

IBM Storage Host Attachment Kit for AIX
Version 2.9.0

Release Notes



Second Edition (March 2018)

This edition applies to version 2.9.0 of the IBM Storage Host Attachment Kit for AIX 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.

© **Copyright IBM Corporation 2009, 2018.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Overview	1
What's new in version 2.9.0	1
Compatibility and requirements	1
Supported AIX versions	1
Supported storage systems	2
Supported HBAs	2
Supported multipath I/O solutions	3
Required software on the host	3
Change log	3
Version 2.9.0 (March 2018)	3
Version 2.8.0 (June 2017)	4
Version 2.7.0 (December 2016)	4
Version 2.6.0 (April 2016)	4
Version 2.5.0 (September 2015)	5
Version 2.4.0 (March 2015)	5
Version 2.3.0 (August 2014)	5
Known issues	6
Related information and publications	9
Getting information, help, and service	9
Notices	11
Trademarks	12

Overview

The IBM® Storage Host Attachment Kit (HAK) for AIX® is a software pack that simplifies the task of connecting an IBM AIX host to the IBM storage systems.

The HAK provides a set of command-line interface (CLI) tools that help host administrators perform different host-side tasks, such as: detect any physically connected storage system (single system or multiple systems), detect storage volumes, define the host on the storage system, run diagnostics, and apply best practice native multipath connectivity configuration on the host.

You can download the IBM Storage Host Attachment Kit software package at any time from the IBM Fix Central website (www.ibm.com/support/fixcentral).

What's new in version 2.9.0

Version 2.9.0 is minor release, resolving miscellaneous issues.

General availability date: 14 March 2018

For more information about the fixes in version 2.9.0, see “Change log” on page 3.

Compatibility and requirements

The IBM Storage Host Attachment Kit for AIX is compatible with different versions of the AIX operating system and the IBM storage systems, as well as with different HBAs and multipath solutions.

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

Note: This section applies to version 2.9.0. For information about the compatibility and requirements of a previous Host Attachment Kit version, refer to its relevant release notes. In addition, the HAK lifecycle and support matrix (ibm.com/support/knowledgecenter/SSEPRF/landing/css_lifecycle_support_matrix_hak.html) details the HAK lifecycle with compatible storage system microcode versions and supported operating system releases.

Supported AIX versions

Version 2.9.0 of the IBM Storage Host Attachment Kit for AIX is compatible with the following AIX versions and editions. All listed AIX releases support IBM HyperSwap solution.

Operating system	Edition	Architecture	Compatibility note
AIX 6.1	TL00, TL01, TL02, TL03, TL04, TL05, TL06, TL07, TL08, TL09	IBM System p, IBM Power Systems™	<ul style="list-style-type: none"> • TL04 requires one of the following: <ul style="list-style-type: none"> – Provided eFix* – Service Pack 2 • The latest AIX service packs resolve all limited functionality issues. For more information, see HA-101673 and HA-261107 in “Known issues” on page 6.
AIX 7.1	TL00, TL01, TL02, TL03, TL04	IBM System p, IBM Power Systems	<ul style="list-style-type: none"> • The latest AIX service packs resolve all limited functionality issues. For more information, see HA-101673 and HA-261107 in “Known issues” on page 6.
AIX 7.2	TL00, TL01	IBM System p, IBM Power Systems	
<p>* You can download all AIX eFixes from the following FTP address: ftp://ftp.software.ibm.com/aix/efixes</p>			

Note: AIX 5.1 is no longer supported.

Supported storage systems

Version 2.9.0 of the IBM Storage Host Attachment Kit for AIX supports different microcode versions of the storage systems, as listed in the following table.

