IBM XIV Host Attachment Kit for Solaris
Version 2.0.0

Release Notes

First Edition (March 2013)

This document edition applies to version 2.0.0 of the IBM XIV Host Attachment Kit for Solaris software package. Newer document editions may be issued for the same product version in order to add missing information or amend typographical errors. The edition is reset to 'First Edition' for every new product version.

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Overview

The IBM® XIV® Host Attachment Kit (HAK) for Solaris is a software pack that simplifies the task of connecting an Oracle Solaris host to the IBM XIV Storage System.

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 XIV storage system (single system or multiple systems), detect XIV volumes, define the host on the XIV storage system, run diagnostics, and apply best practice native multipath connectivity configuration on the host.

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

Compatibility and requirements

The IBM XIV Host Attachment Kit for Solaris is compatible with different versions of the Solaris operating system and the XIV storage system, 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 2.0.0. For information about the compatibility and requirements of a previous Host Attachment Kit version, refer to its relevant release notes.

Supported Solaris versions

The IBM XIV Host Attachment Kit for Solaris supports different Solaris versions or editions, as listed in the following table.

Operating system	Architecture	Compatibility note
Oracle Solaris 10	x64, SPARC	Requires Update 4 or later
Oracle Solaris 11	x64, SPARC	N/A

Supported XIV storage systems

The IBM XIV Host Attachment Kit for Solaris supports different microcode versions of the IBM XIV Storage System, as listed in the following table.

Storage system	Microcode version
IBM XIV Storage System	10.2.x
	11.0.x, 11.1.x, 11.2.0

Note: Newer microcode versions may also be compatible. Refer to the latest XIV storage system release notes when a new XIV microcode version becomes available. You can obtain the latest XIV storage system release notes on the IBM XIV Storage System Information Center (publib.boulder.ibm.com/infocenter/ibmxiv/r2).

Supported HBAs

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

For the latest support information and compatibility matrix, see the IBM System Storage® Interoperation Center website (www.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.

Supported multipath I/O solutions

The IBM XIV Host Attachment Kit for Solaris supports the following multipath solutions:

- Native multipath I/O (MPIO)
- Veritas Dynamic Multipathing (DMP) 5.0 or 5.1 (including native support for XIV in Veritas Storage Foundation 5.1)

Important: For proper Active/Active multipathing using Veritas Dynamic Multipathing 5.0, install the Symantec Array Support Library for IBM XIV, which can be downloaded from the Symantec website (www.symantec.com/business/support/index?page=content&id=TECH77828).

Change log

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

Version 2.0.0 (March 2013)

Version 2.0.0 includes the following enhancements.

Ticket ID	Description
HA-26055*	**Enhancement**: A new host diagnostics utility, Host Profiler (**`xiv_host_profiler`**), is now available. The utility collects comprehensive host configuration information, creates a profile based on this information, and allows detailed analysis of the collected information. For more information, refer to the Diagnostics chapter in the IBM XIV Host Attachment Guide.
HA-251470	**Enhancement**: Reduced HAK package size, requiring less disk space.

* Applies to all supported operating systems.

Version 1.10.0 (September 2012)

Version 1.10.0 included the following fixes.

Ticket ID	Description
HA-201899	**Fixed**: **xiv_attach** fails over iSCSI when the target iSCSI port is down, and the following error is displayed: `Error getting targets for discovery address: <ip address>: Command failed: iscsiadm list discovery-address -v <ip address>`
HA-236858*	**Fixed**: **xiv_devlist** does not display the correct size of volumes that are larger than 2.2 TB.

* Applies to all supported operating systems.

Version 1.9.0 (June 2012)

Version 1.9.0 added support for Oracle Solaris 11, and included the following enhancements and fixes.

