

IBM XIV Host Attachment Kit for Solaris  
Version 2.4.0

*Release Notes*



**First Edition (March 2015)**

This document edition applies to version 2.4.0 of the IBM XIV Host Attachment Kit for Solaris software package. Newer document editions may be issued for the same version in order to add missing information or amend typographical errors. The edition is reset to "First Edition" for every newly released 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](http://www.ibm.com/support/fixcentral)).

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## 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.

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**Note:** This section applies to version 2.4.0. For information about the compatibility and requirements of a previous Host Attachment Kit version, refer to its relevant release notes.

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## 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 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	10.2.4.x
	11.0.x, 11.1.x, 11.2.x, 11.3.x, 11.4.x, 11.5.0, 11.5.1
IBM Spectrum Accelerate	11.5.0.b

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**Note:** Newer microcode versions may also be compatible. When a newer XIV microcode version becomes available, refer to the latest XIV storage system release notes. 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](http://publib.boulder.ibm.com/infocenter/ibmxiv/r2)).

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## 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](http://www.ibm.com/systems/support/storage/config/ssic)).

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**Important:** For iSCSI connectivity, only iSCSI software initiators are supported. Hardware iSCSI HBAs are not supported.

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**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.

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## 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, 5.1, or 6.x (including native support for XIV in Veritas Storage Foundation 5.1)

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**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 Enterprise Technical Support website ([www.symantec.com/business/support/index?page=home](http://www.symantec.com/business/support/index?page=home)).
  - Using more than one multipath I/O framework on the same host is not supported.
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## Change log

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

### Version 2.4.0 (March 2015)

Version 2.4.0 adds support for XIV microcode version 11.5.1 and IBM Spectrum Accelerate 11.5.0.b.

### 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*	<p><b>Enhancement:</b> The <code>--list (-L)</code> command option can be used with <code>xiv_diag</code> to display information that is to be gathered by the utility.</p> <p>For more information, refer to the user guide.</p>
HA-261277	<p><b>Enhancement:</b> The <code>--clean</code> command option can be used with <code>xiv_fc_admin --rescan</code> to remove unreachable devices from the host.</p> <p>For more information, refer to the user guide.</p>
HA-261361*	<p><b>Enhancement:</b> Added support for the XIV multi-tenancy feature, allowing host attachment to 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.</p> <p>For more information, refer to the user guide.</p>
HA-91689	<p><b>Fixed:</b> A host cannot be attached over iSCSI if it is already attached over FC.</p>
HA-261223*	<p><b>Fixed:</b> A general error message appears when running <code>xiv_attach</code>, <code>xiv_fc_admin</code>, or <code>xiv_iscsi_admin</code> if non-English characters are used in the XIV credentials.</p>
* Applies to all supported operating systems.	

## Version 2.2.0 (November 2013)

Version 2.2.0 added support for version 11.4.0 of the XIV microcode and includes the following enhancement and fixes.

Ticket ID	Description
HA-261142*	<p><b>Enhancement:</b> The Host Profiler utility (<code>xiv_host_profiler</code>) can now detect the microcode versions of the XIV systems to which the host is connected. In addition, users can use the <code>--xiv-microcode</code> option with the <code>--analyze</code> command argument in order to run the host profile analysis against a specific microcode version.</p>
HA-255825	<p><b>Fixed:</b> Uploading the host profile to the XIV storage system over an iSCSI connection fails silently when the host HBA FC ports are zoned but not registered with the FC targets of that XIV system.</p>
HA-261227	<p><b>Fixed:</b> Scheduled tasks that are set with <code>xiv_host_profiler</code> or <code>xiv_attach</code> for running the Host Profiler utility might fail if there are other scheduled tasks that are defined to occur exactly at midnight (00:00).</p>
* Applies to all supported operating systems.	

## Version 2.1.0.1 (August 2013)

Version 2.1.0.1 included the following hotfix and change.