Storage system	Microcode version
IBM XIV® Storage System	11.1.x, 11.2.x, 11.3.x, 11.4.x, 11.5.x, 11.6.x
IBM FlashSystem® A9000	12.0.x, 12.1.x, 12.2.x
IBM FlashSystem A9000R	12.0.x, 12.1.x, 12.2.x

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. In addition, the HAK lifecycle and support matrix (ibm.com/support/knowledgecenter/SSEPRF/landing/css_lifecycle_support_matrix_hak.html) details the HAK lifecycle with compatible storage system microcode versions and supported operating system releases.

Supported HBAs

The IBM Storage Host Attachment Kit for AIX supports different host bus adapter (HBA) brands and types.

For the latest support information and compatibility matrix, refer to the IBM System Storage® Interoperation Center website (ibm.com/systems/support/storage/config/ssic).

Note: For best performance, install the latest firmware and drivers for the HBAs that are in use. The HBA vendor should provide the latest firmware and drivers.

Attention: The IBM Storage Host Attachment Kit for AIX does not support iSCSI connectivity. Only Fibre Channel (FC) is supported.

Supported multipath I/O solutions

The IBM Storage Host Attachment Kit for AIX supports the following multipath solutions:

- Native multipath I/O (MPIO)
- IBM Virtual I/O Server (VIOS)
- Veritas Dynamic Multipathing (DMP)

For the details of the supported versions, refer to the IBM System Storage Interoperation Center.

Important: Using more than one multipath I/O framework on the same host is not supported.

Required software on the host

Prior to installing the IBM Storage Host Attachment Kit for AIX, the `bos.adt.libm` package must be installed on the host.

For more information, refer to the IBM Fileset information website (ibm.com/support/docview.wss?uid=isg1fileset-1318926131).

Change log

This section summarizes the changes made in different version releases of the IBM Storage Host Attachment Kit for AIX.

Version 2.9.0 (March 2018)

Version 2.9.0 resolves the following issues.

Ticket ID	Description
HA-262045*	Fixed: When a volume is moved to another storage system, using IBM Hyper-Scale Mobility technology, the <code>dev_list</code> command output fails to display the correct serial number of the target storage system.
HA-262054*	Fixed: When a highly-available volume, residing on a primary storage system in HyperSwap, is unmapped from the host, the <code>xiv_devlist</code> command output displays secondary storage, as the current storage system.

* Applies to all supported operating systems.

Version 2.8.0 (June 2017)

Version 2.8.0 added integration with IBM HyperSwap solution, as introduced by the FlashSystem A9000 and A9000R storage systems (version 12.1). Additional changes in version 2.8.0:

Ticket ID	Description
HA-261979*	Enhancement: The xiv_devlist command output indicates the HyperSwap mode of the volume (stretched or regular).
HA-261987*	Enhancement: The xiv_devlist command output displays the name of the remote storage system in the IBM HyperSwap solution.
HA-261965*	Fixed: The xiv_host_profiler command with the --set-password and --storage arguments fails due to discrepancy between the --storage value and the system serial number of the storage system itself. This update requires resetting the current password.

* Applies to all supported operating systems.

Version 2.7.0 (December 2016)

Version 2.7.0 improved security by adding ability to set passwords for hosts, accessing storage systems. Additional change in version 2.7.0:

Ticket ID	Description
HA-62994*	Fixed: The xiv_devlist command output displays the current HAK version with uppercase -V .

* Applies to all supported operating systems.

Version 2.6.0 (April 2016)

Version 2.6.0 added support for IBM FlashSystem A9000 and IBM FlashSystem A9000R storage systems with microcode 12.0. Additional changes in version 2.6.0:

Ticket ID	Description
HA-261809*	Change: The xiv_syslist command output displays all supported storage system types.
HA-261811*	Change: The xiv_devlist command output displays all supported storage system types.
HA-261816*	Fixed: When running the xiv_attach command, scanning for FC-connected storage systems is performed, even if the user chooses not to complete it.
HA-261859*	Fixed: A general exception may occur during the xiv_fc_admin or xiv_attach command execution.
HA-261869*	Fixed: If during new iSCSI target discovery an IP address is unreachable on a single storage systems, the error message appears for all connected devices.