Ticket ID	Description

HA-10663	**Enhancement**: Detailed on-screen help prompt is now available for the different HAK utilities using the **man** command option in the following format:
	`man xiv_attach`
	`man xiv_fc_admin`
	`man xiv_iscsi_admin`
	`man xiv_syslist`
	`man xiv_devlist`
	`man xiv_diag`

HA-73943*	**Enhancement**: The **--path** optional argument is now available for the **xiv_diag** command, allowing one-step definition of the directory into which the report file should be generated. For more information, refer to the user guide.
HA-223490	**Fixed:** When no volumes are mapped to the host, some **module:port** FC targets are missing from the **xiv_syslist** report.
HA-233433*	**Fixed:** In some cases, **xiv_syslist** may fail with a general error prompt (ValueError exception).

* Applies to all supported operating systems.

Version 1.8.0 (March 2012)

Version 1.8.0 included the following enhancements and fixes.

Ticket ID	Description
HA-179589*	**Enhancement**: A new utility, **xiv_syslist**, has been added to the IBM XIV Host Attachment Kit in order to provide broader and more customized information than the output of the **xiv_fc_admin -L** and **xiv_iscsi_admin -L** commands. Using the **xiv_syslist** command and its optional arguments, users can view different details of all XIV storage systems that are connected to the host. For more information, refer to the IBM XIV Host Attachment Guide.
HA-172254	**Fixed**: In some cases, **xiv_devlist -o** returns an exception.

* Applies to all supported operating systems.

Version 1.7.1 (December 2011)

Version 1.7.1 included the following fixes.

Ticket ID	Description
HA-163382*	**Fixed**: An exception occurs when trying to define the host on the XIV storage system with incorrect XIV credentials.
HA-167347	**Fixed**: **xiv_attach** fails to detect an already configured host and performs a redundant reconfiguration.
HA-171097	**Fixed**: Running **xiv_iscsi_admin --list** on a Japanese Solaris locale triggers a Unicode encoding error.

* Applies to all supported operating systems.

Version 1.7.0 (September 2011)

Version 1.7.0 added support for the XIV Gen3 hardware configuration and for version 11.0 of the IBM XIV microcode.

In addition, version 1.7.0 included the following enhancements and changes:

Ticket ID	Description
HA-159503*	**Enhancement**: Portable HAK. Instead of installing the HAK locally on each host, it can be used from a mounted network drive or a portable USB flash drive. For more information, refer to the user guide.
HA-23373*	**Enhancement**: **xiv_fc_admin -L** now displays all four levels of the XIV microcode version number, in the **x.y.z.n** format. For example: 10.2.4.1 is displayed for microcode 10.2.4a, 10.2.4.2 is displayed for microcode 10.2.4b.

Ticket ID	Description
HA-121647*	**Change**: The IBM Storage Solutions External Runtime Components (previously named "XPyV") are now integrated within the HAK code, rather than installed separately.

* Applies to all supported operating systems.

Version 1.6.0 (May 2011)

Version 1.6.0 included the following enhancements and fixes.

Ticket ID	Description
HA-18616*	**Enhancement**: **xiv_diag** now provides the HAK version number when used with the **--version** argument.
HA-22130*	**Enhancement**: More information is collected with the **xiv_diag** command.
HA-24970*	**Enhancement**: **xiv_devlist** can display LUN sizes in different capacity units, by using the **–u** or **--size-unit** argument.
HA-26338*	**Enhancement**: The **xiv_devlist** output can be saved to a file in CSV or XML format, by adding the **–f** or **--file** argument.
HA-18046*	**Fixed**: Erroneous text message prompted by the **xiv_attach** command.
HA-18378	**Fixed**: The Symantec XIV ASL library is not always detected.
HA-21456*	**Fixed**: Redirecting the **xiv_devlist** output results in a broken pipe error.
HA-21805	**Fixed**: **xiv_attach** fails when STMS already installed.
HA-22470*	**Fixed**: In some cases, the **xiv_devlist** output shows "N/A" instead of the actual volume size.
HA-23250*	**Fixed**: **xiv_attach** crashes when a user who is not defined as a storage admin (user type) tries to define a host.
HA-23250*	**Fixed**: **xiv_attach** crashes when a user who is not defined as a storage admin (user type) tries to define a host.
HA-25094	**Fixed**: In some cases, **xiv_diag** causes a reboot.
HA-26776	**Fixed**: **xiv_attach** fails on Solaris 9 SPARC Update 8.
HA-54464	**Fixed**: Authorized users cannot perform host attachment after a read only user attempts to perform host attachment.
HA-60068	**Fixed**: **xiv_devlist** fails on Solaris 9 after mapping volumes.
HA-62263*	**Fixed**: Entering an invalid username or password results in a wrong error message.