Ticket ID	Description
HA-261196	<b>Fixed:</b> In some cases, a general error (type 'exceptions.AttributeError') might occur if <b>xiv_devlist</b> , <b>xiv_attach</b> , <b>xiv_fc_admin</b> , or <b>xiv_iscsi_admin</b> is used when the online volume migration (IBM Hyper-Scale Mobility feature) is in <b>Proxy</b> state.
HA-261181*	<b>Change:</b> In the <b>xiv_devlist</b> output, "OLVM State" was renamed to "Hyper-Scale Mobility".

\* Applies to all supported operating systems.

## Version 2.1.0 (June 2013)

Version 2.1.0 added support for version 11.3.0 of XIV microcode and for the IBM Hyper-Scale Mobility (online volume migration) feature.

Additional changes in version 2.1.0:

Ticket ID	Description
HA-231357*	<b>Enhancement:</b> The <b>--no-headers</b> argument can be used with the <b>xiv_devlist -t csv</b> and <b>xiv_syslist -t csv</b> commands to generate CSV output without column headers.
HA-253044*	<b>Enhancement:</b> An additional step in the <b>xiv_attach</b> procedure allows scheduling a task for running the Host Profiler utility on the host. For more information, refer to the user guide.
HA-256729*	<b>Fixed:</b> In some cases, the <b>xiv_host_profiler --analyze</b> command might generate notices that are unrelated to the host processor architecture.
HA-257071	<b>Fixed:</b> The <b>xiv_devlist</b> output is limited to 80 characters per line, ignoring any console-defined screen width.
HA-261114	<b>Fixed:</b> Instead of running once as scheduled, Host Profiler scheduled tasks run every minute within the specified hour. <b>Note:</b> Scheduled tasks that were created with version 2.0.0 should be removed and redefined with version 2.1.0.
HA-261126*	<b>Fixed:</b> <b>xiv_devlist</b> might exit with error messages when running on a host connected to a storage device other than the XIV storage system.
HA-8442*	<b>Fixed:</b> <b>xiv_host_profiler</b> and <b>xiv_syslist</b> might exit with error messages when running on a host connected to a storage device other than the XIV storage system.

\* Applies to all supported operating systems.



## Version 2.0.0 (March 2013)

Version 2.0.0 included the following enhancements.

Ticket ID	Description
HA-26055*	<b>Enhancement:</b> A new host diagnostics utility, Host Profiler ( <b>xiv_host_profiler</b> ), 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. <b>Note:</b> The Host Profiler utility is compatible only with XIV microcode version 11.2 or later.
HA-251470	<b>Enhancement:</b> 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	<b>Fixed:</b> <b>xiv_attach</b> 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*	<b>Fixed:</b> <b>xiv_devlist</b> 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	<b>Enhancement:</b> Detailed on-screen help prompt is now available for the different HAK utilities using the <b>man</b> 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*	<b>Enhancement:</b> The <b>--path</b> optional argument is now available for the <b>xiv_diag</b> command, allowing one-step definition of the directory into which the report file should be generated. For more information, refer to the user guide.

Ticket ID	Description
HA-223490	<b>Fixed:</b> When no volumes are mapped to the host, some <b>module:port</b> FC targets are missing from the <b>xiv_syslist</b> report.
HA-233433*	<b>Fixed:</b> In some cases, <b>xiv_syslist</b> 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*	<p><b>Enhancement:</b> A new utility, <b>xiv_syslist</b>, has been added to the IBM XIV Host Attachment Kit in order to provide broader and more customized information than the output of the <b>xiv_fc_admin -L</b> and <b>xiv_iscsi_admin -L</b> commands.</p> <p>Using the <b>xiv_syslist</b> 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.</p>
HA-172254	<b>Fixed:</b> In some cases, <b>xiv_devlist -o</b> returns an exception.

\* Applies to all supported operating systems.