* Applies to all supported operating systems.

Version 2.5.0 (September 2015)

Version 2.5.0 added support for XIV microcode version 11.6.x. Additional change in version 2.5.0:

Ticket ID	Description
HA-261629*	Change: The -L option of the xiv_fc_admin command is deprecated. Only the xiv_syslist -L command can be used for listing the attached storage systems, as detailed in HA-204578. For more information, refer to the user guide.

* Applies to all supported operating systems.

Version 2.4.0 (March 2015)

Version 2.4.0 added support for XIV microcode version 11.5.1.

Version 2.3.0 (August 2014)

Version 2.3.0 added support for XIV microcode version 11.5 and includes the following enhancements and fixes.

Ticket ID	Description
HA-250756*	Enhancement: The --list (-L) command option can be used with xiv_diag to display information that is to be gathered by the utility. For more information, refer to the user guide.
HA-261277	Enhancement: The --clean command option can be used with xiv_fc_admin --rescan to remove unreachable devices from the host. For more information, refer to the user guide.
HA-261361*	Enhancement: Added support for the XIV multi-tenancy feature, allowing work with different and separate storage domains that are defined on the same XIV storage system. This enhancement applies only to XIV microcode version 11.5 or later. For more information, refer to the user guide.
HA-261223*	Fixed: A general error message appears when running xiv_attach , xiv_fc_admin , or xiv_iscsi_admin if non-English characters are used in the XIV credentials.

* Applies to all supported operating systems.

Known issues

This section details the known issues in version 2.9.0 of the IBM Storage Host Attachment Kit for AIX, along with possible solutions or workarounds (if available).

Ticket ID	Description
HA-17383	<p>AIX with native XIV ODM does not support SCSI-persistent reservations. Upgrading to a release of AIX that has native ODM results in SCSI reservation problems in clusters.</p> <p>To resolve this issue, add the correct ODM entries into the native AIX ODM.</p> <p>For AIX 6.1, AIX 7.1, and VIOS users, to completely resolve this issue, install the latest AIX service pack that matches your HAK-supported AIX version and TL. You can obtain the latest service pack from the IBM Fix Central website (ibm.com/support/fixcentral).</p>
HA-19873	<p>When using xiv_devlist, a volume that is reserved by another host appears as an unreachable device.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-28242	<p>The cfgmgr and rescan options may display a message stating that the <code>devices.fcp</code> array package is not found.</p> <p>If you receive this message, map the LUN0 volume and then retry the command. Return to the working volumes afterwards.</p>
HA-100800	<p>Mapping the LUN0 volume causes errors.</p> <p>Due to the distinctive properties of the XIV LUN0 volume (on any storage pool), mapping it to the host causes numerous errors or performance problems.</p> <p>Accordingly, mapping the LUN0 volume is not supported.</p>
HA-101034	<p>After a volume is remapped to a different logical unit number (LUN), xiv_devlist erroneously displays double the amount of available paths for the volume.</p> <p>Currently there is no workaround or solution for this limitation.</p>