* Applies to all supported operating systems.

Version 1.5.2 (April 2010)

Version 1.5.2 included the following changes and fixes.

Ticket ID	Description
HA-9356	**Change**: **xiv_devlist** now sorts the output by device name.
HA-13536	**Fixed**: Not all LUNs are discovered when re-scanning.
HA-13493	**Fixed**: The host configuration may fails with a timeout.
HA-13430	**Fixed**: Failure to mount a Boot From SAN device.
HA-13069	**Fixed**: The admin utilities require multiple reboots.

* Applies to all supported operating systems.

Version 1.5.1 (December 2009)

Version 1.5.1 included the following changes and fixes.

Ticket ID	Description
HA-12104	**Change**: **xiv_diag** now uses compressed TAR archives. Because ZIP files do not support empty directories, symbolic links, and so on, **xiv_diag** now uses compressed TAR archives to support these exceptions.
HA-6844	**Fixed**: **xiv_devlist** causes a SCSI error on Solaris 10.
HA-11732	**Fixed**: The installer fails when using the UTF-8 locale.
HA-12155	**Fixed**: The sgen driver does not load automatically upon reboot.
HA-12335	**Fixed**: The **configure** and **verify** commands fail when the module name is missing in the **modinfo** command output.
HA-12382	**Fixed**: Repeated reboots are required because the MPxIO status is incorrectly detected.

* Applies to all supported operating systems.

Version 1.5.0 (November 2009)

Version 1.5.0 included the following enhancements, changes, and fixes.

Ticket ID	Description
HA-9993	**Enhancement**: Added support for Veritas Dynamic Multipathing (DMP).
HA-3965*	**Enhancement**: Automatic host definition on undefined XIV systems. The **xiv_attach** and admin commands automatically detect undefined XIV storage systems and define the host on those systems.

Ticket ID	Description
HA-6151*	**Enhancement**: Added the **--version** command argument. The **--version** command argument was added to the **xiv_fc_admin** and **xiv_iscsi_admin** commands. In addition, **xiv_attach** displays the HAK version in the Welcome banner.
HA-6565*	**Enhancement**: Support for iSCSI connectivity with CHAP authentication. The Host Attachment Kit supports attaching hosts for XIV systems using iSCSI with CHAP authentication. The **xiv_iscsi_admin** and **xiv_attach** commands are CHAP aware.
HA-6708*	**Enhancement**: Colored output for host attachment binaries. Colored output added to the following commands: • **xiv_attach** • **xiv_iscsi_admin** • **xiv_fc_admin** • **xiv_devlist** • **xiv_diag**
HA-9877*	**Enhancement**: Listing attached XIV systems. The **xiv_attach**, **xiv_iscsi_admin** and **xiv_fc_admin** commands display the attached XIV systems along with basic connectivity information.
HA-9887*	**Enhancement**: Additions and changes to the **xiv_devlist** command. • Added command-line arguments: – **-t xml** provides a new XML output format – **--hex** changes the machine ID from decimal to hexadecimal base – **-o** adds all available fields to the table – **--xiv-only** lists only the XIV devices – **-d** writes debugging information to a file • Wide-terminal-aware table output: – If the terminal width is long enough, each row in the table is printed on a single line. – If the terminal width is shorter than needed, the columns are wrapped where necessary. • Changed the machine ID format to decimal base. • Added verification that the user is running with root/administrator permissions.
HA-6956*	**Change**: Restructured host attachment tree. The host attachment tree was restructured so that it will be consistent across all operating systems.

