

IBM Spectrum Connect  
Version 3.6.0

*Release Notes*



**First Edition (December 2018)**

This edition applies to version 3.6.0 of the IBM Spectrum Connect software package. Newer document editions may be issued for the same product version in order to add missing information, update information, or amend typographical errors. The edition is reset to 'First Edition' for every new product version.

© **Copyright IBM Corporation 2013, 2018.**

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

---

# Contents

<b>Overview</b>	<b>1</b>
What's new in version 3.6.0	1
Compatibility and requirements	2
Supported storage systems	2
Supported operating systems	7
Supported operating systems and orchestration platforms for containerized environment	7
Included cloud interfaces	8
Minimum server hardware requirements	8
Supported VMware platforms	8
Supported browsers	9
CPU and memory consumption on vRealize Orchestrator	9
Change log	9
Version 3.6.0 (December 2018)	10
Version 3.5.0 (August 2018)	10
Version 3.4.1 (June 2018)	11
Version 3.4.0 (March 2018)	11
Limitations	12
Known issues	12
Related information and publications	30
Getting information, help, and service	31
<b>Notices</b>	<b>33</b>
Trademarks	34



---

## Overview

IBM® Spectrum Connect is a centralized server system that consolidates a range of IBM storage provisioning, automation, and monitoring solutions through a unified storage management interface.

IBM Spectrum Connect provides a single server backend location and enables centralized management of IBM storage resources for different virtualization and cloud platforms.

The following solution components, referred to as interfaces, are supported by the software package:

- **IBM Storage Provider for VMware VASA** – Improves the ability to monitor and automate storage-related operations on VMware platforms. This includes support for VASA 2.0 and virtual volumes. In addition, it uses Storage Policy Based Management (SPBM) technology for optimizing the virtual machine provisioning process.
- **IBM Storage Enhancements for VMware vSphere Web Client** – Integrate into the VMware vSphere Web Client platform and enable VMware administrators to independently and centrally manage their storage resources on IBM storage systems.
- **IBM Storage Plug-in for VMware vRealize Orchestrator** – Allows VMware administrators to include IBM discovery and provisioning in their vRealize Orchestrator automation workflows.
- **IBM Storage Management Pack for VMware vRealize Operations Manager** – Allows VMware administrators to obtain comprehensive monitoring information about the IBM storage resources that are utilized in their virtualized cloud environment.
- **IBM Storage Enabler for Containers** – Provisions storage volumes from an external IBM storage to container frameworks. Storage provisioning can be fully automatized with additional support of cluster orchestration systems to automatically deploy, scale and manage containerized applications.
- **IBM Storage Automation Plug-in for PowerShell** – Runs cmdlets for provisioning and management of the IBM FlashSystem A9000 and A9000R storage systems and IBM Spectrum Virtualize Family products.

---

**Note:** IBM Storage Automation Plug-in for PowerShell and IBM Storage Enabler for Containers are not provided as an integral part of the Spectrum Connect package and must be installed separately.

---

You can download the IBM Spectrum Connect software package at any time from the IBM Fix Central website ([www.ibm.com/support/fixcentral](http://www.ibm.com/support/fixcentral)).

---

## What's new in version 3.6.0

Version 3.6.0 introduces a range of enhancements and fixes as detailed in the following sections.

**General availability date:** 14 December 2018

## Improved event log management for IBM Spectrum Virtualize storage systems

Version 3.6.0 improves event population mechanism for the log files maintained by IBM Spectrum Virtualize Family storage systems.

## VMware vROps (7.0) support

Version 3.6.0 introduces support for version 7.0 of VMware vRealize Operation Manager. This update improves plugin performance, introduces more efficient capacity management and simplifies dashboard creation and administration.

## VMware vRO (7.4) support

Version 3.6.0 adds support for version 7.4 of VMware vRealize Operation Manager, introducing multi-tenancy feature and updating the UI.

## Resolved issues

For information about resolved issues in version 3.6.0, see “Change log” on page 9.

---

## Compatibility and requirements

This section specifies the compatibility and requirements of version 3.6.0 of IBM Spectrum Connect.

