

IBM Storage Enabler for Windows Failover Clustering  
Version 1.2.0

*Release Notes*



**Second Edition (February 2015)**

This edition applies to version 1.2.0 of the IBM Storage Enabler for Windows Failover Clustering 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® Storage Enabler for Windows Failover Clustering is a software agent that runs as a Microsoft Windows Server service on the nodes of two geographically dispersed clusters, providing failover automation for IBM XIV® storage provisioning on these nodes, and enabling deployment of these nodes in a geo-cluster configuration.

You can download the IBM Storage Enabler for Windows Failover Clustering software package at any time from the IBM Fix Central website at: [www.ibm.com/support/fixcentral](http://www.ibm.com/support/fixcentral)

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## Compatibility and requirements

This section specifies the compatibility and requirements of version 1.2.0 of the IBM Storage Enabler for Windows Failover Clustering.

### Supported Windows Server versions

The IBM Storage Enabler for Windows Failover Clustering supports different Windows Server versions, service packs, and editions as listed in the following table:

Operating system	Service pack	Architecture
Microsoft Windows Server 2003	SP1, SP2	x86, x64
Microsoft Windows Server 2003 R2	SP1, SP2	x86, x64
Microsoft Windows Server 2008	None, SP1, SP2	x86, x64
Microsoft Windows Server 2008 R2	None, SP1	x64
Microsoft Windows Server 2012	None	x64
Microsoft Windows Server 2012 R2	None	x64

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**Important:** Refer to “Required software on the host” on page 2 for information about required operating system updates.

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### Supported XIV storage systems

The IBM Storage Enabler for Windows Failover Clustering supports different microcode versions of the IBM XIV Storage System, as listed in the following table.

**Attention:**

- The IBM Storage Enabler for Windows Failover Clustering does not support the asynchronous remote mirroring feature. Only synchronous remote mirroring is supported.
  - Do not map XIV volumes that are used by the cluster to LUN0.
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Storage system	Microcode version	Compatibility note
IBM XIV	10.2.4  11.0.x, 11.1.x, 11.2.x, 11.3.x, 11.4.0	N/A

## Required software on the host

Prior to installing the IBM Storage Enabler for Windows Failover Clustering and depending on the installed Windows Server version, specific operating system updates must be installed on the host.

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### Important:

- The following table contains information that is known at the time of the General Availability (GA) date. Newer or additional hotfixes may be required in distinct cases or in particular production environments. Contact IBM XIV Support if you encounter errors or difficulties.
  - Always refer to the Microsoft documentation (KB article) of any hotfix or set of hotfixes that your system requires.
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Operating system	Service pack	Required hotfixes and components
Windows Server 2003	Service Pack 1	<ul style="list-style-type: none"> <li>• Microsoft Hotfix KB923830</li> <li>• Microsoft Hotfix KB919117</li> <li>• Microsoft Hotfix KB928385</li> <li>• Microsoft Hotfix KB921181</li> <li>• IBM XIV Host Attachment Kit for Windows (refer to the relevant release notes)</li> </ul>
	Service Pack 2	<ul style="list-style-type: none"> <li>• Microsoft Hotfix KB895092</li> <li>• Microsoft Hotfix KB919117</li> <li>• Microsoft Hotfix KB928385</li> <li>• Microsoft Hotfix KB921181</li> <li>• IBM XIV Host Attachment Kit for Windows</li> </ul>
Windows Server 2003 R2	Service Pack 1	<ul style="list-style-type: none"> <li>• Microsoft Hotfix KB923830</li> <li>• Microsoft Hotfix KB919117</li> <li>• Microsoft Hotfix KB928385</li> <li>• Microsoft Hotfix KB921181</li> <li>• IBM XIV Host Attachment Kit for Windows</li> </ul>
	Service Pack 2	<ul style="list-style-type: none"> <li>• Microsoft Hotfix KB895092</li> <li>• Microsoft Hotfix KB919117</li> <li>• Microsoft Hotfix KB928385</li> <li>• Microsoft Hotfix KB921181</li> <li>• IBM XIV Host Attachment Kit for Windows</li> </ul>
Windows Server 2008	None	<ul style="list-style-type: none"> <li>• Microsoft Hotfix set KB957311</li> <li>• IBM XIV Host Attachment Kit for Windows</li> </ul>
	Service Pack 1	IBM XIV Host Attachment Kit for Windows
Windows Server 2008 R2	None	IBM XIV Host Attachment Kit for Windows
	Service Pack 1	IBM XIV Host Attachment Kit for Windows

