

Foglight® *for DB2 LUW* 5.9.2.1
Hardware Sizing Guide



© 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.

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.




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, the Quest logo, Foglight, and Join the Innovation are trademarks and registered trademarks of Quest Software Inc. in the U.S.A. and other countries. For a complete list of Quest Software trademarks, please visit our website at www.quest.com/legal. Red Hat, JBoss, the JBoss logo, and Red Hat Enterprise Linux are registered trademarks of Red Hat, Inc. in the U.S. and other countries. CentOS is a trademark of Red Hat, Inc. in the U.S. and other countries. Fedora and the Infinity design logo are trademarks of Red Hat, Inc. Microsoft, .NET, Active Directory, Internet Explorer, Hyper-V, Office 365, SharePoint, Silverlight, SQL Server, Visual Basic, Windows, Windows Vista and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. AIX, IBM, PowerPC, PowerVM, and WebSphere are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Java, Oracle, Oracle Solaris, PeopleSoft, Siebel, Sun, WebLogic, and ZFS are trademarks or registered trademarks of Oracle and/or its affiliates in the United States and other countries. SPARC is a registered trademark of SPARC International, Inc. in the United States and other countries. Products bearing the SPARC trademarks are based on an architecture developed by Oracle Corporation. OpenLDAP is a registered trademark of the OpenLDAP Foundation. HP is a registered trademark that belongs to Hewlett-Packard Development Company, L.P. Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both. MySQL is a registered trademark of MySQL AB in the United States, the European Union and other countries. Novell and eDirectory are registered trademarks of Novell, Inc., in the United States and other countries. VMware, ESX, ESXi, vSphere, vCenter, vMotion, and vCloud Director are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions. Sybase is a registered trademark of Sybase, Inc. The X Window System and UNIX are registered trademarks of The Open Group. Mozilla and Firefox are registered trademarks of the Mozilla Foundation. IOS is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries. Apple, iPad, iPhone, Mac OS, Safari, Swift, and Xcode are trademarks of Apple Inc., registered in the U.S. and other countries. Ubuntu is a registered trademark of Canonical Ltd. Symantec and Veritas are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries. OpenSUSE, SUSE, and YAST are registered trademarks of SUSE LCC in the United States and other countries. Citrix, AppFlow, NetScaler, XenApp, and XenDesktop are trademarks of Citrix Systems, Inc. and/or one or more of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries. PostgreSQL is a registered trademark of the PostgreSQL Global Development Group. MariaDB is a trademark or registered trademark of MariaDB Corporation Ab in the European Union and United States of America and/or other countries. Intel, Itanium, Pentium, and Xeon are trademarks of Intel Corporation in the U.S. and/or other countries. Debian is a registered trademark of Software in the Public Interest, Inc. OpenStack is a trademark of the OpenStack Foundation. All other marks and names mentioned herein may be trademarks of their respective companies.

Legend

-  **WARNING:** A WARNING icon indicates a potential for property damage, personal injury, or death.
-  **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.
-  **IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

Contents

| | |
|---|----------|
| Recommended Hardware Settings for Running Foglight for DB2 LUW | 4 |
| Parameters Used for Hardware Sizing | 4 |
| Determining Requirements | 5 |
| Determining the Size of the Monitored Environment | 5 |
| Number of Foglight for DB2 LUW Agents Per Agent Manager | 5 |
| Number of Foglight for DB2 LUW Agents Per Management Server | 6 |
| Number of Files Opened on the Agent Manager Server | 6 |
| About us | 8 |
| We are more than just a name | 8 |
| Our brand, our vision. Together. | 8 |
| Contacting Quest | 8 |
| Technical support resources | 8 |

Recommended Hardware Settings for Running Foglight for DB2 LUW

The *Monitoring DB2 LUW Database Systems: Hardware Sizing Guide* is intended to assist in determining the optimal hardware requirements and product configurations to ensure the best possible user experience.

This guide provides the minimal hardware settings required for the proper functioning of the Management Server (FMS) with Foglight for DB2 LUW operation platform, when monitoring a predefined number of instances, databases, and partitions.

The guide is intended for users who want to customize Foglight for DB2 LUW's default settings for sampling and collecting data, to suit specific requirements.

i | NOTE: The document provides requirements for 32-bit and 64-bit environments.

Parameters Used for Hardware Sizing

When sizing hardware, the following considerations should be taken into account:

- The maximum number of agents (that is, instances) that a single Management Server can accommodate in version 5.5.8 and later is 400.
- The ratio between Foglight for DB2 LUW agents and units in the Foglight unit system depends on the version of the Management Server as follows:
 - Management Server 5.6.10 and later — see [Number of Foglight for DB2 LUW Agents Per Management Server](#) on page 6.
 - Management Server 5.6.2 up to 5.6.7.x — each agent represents 10 units
 - Management Server 5.5.8 up to 5.6.0 — each agent represents 6 units
- In [Number of Foglight for DB2 LUW Agents Per Management Server](#) on page 6, the number of agents depends on the amount of memory available to the Management Server. Memory size is set in the following file:
 - Management Server 5.6.2 and later —
File location: ...*Quest_Software\Foglight\config\server.config*
Property name: `server.vm.option1`
 - Management Server version 5.5.8 and earlier —
File location: ...*Quest_Software\Foglight\config\foglight.config*
Property name: `foglight.vm.option1`
- In [Number of Foglight for DB2 LUW Agents Per Agent Manager](#) on page 5, the number of agents depends on the amount of memory available to the Agent Manager. Memory size is set in the following file:
 - Agent Manager 5.6.10 and later —
File location: ...*Quest_Software\Foglight\FglAM\state\default\baseline.jvmargs*
 - Agent Manager versions earlier than 5.6.10 —
File location: ...*Quest_Software\Foglight\FglAM\state\default\config\vm.config*