---

### Note:

- For information about the compatibility and requirements of previous versions, refer to relevant release notes of IBM Spectrum Connect, IBM Spectrum Control Base Edition or IBM Storage Integration Server.
  - Compatibility and requirements of the IBM Storage Enabler for Containers plugin are detailed in its release notes on IBM Knowledge Center.
- 

## Supported storage systems

IBM Spectrum Connect version 3.6.0 supports different IBM storage systems as listed in the following table.

Storage system	Microcode version	Compatibility note	Supported cloud interface(s)
IBM DS8870	7.5.1	VMware VASA 2.0 support is introduced by the bundle 87.51.xxx with the RESTful API patch. Virtual volume technology is not supported.  For IBM DS8000 Family, IBM Storage Enabler for Containers does not support IBM System Z (s390x) architecture.	<ul style="list-style-type: none"><li>• IBM Storage Provider for VMware VASA</li><li>• IBM Storage Enhancements for VMware vSphere Web Client</li><li>• IBM Storage Enabler for Containers</li></ul>

Storage system	Microcode version	Compatibility note	Supported cloud interface(s)
IBM DS8880	8.0.1, 8.1.x, 8.2.x, 8.3.x, 8.4.x, 8.5.x	VMware vSphere Web Client support is introduced by the bundle 88.1.xxx. Virtual volume technology is not supported.  For IBM DS8000 Family, IBM Storage Enabler for Containers does not support IBM System Z (s390x) architecture.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM FlashSystem 9100	8.2.x		<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM FlashSystem A9000	12.0.x, 12.1.x, 12.2.x, 12.3.x	VMware virtual volume technology (VVol) is not supported	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Enabler for Containers</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> </ul>
IBM FlashSystem A9000R	12.0.x, 12.1.x, 12.2.x, 12.3.x	VMware virtual volume technology (VVol) is not supported	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Enabler for Containers</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> </ul>

Storage system	Microcode version	Compatibility note	Supported cloud interface(s)
IBM FlashSystem V9000	7.4.1, 7.5.0, 7.6.0, 7.7.0, 7.8.x, 8.1.x, 8.2.x		<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Flex System V7000	7.1.0, 7.2.0	IBM Flex System V7000 is bundled with Storwize® product family	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> </ul>
IBM SAN Volume Controller	7.4.0, 7.5.0, 7.6.0, 7.7.0, 7.8.x, 8.1.x, 8.2.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Spectrum Accelerate	11.5.x	<p>Can be managed using Spectrum Connect RESTful APIs.</p> <p>VMware virtual volume technology (VVol) is not supported.</p>	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Enabler for Containers</li> </ul>



Storage system	Microcode version	Compatibility note	Supported cloud interface(s)
IBM Spectrum Virtualize™ as software only	7.7.1, 7.8.x, 8.1.x, 8.2.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Storwize V3500	7.4.0, 7.5.0, 7.6.0, 7.7.0, 7.8.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Storwize V3700	7.4.0, 7.5.0, 7.6.0, 7.7.0, 7.8.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>

Storage system	Microcode version	Compatibility note	Supported cloud interface(s)
IBM Storwize V5000	7.4.0, 7.5.0, 7.6.0, 7.7.0, 7.8.x, 8.1.x, 8.2.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Storwize V7000	7.4.0, 7.5.0, 7.6.0, 7.7.0, 7.8.x, 8.1.x, 8.2.x	Microcode 7.3.0 PTF (with security fix) is also supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Automation Plug-in for PowerShell</li> <li>• IBM Storage Enabler for Containers</li> </ul>
IBM Storwize V7000 Unified	1.4.2, 1.4.3, 1.5.x	Only block storage is supported. File shares and file systems are not supported.	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> </ul>
IBM XIV® Storage System	11.0.x, 11.1.x, 11.2.x, 11.3.x, 11.4.x, 11.5.x, 11.6.x	VMware VASA 2.0 (VVol) is supported by version 11.5.1 and above	<ul style="list-style-type: none"> <li>• IBM Storage Provider for VMware VASA</li> <li>• IBM Storage Enhancements for VMware vSphere Web Client</li> <li>• IBM Storage Plug-in for VMware vRealize Orchestrator</li> <li>• IBM Storage Management Pack for VMware vRealize Operations Manager</li> <li>• IBM Storage Enabler for Containers</li> </ul>

