IBM Spectrum Accelerate Family HyperSwap Quorum Witness

Version 1.0.0

Release Notes

First Edition (May 2017)

This document edition applies to version 1.0.0 of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness software package. Newer document editions may be issued for the same version in order to add missing information, update information, or amend typographical errors. The edition is reset to "First Edition" for every newly released version.

Contents

Overview

The IBM Spectrum Accelerate™ Family HyperSwap® Quorum Witness is a software component that facilitates coordination between two storage systems in high-availability IBM HyperSwap solutions.

The IBM Spectrum Accelerate™ Family HyperSwap® Quorum Witness is a software utility that coordinates between any two IBM FlashSystem A9000 or A9000R storage systems that use HyperSwap relations. The Quorum Witness component is part of any high-availability or clustering solution, with its primary purpose to protect against split-brain situations upon failover. To achieve this, the IBM Spectrum Accelerate™ Family HyperSwap® Quorum Witness:

- Monitors the replication between the storage systems.
- Tracks connectivity between itself and the storage systems.
- Verifies that the storage systems have the same Quorum Witness configuration.
- Registers the heartbeat information that the storage systems send to it.
- Responds to the storage systems HyperSwap queries.

For more information about the deployment and usage of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness, refer to the following publications:

- IBM Spectrum Accelerate Family HyperSwap Quorum Witness user guide.
- IBM FlashSystem® A9000 and A9000R product overview.
- IBM FlashSystem A9000 and A9000R CLI reference guide.
- IBM Hyper-Scale Manager user guide.

These documents are available on IBM® Knowledge Center (ibm.com®/support/knowledgecenter).

Release scope and highlights

This is the first release of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness.

Version: 1.0.0

General availability date: 9 June 2017

Compatibility and requirements

The IBM Spectrum Accelerate Family HyperSwap Quorum Witness is compatible with different versions of the Linux operating system and the storage systems.

Certain software packages, patches, or drivers must be installed on the host, as detailed in the following subsections.

Supported Linux versions

Version 1.0.0 of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness supports different Linux versions and editions, as listed in the following table.

Operating system	Architecture
Red Hat Enterprise Linux (RHEL) 6.8, 7.3	x86, x64
CentOS Linux 6.8, 7.3	x86, x64

Supported storage systems

Version 1.0.0 of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness supports IBM FlashSystem A9000 and A9000R with microcode version 12.1.

Note: Newer microcode versions may also be compatible. When a newer microcode version becomes available, refer to the latest storage system release notes to check whether the new microcode version is also supported.

Host requirements

The QW requires a physical or virtual (guest) server host. The host must meet the following minimum requirements.

- 64-bit dual-core CPU
- 4 GB of RAM
- Hard or solid-state drive:
  - SAS/SATA interface
  - 7200 RPM speed (hard disk drive only)
  - RAID protection
  - 40 GB of free space
- End-to-end network connectivity:
  - Connectivity between all grid controller management ports and the Quorum Witness
  - Bandwidth – 6 Mbps multiplied by the number of registered storage systems
  - Latency – 0.75 seconds
  - Packet loss – 0.1%

Note:

- For best performance, 99.999% (five-nines) network availability is recommended for all elements of HyperSwap solution. This includes the storage systems and the Quorum Witness host.
- To decrease packet loss and latency on the network, use assured forwarding (AF) packet tagging.
- To achieve high availability of the Quorum Witness, it must be installed on a fault-tolerant virtual machine. Refer to the relevant VMware documentation for details on vSphere Fault Tolerance (FT) solution.

Limitations

As opposed to known issues, limitations are functionality restrictions that are part of the predefined system design and capabilities in a particular version.

Operational capacity

Quorum Witness-related capacity of the IBM HyperSwap solution:

- Maximum number of registered storage systems per Quorum Witness – 12.
- Maximum number of Quorum Witnesses defined on a storage system – 2 (one active and one standby).

Check for newer release note publications to learn about limitations that could be discovered and advertised in the future.

Known issues

This section details the known issues in version 1.0.0 of the IBM Spectrum Accelerate Family HyperSwap Quorum Witness, along with possible solutions or workarounds (if available).

The following severity levels apply to known issues:

- **HIPER** – High Impact Pervasive. A critical issue that IBM has either fixed or plans to fix promptly. Requires immediate customer attention or code upgrade.
- **High Impact** – Potentially irrecoverable error that might impact data or access to data in rare cases or specific situations/configurations.
- **Moderate** – Limited functionality issue and/or performance issue with a noticeable effect.
- **Service** – Non-disruptive recoverable error that can be resolved through a workaround.
- **Low** – Low-impact usability-related issue.

Currently there are no known issues for IBM Spectrum Accelerate Family HyperSwap Quorum Witness version 1.0.0.

Related information and publications

You can find additional information and publications related to the IBM Spectrum Accelerate Family HyperSwap Quorum Witness on the following websites.

- IBM Knowledge Center (ibm.com/support/knowledgecenter)
- IBM FlashSystem A9000 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKMM)
- IBM FlashSystem A9000R on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKN5)

Getting information, help, and service

If you need help, service, technical assistance, or want more information about IBM products, you can find various sources to assist you. You can view the following websites to get information about IBM products and services and to find the latest technical information and support.

- IBM website (ibm.com)
- IBM Support Portal website (ibm.com/support/entry/portal/support?brandind=Hardware~System_Storage)
- IBM Directory of Worldwide Contacts website (ibm.com/planetwide)

Use the Directory of Worldwide Contacts to find the appropriate phone number for initiating voice call support. Select the Software option, when using voice response system.

When asked, provide your Internal Customer Number (ICN) and/or the serial number of the storage system that requires support. Your call will then be routed to the relevant support team, to whom you can provide the specifics of your problem.

Notices

These legal notices pertain to the information in this IBM Storage product documentation.

This information was developed for products and services offered in the US. This material may be available from IBM in other languages. However, you may be required to own a copy of the product or product version in that language in order to access it.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
USA

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan Ltd.
19-21, Nihonbashi-Hakozakicho, Chuo-ku
Tokyo 103-8510, Japan

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Director of Licensing
IBM Corporation
North Castle Drive, MD-NC119
Armonk, NY 10504-1785
USA

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

The performance data discussed herein is presented as derived under specific operating conditions. Actual results may vary.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Copyright and trademark information website (www.ibm.com/legal/us/en/copytrade.shtml).

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Veritas is a trademark or registered trademark of Symantec Corporation in the United States and other countries.

Other product and service names might be trademarks of IBM or other companies.

Printed in USA