Operating system	Service pack	Required hotfixes and components
Windows Server 2012	None	IBM XIV Host Attachment Kit for Windows
Windows Server 2012 R2	None	IBM XIV Host Attachment Kit for Windows

## Change log

This section summarizes the changes made in different version releases of the IBM Storage Enabler for Windows Failover Clustering.

### Version 1.2.0 (December 2013)

Version 1.2.0 adds support for Microsoft Windows Server 2012 R2.

Additional changes in version 1.2.0:

Ticket ID	Description
MSCSAGENT-259512	<p><b>Enhancement:</b> Added limited support for IBM Hyper-Scale Mobility.</p> <p><b>Attention:</b> Volumes can be configured for protection by the IBM Storage Enabler for Windows Failover Clustering agent, but only after the migration is completed, after Proxy End mode.</p> <p>To help you determine whether your environment supports IBM Hyper-Scale Mobility together with the IBM Storage Enabler for Windows Failover Clustering, contact IBM Support.</p>
MSCSAGENT-259519	<p><b>Fixed:</b> The installer fails when the IBM Storage Enabler is installed with IBM XIV Host Attachment Kit (HAK) version 2.0.0, or with a portable HAK installation.</p>
MSCSAGENT-251103	<p><b>Fixed:</b> Failover fails if the name of subordinate and master volumes is different.</p>
MSCSAGENT-243376	<p><b>Fixed:</b> In some cases, a Windows exception is logged when trying to receive device information.</p>
MSCSAGENT-242179	<p><b>Fixed:</b> The agent service failed and the xiv_mscs_admin command failed because of stale volume mappings.</p>

### Version 1.1.0 (September 2012)

Version 1.1.0 added support for Microsoft Windows Server 2012.

Additional changes in version 1.1.0:

Ticket ID	Description
MSCSAGENT-231287	<p><b>Enhancement:</b> New administrator command options are now available: <b>--force-fail-over-enabled</b> and <b>--force-fail-over-disabled</b>. These commands provide an alternative to the red_button registry key modification. Refer to the user guide for information about these command options.</p>

Ticket ID	Description
MSCSAGENT-238508	<b>Enhancements:</b> The forced failover status (enabled or disabled) is now reported in the <b>--report</b> command output.
MSCSAGENT-29727	<b>Fixed:</b> The XIV command line interface (XCLI) credentials that the IBM Storage Enabler uses must be defined on all XIV systems that are detected on the node.
MSCSAGENT-49020	<b>Fixed:</b> When using XIV storage systems of different microcode versions, remote XCLI commands might fail. <b>Note:</b> Because this issue is now resolved, the procedure of upgrading the XIV microcode (provided in the previous release notes) is no longer required.
MSCSAGENT-111979	<b>Fixed:</b> When using Windows Server 2008 or 2008 R2 clusters, consider the following issue:  XIV volumes that are defined in the 'Available Storage Group' cluster group cause the <b>--deploy</b> command to add the XIV mirror resource to the Available Storage group.
MSCSAGENT-165347	<b>Fixed:</b> In some cases, a failover operation might reactivate the mirror function even if it was deactivated by the user.
MSCSAGENT-240501	<b>Fixed:</b> A failure occurs if a physical disk resource type is added to the cluster without an actual physical disk connected.

## Version 1.0.3 (September 2011)

Version 1.0.3 added support for version 11.0 of the IBM XIV microcode (XIV Gen3).