---

**Note:**

- Newer microcode versions may also be compatible. When a newer microcode version becomes available, contact IBM Support to inquire whether the new microcode version is compatible with the current version of IBM Spectrum Connect. Alternatively, check for a newer version of IBM Spectrum Connect. In addition, the IBM Spectrum Connect lifecycle and compatibility matrix on IBM Knowledge Center details the Spectrum Connect lifecycle with compatible storage system microcodes and supported cloud interfaces.
  - IBM FlashSystem® V9000, IBM FlashSystem 9100, IBM Storwize Family and IBM SAN Volume Controller storage systems run the IBM Spectrum Virtualize software. In addition, IBM Spectrum Virtualize package is available as a deployable solution that can be run on any compatible hardware.
  - Refer to the VMware compatibility matrix on IBM Knowledge Center for information about supported combinations of IBM storage system software versions and various VMware cloud platforms.
- 

## Supported operating systems

The IBM Spectrum Connect software can be installed on the following Linux versions.

*Table 1. VMware deployment*

Operating system	Architecture
Red Hat Enterprise Linux (RHEL) 6.3–6.9, 7.0–7.5	x64
CentOS 7.x	x64

## Supported operating systems and orchestration platforms for containerized environment

The following tables list requirements for deployment of the IBM Storage Enabler for Containers add-on.

*Table 2. Operating systems*

Operating system	Architecture
Red Hat Enterprise Linux (RHEL) 7.x	x64, IBM Power Systems (ppc64le), IBM System Z (s390x)
Ubuntu 16.04 or later	x64
SUSE Linux Enterprise Server (SLES) 12	IBM System Z (s390x)

*Table 3. Orchestration platforms*

Orchestration platform	Version	Architecture
Kubernetes	1.9–1.11	x64, IBM System Z (s390x)
IBM Cloud Private	2.1.0.3	x64, IBM Power Systems (ppc64le), IBM System Z (s390x)

---

**Note:** For details about IBM Cloud Private offering, refer to IBM Marketplace.

---

## Included cloud interfaces

Version 3.6.0 of IBM Spectrum Connect includes the following cloud interfaces (plug-ins):

Cloud interface	Version
IBM Storage Provider for VMware APIs for Storage Awareness version 1.0	3.6.0
IBM Storage Provider for VMware APIs for Storage Awareness version 2.0	3.6.0
IBM Storage Enhancements for VMware vSphere Web Client, Flex-based	3.4.0
IBM Storage Enhancements for VMware vSphere Web Client, HTML5-based	3.5.0
IBM Storage Management Pack for VMware vRealize Operations Manager	3.0.1
IBM Storage Plug-in for VMware vRealize Orchestrator	3.4.0
IBM Storage Automation Plug-in for PowerShell*	1.1.0
IBM Storage Enabler for Containers*	1.2.0

---

**Note:** Cloud interfaces marked with an asterisk (\*) are not included into the Spectrum Connect package and must be installed separately.

---

## Minimum server hardware requirements

The Linux server upon which IBM Spectrum Connect is installed should meet the following minimum hardware requirements:

- 64-bit dual-core CPU
- 4 GB of RAM
- 16 GB of free disk space
- 4 GB swap space

The same requirements apply if a virtual machine is used instead of a physical server.

---

**Note:**

- For best performance, use a dedicated server.
  - The minimum requirements are for supporting up to 20 storage systems and up to 1000 objects (storage resources, volumes, hosts, mappings, snapshots, mirroring groups, consistency groups).
- 

## Supported VMware platforms

Version 3.6.0 of IBM Spectrum Connect supports the following VMware platforms and frameworks.

VMware platform or framework	Version
vCenter Server	5.5.x, 6.0.x, 6.5.x, 6.7
vSphere Web Client Server	5.5.x, 6.0.x, 6.5.x, 6.7

VMware platform or framework	Version
vSphere APIs for Storage Awareness (VASA)	1.0, 2.0
vCenter Server Appliance (VCSA)	5.5.x, 6.0.x, 6.5.x, 6.7
vRealize Operations Manager (vROps)	5.8.x, 6.0.x, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 7.0
vRealize Orchestrator (vRO)	5.5.x, 6.0.x, 7.0.x, 7.1.x, 7.2, 7.3, 7.4

---

**Note:**

- The IBM Storage Enhancements for VMware vSphere Web Client are automatically deployed and enabled by registering vCenter servers on Spectrum Connect.
- The IBM Storage Plug-in for VMware vRealize Orchestrator is deployed by installing its plug-in package on the vRealize Orchestrator server.
- The IBM Storage Management Pack for VMware vRealize Operations Manager is deployed by installing its PAK file on the vRealize Operations Manager server.
- Refer to the VMware compatibility matrix on IBM Knowledge Center for information about supported combinations of IBM storage system software versions and various VMware cloud platforms.