Determining Requirements

First assess the size of the environment to be monitored. Then use the size of the monitored environment to identify how many Foglight for DB2 LUW agents can be hosted on an Agent Manager and a Management Server.

Determining the Size of the Monitored Environment

Environments are categorized into small, medium, and large based on the concurrent SQLs load on instances, databases, and members. To find out the number of concurrent SQLs, run the following SQL statement:

```
select
dbpartitionnum, sum(total) as total_agents,
sum(active) as active
from
(
select
dbpartitionnum,
sum(num_assoc_agents) as total,
sum(case when appl_status not in ('CONNECTED','DECOUPLED','UOWWAIT') then
num_assoc_agents else 0 end) as active
from
TABLE(SNAP_GET_APPL_INFO(CAST(current server AS VARCHAR(128)),CAST(-2 AS INT))) AS T
group by dbpartitionnum
) as agents
group by dbpartitionnum
```

| Environment Size | Concurrent SQL statements |
|------------------|---------------------------|
| Small | 500 |
| Medium | 5,000 |
| Large | > 20,000 |

Now you can determine the number of Agent Managers and Management Servers you require.

Number of Foglight for DB2 LUW Agents Per Agent Manager

The number of agents that can be hosted on an Agent Manager depends on the size of the environment and the amount of memory allocated on an Agent Manager. Instances, databases, and members each count toward the number of agents. For example, one instance with two databases and two members counts as five agents (1+2+2=5). If you require more agents than can be supported by one Agent Manager, add additional Agent Managers.

| Environment Size | Number of agents | |
|------------------|---------------------------------|-------------------------------|
| | Agent Manager with 256MB memory | Agent Manager with 1GB memory |
| Small | 25 | 90 |
| Medium | 10 | 70 |
| Large | 5 | 40 |

Number of Foglight for DB2 LUW Agents Per Management Server

The number of agents that can be hosted on a Management Server depends on the size of the environment and the amount of memory allocated for the Management Server. If you require more agents than can be supported by one Management Server, add additional Management Servers.

| Environment Size | Number of agents | |
|------------------|--|-----------------------------------|
| | Management Server with 4GB memory ¹ | Management Server with 8GB memory |
| Small | 250 | 500 |
| Medium | 200 | 400 |
| Large | 150 | 250 |

¹1.4GB is the default memory allocation.

Note Use the Foglight for DB2 LUW installer to ensure that the default Repository type is set to Oracle/SQL Server.

Number of Files Opened on the Agent Manager Server

While monitoring DB2 instances, Foglight for DB2 LUW agents pass file descriptors to the kernel on the Agent Manager server to request that files be opened. For your reference, the following table states the number of files that are open while monitoring one DB2 instance. The numbers vary based on the operating systems used to host the Agent Manager and to host the DB2 instance. The last column shows how many files are opened when agents are added to monitor additional DB2 instances.

| OS Hosting Agent Manager | OS Hosting DB2 Instance | DB | OS | IC | Total | Files per Agent Added |
|--------------------------|-------------------------|-----|----|----|-------|-----------------------|
| UNIX/Linux | UNIX/Linux | 232 | 2 | 1 | 235 | ~6 |
| | Windows | 203 | 0 | 1 | 204 | ~8 |
| Windows | UNIX/Linux | 320 | 11 | 1 | 332 | ~25 |
| | Windows | 161 | 0 | 1 | 162 | ~2 |

Abbreviations used in the table:

- **DB** = DB2 Database Instance

- **OS** = Operating System
- **IC** = Infrastructure Cartridge

We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation™.

Our brand, our vision. Together.

Our logo reflects our story: innovation, community and support. An important part of this story begins with the letter Q. It is a perfect circle, representing our commitment to technological precision and strength. The space in the Q itself symbolizes our need to add the missing piece—you—to the community, to the new Quest.

Contacting Quest

For sales or other inquiries, visit <https://www.quest.com/company/contact-us.aspx/>.

Technical support resources

Technical support is available to Quest customers with a valid maintenance contract and customers who have trial versions. You can access the Quest Support Portal at <https://support.quest.com>.

The Support Portal provides self-help tools you can use to solve problems quickly and independently, 24 hours a day, 365 days a year. The Support Portal enables you to:

- Submit and manage a Service Request.
- View Knowledge Base articles.
- Sign up for product notifications.
- Download software and technical documentation.
- View how-to-videos.
- Engage in community discussions.
- Chat with support engineers online.
- View services to assist you with your product.