Ticket ID	Description
HA-9989	**Fixed**: An error message appears after uninstallation.
HA-9990	**Fixed**: Re-scanned volumes are not listed on Solaris 9.
HA-9991	**Fixed**: The configure command fails on Solaris 9 during the Boot from SAN configuration step.
HA-9995	**Fixed**: The HAK package name does not match the Solaris package naming conventions.
HA-10183	**Fixed**: The HAK does not run on Solaris 10 SPARC that is earlier than Update 6.
HA-10200	**Fixed**: **xiv_devlist** displays unlabeled disks as bad devices.
HA-10327	**Fixed**: An error message stating "`XPyV: command not found`" appears in a first-time installation.
HA-10331	**Fixed**: The HAK installation fails if another installed package was detected as conflicting with Python.
HA-10854	**Fixed**: The rescan operation may not remove all unmapped devices.

* Applies to all supported operating systems.

Known issues

This section details the known issues in version 2.0.0, along with possible workarounds (if workarounds are available).

Ticket ID	Description
HA-100800	Mapping the LUN0 volume causes errors. 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. Accordingly, mapping the LUN0 volume is not recommended.
HA-54557	**xiv_devlist** displays an erroneous number of XIV LUN paths when a volume is mapped to LUN0. To avoid this issue, do not map volumes to LUN0.
HA-27042	**xiv_devlist** does not list the LUN numbers. Currently there is no workaround for this limitation (HA-27042).
HA-91689	A host cannot be attached over iSCSI if it is already attached over FC. Workaround: The host can be defined manually on the XIV system using the XIV GUI or XIV CLI.

Ticket ID	Description
HA-101034	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. Currently there is no workaround for this limitation (HA-101034).
HA-164314	Host attachment fails when CHAP authentication is used over iSCSI, and no error message is displayed. Currently there is no workaround for this limitation (HA-164314).
HA-164764	After unmapping volumes on SPARC-based hosts, **xiv_devlist** does not list these volumes as unreachable devices. Currently there is no workaround for this limitation (HA-164764).

HA-168778	Native Solaris OS messages may appear when using the HAK tools.
	
	The following warning messages may be displayed by the Solaris OS:
	`Corrupt label: wrong magic number.`
	`Driver failed to attach.`
	
	These messages do not affect the HAK functionality and can be ignored.

HA-204001	When working with XIV systems of microcode 10.2.2.x, the operating system on x86-based or SPARC hosts crashes during iSCSI configuration. Currently there is no workaround for this limitation (HA-204001).
HA-237757	Running **xiv_attach** on x64-based Solaris 11 with iSCSI connectivity may cause errors when trying to define the host on the XIV system. Workaround: Use the XIV management GUI or XCLI utility to define the host manually.
HA-244350	When VxDMP (Veritas dynamic multipathing) is in use on a SPARC-based Solaris 11 host, **xiv_devlist** lists both native MPxIO (multiplexed I/O) devices and VxDMP devices. This has no impact on the host multipathing functionality. Currently there is no workaround for this limitation (HA-244350).

Ticket ID	Description
HA-255825	The upload of the host profile to the XIV storage system fails silently (without any indication) in the following host configuration: 1. The host is connected to the XIV storage system over iSCSI, and – 2. The host HBA FC ports are zoned with the FC targets of the XIV storage system, but are not registered with it. To resolve this issue, remove the host HBA FC port zoning with the FC targets of the XIV storage system.

Related information and publications

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

- IBM Storage Host Software Solutions Information Center (publib.boulder.ibm.com/infocenter/strhosts/ic)
- IBM XIV Storage System Information Center (publib.boulder.ibm.com/infocenter/ibmxiv/r2)
- Oracle Solaris Patching Documentation Center (www.oracle.com/technetwork/systems/patches/solaris/index.html)
- Oracle Solaris 11 Documentation (www.oracle.com/technetwork/documentation/solaris-11-192991.html)
- Oracle Solaris 10 Documentation (www.oracle.com/technetwork/documentation/solaris-10-192992.html)
- Oracle Solaris Online Forum (forums.oracle.com/forums/category.jspa?categoryID=303)

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- IBM Directory of Worldwide Contacts website (www.ibm.com/planetwide)

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