For more information, refer to the user guide.

---

## Supported browsers

IBM Spectrum Connect can be accessed and managed with the following web browsers:

- Microsoft Internet Explorer 11.0 or later.
- Mozilla Firefox 31 or later.
- Google Chrome 39.0 or later.

The required screen resolution for GUI management is 1024×768 or higher.

## CPU and memory consumption on vRealize Orchestrator

When the IBM Storage Plug-in for VMware vRealize Orchestrator is used, the CPU and memory consumption impact on the vRealize Orchestrator server is minimal: approximately 2% CPU usage at peak, and less than 1% memory usage.

The server environment on which the IBM Storage Plug-in for VMware vRealize Orchestrator was tested included:

- CPU: 2 vCPU, Intel Xeon X5650 @ 2.67GHz
- Memory: 3088 MB

---

## Change log

This section summarizes the changes that were made in released version of IBM Spectrum Connect.

---

**Note:** New functional features of these versions are only briefly summarized. For a detailed summary of the new functional features of a specific version, refer to the 'What's new' section of its release notes.

---

## Version 3.6.0 (December 2018)

Version 3.6.0 provided the following enhancements:

- Improved event log management for IBM Spectrum Virtualize storage systems.
- VMware vROps (7.0) support.
- VMware vRO (7.4) support.

Ticket ID	Description
SCB-5712	<b>Fixed:</b> Incompatibility in the event management system between Spectrum Connect and new IBM Spectrum Virtualize firmware.
SCB-6108	<b>Fixed:</b> A storage system cannot be added to the <b>Storage System</b> pane, when its volume is mapped to an NVMe-type host.
UB-1060	<b>Fixed:</b> If a pod termination takes more than six minutes, Kubernetes master node attempts to detach the pod automatically. This results in the pod becoming unresponsive, persisting in the <i>Terminating</i> status.

## Version 3.5.0 (August 2018)

Version 3.5.0 provided the following enhancements:

- Support for IBM FlashSystem 9100 storage systems.
- HTML5-based IBM Storage Enhancements for VMware vSphere Web Client.
- Storage services with deduplication capability for Spectrum Virtualize storage systems.
- Data reduction pool attachment on Spectrum Virtualize storage systems.

Ticket ID	Description
SCB-4176	<b>Fixed:</b> Cannot rename a volume if its name starts with a number.
SCB-5204	<b>Fixed:</b> A VM with the vvol-no-requirement policy, using a thin-provisioned disk cannot be created on a VVol-based datastore. In this case, the datastore uses a storage space, containing both a thick- and thin-provisioned services with the thick service set as a default one for the VVol container.
SCB-5431	<b>Fixed:</b> If a vCenter interface is disconnected from a Spectrum Connect server, and then reconnected to its another instance, the old connectivity remains visible in vSphere Web Client.
SCB-5456	<b>Fixed:</b> A volume cannot be created via vSphere Web Client or vRO, if the volume uses a service without mirrored capability, but with paired storage resources attached to it.
SCB-5470	<b>Fixed:</b> Population of the Spectrum Virtualize storage system fails if the storage systems have NPIV enabled.
SCB-5631	<b>Fixed:</b> Adding a volume to a consistency group might fail if the volume uses a replicated storage service.

Ticket ID	Description
SCB-5794	<b>Fixed:</b> Number of attached services for any IBM storage space selected via the vSphere Web Client always displays 0.

## Version 3.4.1 (June 2018)

Version 3.4.1 introduced a full compatibility with requirements of VMware VASA and VMware vRealize Operations Manager (6.7) for the Spectrum Virtualize Family products.