## Known issues

This section details the known issues in version 2.4.0 of the IBM XIV Host Attachment Kit for Solaris, along with possible solutions or workarounds (if available).

Ticket ID	Description
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 recommended.</p>
HA-54557	<p><b>xiv_devlist</b> displays an erroneous number of XIV LUN paths when a volume is mapped to LUN0.</p> <p>To avoid this issue, do not map volumes to LUN0.</p>
HA-27042	<p><b>xiv_devlist</b> does not list the LUN numbers.</p> <p>Currently there is no workaround or solution for this limitation.</p>

Ticket ID	Description
HA-101034	<p>After a volume is remapped to a different logical unit number (LUN), <b>xiv_devlist</b> erroneously displays double the amount of available paths for the volume.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-164314	<p>Host attachment fails when CHAP authentication is used over iSCSI, and no error message is displayed.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-164764	<p>After unmapping volumes on SPARC-based hosts, <b>xiv_devlist</b> does not list these volumes as unreachable devices.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-168778	<p>Native Solaris OS messages may appear when using the HAK tools.</p> <p>The following warning messages may be displayed by the Solaris OS:  Corrupt label: wrong magic number.  Driver failed to attach.</p> <p>These messages do not affect the HAK functionality and can be ignored.</p>
HA-237757	<p>Running <b>xiv_attach</b> on x64-based Solaris 11 with iSCSI connectivity might cause errors when trying to define the host on the XIV system.</p> <p>To avoid this issue, use the XIV management GUI or XCLI utility to define the host manually.</p>
HA-244350	<p>When VxDMP (Veritas dynamic multipathing) is in use on a SPARC-based Solaris 11 host, <b>xiv_devlist</b> lists both native MPxIO (multiplexed I/O) devices and VxDMP devices. This has no impact on the host multipathing functionality.</p> <p>Currently there is no workaround or solution for this limitation.</p>
HA-258376	<p><b>xiv_devlist</b> might become unresponsive or slow when there are more than 10 volumes mapped to the host from the XIV storage system.</p> <p>Currently there is no workaround or solution for this limitation.</p>

Ticket ID	Description
HA-261317	<p>In some cases, when running <code>xiv_syslist</code> on a host that is connected over iSCSI to multiple XIV modules, only one of these modules may be listed on the <code>xiv_syslist</code> report. This may also cause the Host Profiler utility (<code>xiv_host_profiler</code>) to detect only a single connected XIV module.</p> <p>Currently there is no workaround or solution for this limitation.</p>

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## 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 ([pic.dhe.ibm.com/infocenter/strhosts/ic](http://pic.dhe.ibm.com/infocenter/strhosts/ic))
- IBM XIV Storage System Information Center ([pic.dhe.ibm.com/infocenter/ibmxiv/r2](http://pic.dhe.ibm.com/infocenter/ibmxiv/r2))
- Oracle Solaris Patching Documentation Center ([www.oracle.com/technetwork/systems/patches/solaris/index.html](http://www.oracle.com/technetwork/systems/patches/solaris/index.html))
- Oracle Solaris 11 Documentation ([www.oracle.com/technetwork/documentation/solaris-11-192991.html](http://www.oracle.com/technetwork/documentation/solaris-11-192991.html))
- Oracle Solaris 10 Documentation ([www.oracle.com/technetwork/documentation/solaris-10-192992.html](http://www.oracle.com/technetwork/documentation/solaris-10-192992.html))
- Oracle Solaris Online Forum (<https://community.oracle.com/forums/category.jspa?categoryID=303>)

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## Getting information, help, and service

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- IBM website ([ibm.com](http://ibm.com)<sup>®</sup>)
- IBM Support Portal website ([www.ibm.com/storage/support](http://www.ibm.com/storage/support))
- IBM Directory of Worldwide Contacts website ([www.ibm.com/planetwide](http://www.ibm.com/planetwide))

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