Additional changes in version 1.0.3:

Ticket ID	Description
MSCSAGENT-148284	<b>Enhancement:</b> The installation package supports silent (unattended) installation from the Windows command prompt. <ul style="list-style-type: none"> <li>To run a silent installation, enter:  <code>IBM_Storage_Enabler_for_Windows_Failover_Clustering_1.0.3_x64/x86.exe /s /v/qn</code></li> <li>To run a silent uninstallation, enter:  <code>IBM_Storage_Enabler_for_Windows_Failover_Clustering_1.0.3_x64/x86.exe /x /v/qn</code></li> </ul>



Ticket ID	Description
MSCSAGENT-102642	<p><b>Fixed:</b> Sporadic failovers occur between nodes that use the software agent, due to errors in the XIV Storage System.</p> <p>The IBM Storage Enabler for Windows Failover Clustering is now managing XIV Storage System without failures while the master volume is accessible for read and write operations.</p>

### Version 1.0.2.1 (April 2011)

Version 1.0.2.1 resolved the following issue:

Ticket ID	Description
MSCSAGENT-148284	<p><b>Fixed:</b> A known issue in the XIV Storage System (issue ID: SYS 25912) might result in a failover.</p>

### Version 1.0.2 (February 2011)

Version 1.0.2 included the following changes:

Ticket ID	Description
MSCSAGENT-28779	<p><b>Enhancement:</b> Improved verification of installation and deployment.</p> <p>The <b>--verify</b> and <b>--report</b> command options were extended to check the status of all possible owners of cluster resources and resource types.</p>
MSCSAGENT-24943	<p><b>Enhancement:</b> Improved the remote connectivity mirror check mechanism.</p> <p>Before this change, in some rare cases the software agent did not detect the correct mirroring state.</p>
FSP-27047	<p><b>Fixed:</b> Resource groups are going offline when closing or relaunching the cluadmin.exe file.</p>
MSCSAGENT-29727	<p><b>Fixed:</b> Limitation in the XCLI credential definition.</p> <p>The XCLI credentials that are used by the software agent had to be defined on each XIV Storage System that is discoverable by the node.</p>
MSCSAGENT-28308	<p><b>Fixed:</b> Errors occur when installing the German version of Windows Server 2008.</p>
XEST-22857	<p><b>Fixed:</b> In some cases, the MSCS administration server fails due to a network status error labeled as STATUS_M CL_NETWORK_ERROR</p>

Ticket ID	Description
MSCSAGENT-17329	<p><b>Enhancement:</b> Added user credential management capabilities.</p> <p>A bug that caused the user credentials to change when a user logged in to the server was fixed. In addition, the user can now change the credentials by issuing the <b>--change-credentials</b> command:</p> <pre>xiv_mscs_admin --change-credentials</pre>

## Version 1.0.1 (July 2010)

Version 1.0.1 included the following fix for version 1.0.0:

Ticket ID	Description
MSCSAGENT-20775	<p><b>Fixed:</b> The MSCS agent service fails on a master volume that is disconnected from the remote subordinate.</p> <p>When manually disconnecting a mirror link of two XIV systems that use mirrored volumes in an MSCS environment, the mirror resource no longer fails. The non-failure prevents the failure of the entire group.</p>

## Known issues

Version 1.2.0 contains some known issues, along with possible workarounds (if a workaround is available).

Ticket ID	Description
MSCSAGENT-29797	Resource names in the failover cluster must not contain a caret character (^) because it cannot be processed by the software agent.
MSCSAGENT-18834	<p>Consistency groups are not supported.</p> <p>Volumes in mirrored consistency groups are not supported.</p> <p>Although volumes that depend on IBM XIV mirror resources in a cluster can be defined, the failover does not work, and the roles of these volumes are not switched or changed. Accordingly, mirrored volumes that are defined in mirrored consistency groups cannot be used.</p>