## Version 3.4.0 (March 2018)

Starting from version 3.4.0, IBM Spectrum Control Base Edition was renamed to IBM Spectrum Connect. This version provided the following enhancements:

- Synchronous mirroring for Spectrum Accelerate storage systems
- Local HyperSwap and data mirroring for Spectrum Virtualize storage systems
- Host clustering for Spectrum Virtualize storage systems
- Registering multiple Spectrum Connect instances on several vCenter servers
- IBM Storage Enabler for Containers support by DS8000 Family products
- IBM Storage Automation Plug-in for PowerShell support by FlashSystem A9000 and A9000R
- CentOS 7.x and RHEL 6.9 support
- Improved performance and stability

Ticket ID	Description
SCB-3631	<b>Fixed:</b> Memory-type VVols may fail to show in the VM <b>Related Objects</b> tab under <b>IBM Storage VVols</b> .
SCB-3751	<b>Fixed:</b> A FastClone procedure might fail on IBM SAN Volume Controller storage systems, if the source and target VMs use different storage policies.
SCB-4146	<b>Fixed:</b> Combination of a storage resource on a Spectrum Accelerate Family system and a service with Availability capability set to Regular is not supported. This combination might cause an unstable behavior of Spectrum Connect.
SCB-4167	<b>Fixed:</b> When using IBM Storage Automation Plug-in for PowerShell, volume can be renamed only using volume resize procedure.
SCB-4380	<b>Fixed:</b> Spectrum Connect cannot recover VVol metadata if the metadata disparity occurs.
SCB-4640	<b>Fixed:</b> In the VMware vSphere 6.5 environment and later, generating server certificate requires both IP address and FQDN of the Spectrum Connect server.
SCB-5124	<b>Fixed:</b> IBM Storage Enabler for Containers fails, when attempting to create more than 50 PVCs.
SCB-5127	<b>Fixed:</b> Spectrum Connect with LDAP enabled cannot be registered as a storage provider on VMware vCenter server.

---

## Limitations

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

### Data copying limitation

To prevent unauthorized copying, data transfer between virtual machines is subject to the following limitation:

- When a virtual machine with Spectrum Connect installation is cloned from another VM or from a template, Spectrum Connect fails to start, indicating the database corruption. You can use Spectrum Connect backup and restore functionality to copy the application data to new VMs.

### IBM Enabler for Containers does not support volume migration using IBM Hyper-Scale Mobility

IBM Enabler for Containers does not support volume migration using IBM Hyper-Scale Mobility for the storage volumes utilized by Kubernetes clusters.

---

## Known issues

This section details the known issues in version 3.6.0 of IBM Spectrum Connect and its solution components, 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.

---

### Important:

- **The issues listed below apply to version 3.6.0 or earlier versions.** As long as a newer version has not yet been released, a newer release notes edition for version 3.6.0 might be issued to provide a more updated list of known issues and workarounds.
  - When a newer version is released for general availability, the release notes of version 3.6.0 will no longer be updated. Accordingly, check the release notes of the newer version to learn whether any newly discovered issues affect version 3.6.0 or whether the newer version resolves any of the issues listed below.
-



Table 4. Known issues in IBM Spectrum Connect

Ticket ID	Component	Severity	Description
SCB-86	IBM Spectrum Connect	Moderate	<p>When the XIV storage credentials are of an XIV domain administrator (supported by XIV microcode version 11.5 or later), volume mapping might return the 'LUN already in use' error message.</p> <p>This occurs if the LUN number is already associated with a volume outside of the XIV domain.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-94	IBM Spectrum Connect	Moderate	<p>Volumes that were migrated from an XIV storage array (A) to another XIV storage array (B) using Hyper-Scale Mobility (online volume migration) might not be manageable.</p> <p>This specifically occurs if the volumes on the original XIV storage array (A) are deleted from the storage array (A), and then the same volume IDs are reused on that storage array (A).</p> <p>If both XIV systems (A and B) are connected to the same Spectrum Connect and this situation occurs, it prevents the management of these volumes through Spectrum Connect.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-368	IBM Spectrum Connect	Moderate	<p>Spectrum Connect fails to lock out a storage admin user account with LDAP credentials after an unsuccessful login attempt.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-753	IBM Spectrum Connect	Moderate	<p>Upgrading Spectrum Accelerate via RESful API by a user with insufficient access level may fail. This incomplete procedure prevents further upgrade attempts, using RESTful API.</p> <p>To avoid this issue, verify that the user performing the Spectrum Accelerate upgrade has sufficient access level for completing the task.</p>
SCB-2222	IBM Spectrum Connect	Moderate	<p>Failure to resolve a DNS hostname may result in the <i>rabbitmq</i> process malfunction.</p> <p>To avoid this issue, verify that the Spectrum Connect DNS hostname can be resolved.</p>