Ticket ID	Description
HA-101673	<p>Non-updated AIX versions do not recognize the LUN0 controller on the XIV storage system, resulting in the following functionality limitations:</p> <ul style="list-style-type: none"> • xiv_attach configures the host locally, without defining the host on the XIV storage system. • xiv_syslist -L returns an empty list. • xiv_syslist returns the message: No LUN0 XIV devices were detected. <p>To completely resolve this issue, install the latest AIX service pack that matches your HAK-supported AIX version and TL.</p> <p>You can obtain the latest service pack from the IBM Fix Central website(ibm.com/support/fixcentral).</p>
HA-209680	<p>When using the Veritas multipathing framework, xiv_devlist displays the native device names of newly mapped volumes.</p> <p>To resolve this issue, run the Veritas device rescan command: vxdctl enable</p>
HA-230326	<p>If the OS boots from SAN and volumes are mapped to the host, running xiv_devlist after an FC target (WWPN) or its initiator is removed from the FC zoning causes the host to hang.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-247046	<p>On AIX 7.1, the HAK installation takes more than 2 minutes to complete.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-255321	<p>After running xiv_fc_admin -R or xiv_iscsi_admin -R, LUN0 devices that are no longer connected to the host still appear registered in the operating system.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-261107	<p>The AIX operating system might hang due to incorrect SCSI information.</p> <p>Workaround: To avoid this problem, make sure that the APAR is installed according to the AIX operating system version.</p> <p>AIX 7.1 TL1 - IZ99643 AIX 7.1 - IV06055 AIX 6.1 TL7 - IZ99455 AIX 6.1 TL6 - IV04977 AIX 6.1 TL5 - IV05271 AIX 6.1 TL4 - IV05645</p> <p>For more information about APAR, see the APAR Explained technote page (ibm.com/support/docview.wss?uid=swg21424131).</p>

Ticket ID	Description
HA-261134	<p>Upgrading to a minor HAK version (for example, 2.x.x.x), the installation fails silently without any indication.</p> <p>To avoid this problem, uninstall the existing version before installing the minor version.</p>
HA-261175	<p>In some cases, the Host Profiler report displays detected HBA models in a format that is different than the format used in the IBM System Storage Interoperation Center (SSIC) website (ibm.com/systems/support/storage/config/ssic). This may result in incorrect host analysis results.</p> <p>In such a case, consult with an IBM Support representative regarding the erroneous host analysis.</p> <p>Currently there is no workaround or solution for this issue.</p>
HA-261643	<p>On AIX host in NPIV/Pureflex environment , xiv_host_profiler may cause temporary network disruption.</p> <p>To avoid this issue, update the Pureflex switch firmware to version v7.3.1b and higher. If the Pureflex firmware cannot be upgraded, refrain from running the xiv_host_profiler command either manually or by defining a Linux cron job.</p>
HA-261676	<p>On AIX 7.1, running the xiv_devlist command after renaming mapped volumes may result in an exception.</p> <p>To avoid this issue, keep original volume names.</p>
HA-261763	<p>On AIX 6.1, running the xiv_devlist command after performing the Hyper-Scale Mobility procedure may result in an exception.</p> <p>To resolve this issue, run the rmdev -d1 hdisk<unreachable_mpio_device> to remove an unreachable MPIO device.</p>
HA-261930	<p>When running the xiv_devlist command on volumes during the Hyper-Scale Mobility process, the storage system serial number indicates either a source or a destination system. This may be confusing, when this command is used several times in a row, and each time a different storage system serial number is displayed.</p> <p>To resolve this issue, use XIV GUI or Hyper-Scale Manger to determine the Hyper-Scale Mobility state and correct serial numbers of the storage systems.</p>
HA-262147	<p>HyperSwap mode of the volumes, which are in the Proxy state during Hyper-Scale Mobility migration, appears as Yes in the xiv_devlist output.</p> <p>Currently there is no workaround or solution for this limitation.</p>

Related information and publications

You can find additional information and publications related to the IBM Storage Host Attachment Kit for AIX on the following websites.

- IBM Knowledge Center (ibm.com/support/knowledgecenter)
- IBM XIV Storage System on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJTAG)
- IBM FlashSystem A9000 on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKMM)
- IBM FlashSystem A9000R on IBM Knowledge Center (ibm.com/support/knowledgecenter/STJKN5)
- IBM Power Systems software website for AIX (www.ibm.com/systems/power/software/aix)
- IBM System p website (www.ibm.com/systems/p)

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, ibm.com, AIX, and the AIX logo 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).

UNIX is a registered trademark of The Open Group in the United States and other countries.

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