes are successfully sourced from buffer cache rather than physical disk, and see the percentage of tuples returned from index versus sequential scans.

Foglight for PostgreSQL

- **Replication** — Optimize replication and ensure data integrity by monitoring all WAL senders and their connected applications, sender processes and receiver clients, and the current states of all WAL senders.
- **Query analysis** — Evaluate the performance of critical statements with a complete breakdown showing the query, number of calls, average response time and more. View, sort or search the top statements collected from the server. Visualize statements by server or database, and switch between servers without leaving the page. Compare statement performance across servers. Get explain plans for selected statements.

GET STARTED WITH FOGLIGHT TODAY

With Foglight® for Cross-Platform Databases to consolidate and standardize database management, you can adopt the databases that are right for your organization with full confidence that you can deliver the high performance and availability your business requires. We invite you to visit quest.com/products/foglight-for-cross-platform-databases to learn more, take a tour of the solution and start your free trial today.

ABOUT QUEST

At Quest, our purpose is to solve complex problems with simple solutions. We accomplish this with a philosophy focused on great products, great service and an overall goal of being simple to do business with. Our vision is to deliver technology that eliminates the need to choose between efficiency and effectiveness, which means you and your organization can spend less time on IT administration and more time on business innovation.

© 2018 Quest Software Inc. ALL RIGHTS RESERVED.

This guide contains proprietary information protected by copyright. The software described in this guide is furnished under a software license or nondisclosure agreement. This software may be used or copied only in accordance with the terms of the applicable agreement. No part of this guide may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording for any purpose other than the purchaser's personal use without the written permission of Quest Software Inc.

The information in this document is provided in connection with Quest Software products. No license, express or implied, by estoppel or otherwise, to any intellectual property right is granted by this document or in connection with the sale of Quest Software products. EXCEPT AS SET FORTH IN THE TERMS AND CONDITIONS AS SPECIFIED IN THE LICENSE AGREEMENT FOR THIS PRODUCT, QUEST SOFTWARE ASSUMES NO LIABILITY WHATSOEVER AND DISCLAIMS ANY EXPRESS, IMPLIED OR STATUTORY WARRANTY RELATING TO ITS PRODUCTS INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT SHALL QUEST SOFTWARE BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE, SPECIAL OR INCIDENTAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF PROFITS, BUSINESS INTERRUPTION OR LOSS OF INFORMATION) ARISING OUT OF THE USE OR INABILITY TO USE THIS DOCUMENT, EVEN IF QUEST SOFTWARE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Quest Software makes no representations or warranties with respect to the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Quest Software does not make any commitment to update the information contained in this document.

Patents

Quest Software is proud of our advanced technology. Patents and pending patents may apply to this product. For the most current information about applicable patents for this product, please visit our website at www.quest.com/legal

Trademarks

Quest, Foglight and the Quest logo are trademarks and registered trademarks of Quest Software Inc. For a complete list of Quest marks, visit www.quest.com/legal/trademark-information.aspx. All other trademarks are property of their respective owners.

If you have any questions regarding your potential use of this material, contact:

Quest Software Inc.

Attn: LEGAL Dept
4 Polaris Way
Aliso Viejo, CA 92656

Refer to our website (www.quest.com) for regional and international office information.