Table 4. Known issues in IBM Spectrum Connect (continued)

<b>Ticket ID</b>	<b>Component</b>	<b>Severity</b>	<b>Description</b>
<b>SCB-4407</b>	IBM Spectrum Connect	Moderate	Thin-provisioned storage resources on IBM FlashSystem V9000 storage systems cannot be attached to Spectrum Connect services with enabled space efficiency.  Currently there is no solution or workaround for this limitation.
<b>SCB-4957</b>	IBM Spectrum Connect	Moderate	Changing user credentials for the Enabler for Containers interface does not change the authentication token, until the token is deprecated.  Currently there is no solution or workaround for this limitation.
<b>SCB-5121</b>	IBM Spectrum Connect	Moderate	LDAP configuration is excluded from the backup and restore process.  To resolve this issue, reconfigure the LDAP access after the Spectrum Connect is restored.
<b>SCB-5330</b>	IBM Spectrum Connect	Moderate	Snapshots of the volumes that were migrated, using HyperSwap <sup>®</sup> or Hyper-Scale mobility, might not appear in the vWC snapshot list.  Currently there is no solution or workaround for this limitation.
<b>SCB-5915</b>	IBM Spectrum Connect	Moderate	A storage system that lost its connectivity to a Spectrum Connect instance, cannot be removed from the web UI.  Currently there is no solution or workaround for this limitation.
<b>SCB-5927</b>	IBM Spectrum Connect	Moderate	User-defined credentials are not retained after the backup and restore procedure. A restored Spectrum Connect installation reverts to the default username and password, without informing the user.  To resolve this issue, change the default user credentials after system restore.
<b>SCB-5991</b>	IBM Spectrum Connect	Moderate	DS8000 storage systems with CKD volume aliases cannot be added to Spectrum Connect, as these volumes have no storage pools associated with them.  Currently there is no solution or workaround for this limitation.

Table 4. Known issues in IBM Spectrum Connect (continued)

Ticket ID	Component	Severity	Description
SCB-48	IBM Spectrum Connect	Service	<p>Whenever a directory-based storage admin fails to log in (from the Spectrum Connect side) to any storage array that is in use, Spectrum Connect immediately locks the storage admin user account and all storage arrays become inaccessible on the Spectrum Connect side.</p> <p>This is to prevent repeated login attempt failures after which the directory server blocks that user account.</p> <p>In such a case, update the storage admin credentials on the storage array with which the login has failed. Alternatively, you can remove that specific storage array from Spectrum Connect and then reset the credentials.</p> <p>You can find the relevant storage array by checking the events.log log file. For example:  Mar 26 13:50:01 ronend-sc1 ERROR ID:SC-0008   Severity:ERROR   Parameters:reason=Logging in to array 2810-214-MN65025 has failed with the provided credentials.  ,user_name=ronenu   Message:Storage credentials for user ronenu were disabled. Reason: Logging in to array 2810-214-MN65025 has failed with the provided credentials.</p>
SCB-85	IBM Spectrum Connect	Service	<p>Disconnected storage array disappear from the Spectrum Connect web interface after the upgrade.</p> <p>To avoid this issue, before performing upgrade, verify that all storage arrays are connected to Spectrum Connect properly.</p>
SCB-90	IBM Spectrum Connect	Service	<p>Spectrum Connect cannot use IPv6 addresses for management connection to the XIV storage systems.</p> <p>To resolve this issue, use IPv4 addressing, when configuring storage arrays.</p>
SCB-165	IBM Spectrum Connect	Service	<p>Editing the ldap.ini file manually may cause the Spectrum Connect LDAP integration failure.</p> <p>To avoid this issue, use the <b>sc_ldap</b> CLI command for LDAP configuration.</p>
SCB-188	IBM Spectrum Connect	Service	<p>A long-running RESTful API task, such as phase-in, phase-out, etc, may not update its current state, if Spectrum Connect service has been restarted during its operation.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 4. Known issues in IBM Spectrum Connect (continued)