Ticket ID	Description
MSCSAGENT-27291	<p>Switch Roles batch issued by the IBM Storage Enabler may trigger an error in the XIV storage system mirroring.</p> <p>In some rare cases, a Switch Roles batch operation on an XCLI controlled cluster node with very low Input/Output Operations Per Second (IOPS) might cause a corruption in the mirroring, resulting in a failover.</p> <p>Currently there is no workaround for this issue (MSCSAGENT-27291).</p>
MSCSAGENT-165290	<p>The XIV CLI (XCLI) storage administrator credentials that are defined on the local XIV system and used by the cluster nodes must also be defined on the remote XIV system.</p> <p>If the credentials are not defined on the remote XIV system, failovers to the remote nodes result in a failure.</p> <p>Currently there is no workaround for this issue (MSCSAGENT-165290).</p>
MSCSAGENT-239130	<p>The <b>--verify</b> command fails when there are disk resources in the cluster representing unreachable physical disks.</p> <p>Currently there is no workaround for this issue (MSCSAGENT-239130).</p>
MSCSAGENT-242191	<p>In some rare cases, the <b>xiv_mscs_service restart</b> command fails.</p> <p>Currently there is no workaround for this issue (MSCSAGENT-242191).</p>
MSCSAGENT-243606	<p>When upgrading the IBM Storage Enabler from version 1.0.3 to version 1.1.0 on Windows Server 2008, the user receives a notification that when the installation finishes, a restart to the host is needed.</p> <p><b>Workaround:</b> Disregard this notification and continue with the installation and deployment of the upgrade.</p>
MSCSAGENT-243936	<p>The credentials for accessing XIV storage systems can be set on the node only when the language for non-Unicode programs is set in Windows to 'English (United States)'.</p> <p>When any other language is set as the language for non-Unicode programs, the XIV credentials cannot be authenticated and the connection fails.</p> <p>To resolve this issue, access the regional settings from the Windows control panel, and set 'English (United States)' as the language for non-Unicode programs.</p>

Ticket ID	Description
FSP-57561	<p data-bbox="751 222 1349 285">Disk sector 11 access error message appears when configuring a geographically dispersed cluster.</p> <p data-bbox="751 312 1390 411">The following storage test error might appear during the initial test of a geographically dispersed cluster: "Failed to access sector 11 on disk..."</p> <p data-bbox="751 438 1349 562">For more information about this error, refer to the 'Geographically dispersed clusters' section on the following Microsoft support page: <a href="http://support.microsoft.com/kb/943984">http://support.microsoft.com/kb/943984</a></p>
MSCSAGENT-259552	<p data-bbox="751 581 1419 644">Forced failover may fail to change roles for XIV storage systems.</p> <p data-bbox="751 646 1419 863"><b>Workaround:</b> Do not activate forced failover for the IBM Storage Enabler or disable it by running the <b>xiv_mscs_admin --force-fail-over-disable</b> command. If the forced failover must be enabled and there is no connectivity between the XIV systems, perform the role change on the target XIV manually, using its GUI or XCLI.</p>

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## Related information sources

You can find additional information and publications related to the IBM Storage Enabler for Windows Failover Clustering on the following IBM and Microsoft websites.

- IBM XIV Storage System Information Center ([publib.boulder.ibm.com/infocenter/ibmxiv/r2](http://publib.boulder.ibm.com/infocenter/ibmxiv/r2))
- IBM XIV Host Attachment Kit for Windows, release notes and user guide, available under Host Connectivity on the IBM Storage Host Software Solutions Information Center ([pic.dhe.ibm.com/infocenter/strhosts/ic/](http://pic.dhe.ibm.com/infocenter/strhosts/ic/))
- Microsoft Windows Failover Clustering Overview ([technet.microsoft.com/en-us/library/hh831579](http://technet.microsoft.com/en-us/library/hh831579))
- Microsoft Server Clusters Technical Reference ([technet.microsoft.com/en-us/library/cc759014\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc759014(WS.10).aspx))
- Failover Clusters in Windows Server 2008 ([technet.microsoft.com/en-us/library/ff182326\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/ff182326(WS.10).aspx))
- Failover Clusters in Windows Server 2008 R2 ([technet.microsoft.com/en-us/library/ff182338\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/ff182338(WS.10).aspx))
- Microsoft Support page for Windows clustering and geographically separate sites ([support.microsoft.com/kb/280743](http://support.microsoft.com/kb/280743))
- Microsoft Q&A: Geographically Dispersed Clusters ([technet.microsoft.com/en-us/library/cc757840\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc757840(WS.10).aspx))
- The Microsoft Support Policy for Windows Server 2008 Failover Clusters ([support.microsoft.com/kb/943984/en-us](http://support.microsoft.com/kb/943984/en-us))
- Microsoft Failover and Network Load Balancing Clustering Team Blog ([blogs.msdn.com/b/clustering/](http://blogs.msdn.com/b/clustering/))

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## Getting information, help, and service

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



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