Ticket ID	Component	Severity	Description
SCB-598	IBM Spectrum Connect	Service	<p>In some cases, the Celery service might hang when it is stopped.</p> <p>To resolve this issue, terminate the Celery background process by using the Linux <b>kill -9</b> command.</p>
SCB-1023	IBM Spectrum Connect	Service	<p>Starting from version 2.2.0, a vCO server must be added manually to the Spectrum Connect. However, if the Spectrum Connect is upgraded from any previous release to version 2.2.0 or later, a vCO server is added automatically to the GUI.</p> <p>To resolve this issue, remove the vCO server manually after the upgrade is completed.</p>
SCB-1355	IBM Spectrum Connect	Service	<p>LDAP configuration is reset after Spectrum Connect is upgraded from version 2.1.1 to version 2.2.0.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-1359	IBM Spectrum Connect	Service	<p>If a software on IBM SAN Volume Controller (SVC), which has been added to Spectrum Connect, is re-installed, the storage system still appears connected, but does not function properly.</p> <p>To avoid this issue, remove SVC from Spectrum Connect after the SVC software is re-installed and connect the storage system to Spectrum Connect again.</p>
SCB-1361	IBM Spectrum Connect	Service	<p>The user catalog on the storage systems that run Spectrum Virtualize is not updated immediately after storage system credentials are changed via the Spectrum Connect GUI.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-2495	IBM Spectrum Connect	Service	<p>Over-provisioning ratio of an XIV storage resource, attached to a service without capabilities, cannot be changed.</p> <p>To resolve this issue, change the over-provisioning ratio, using the XIV GUI, refresh the storage system in the Spectrum Connect GUI and re-attach the resource to the service.</p>
SCB-2517	IBM Spectrum Connect	Service	<p>The <i>postgresql</i> service does not start if the /tmp folder does not have <i>o+x</i> access permission.</p> <p>To resolve this issue, configure the required permission for the /tmp folder, using the <b>chmod o+x /tmp</b> command.</p>

Table 4. Known issues in IBM Spectrum Connect (continued)

Ticket ID	Component	Severity	Description
SCB-2888	IBM Spectrum Connect	Service	<p>Installation fails when the root user has a default <b>umask</b>, preventing other users from changing root-created directories.</p> <p>To avoid this issue, use the <b>mkdir /opt/ibm</b> and <b>chmod 755 /opt/ibm</b> commands to create the /opt/ibm folder and set correct permissions.</p>
SCB-5126	IBM Spectrum Connect	Service	<p>After upgrading Spectrum Connect to version 3.3.0, any LDAP user with the username consisting of capital letters becomes a local user.</p> <p>To resolve this issue, change the local user to an LDAP user after upgrading Spectrum Connect to version 3.3.0.</p>
SCB-5837	IBM Spectrum Connect	Service	<p>Spectrum Connect UI allows selecting deduplication mode of data reduction, when defining a storage service for Spectrum Accelerate Family products. However, this mode is supported by Spectrum Virtualize storage systems only.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-377	IBM Spectrum Connect	Low	<p>If the IP address of a storage array changes, the <b>sc_storage_array</b> CLI command is unable to update the IP address of the storage array.</p> <p>In such a case, use the Spectrum Connect GUI to edit and update the IP address of the storage array (In the Arrays pane, move the mouse pointer over an array that you want to update, and then click the <b>Edit</b> button).</p>
SCB-3660	IBM Spectrum Connect	Low	<p>On RHEL 7.x, due to the Django framework update, Spectrum Connect upgrade from version 3.0.3 to version 3.1.0 generates several warning messages about missing files. Despite the messages, the upgrade completes correctly.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-3845	IBM Spectrum Connect	Low	<p>Used capacity indication for storage services does not take into account the space reserved for snapshots on XIV and Spectrum Accelerate storage systems. As a result, the real free hard capacity is less than displayed in Spectrum Connect.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 4. Known issues in IBM Spectrum Connect (continued)

Ticket ID	Component	Severity	Description
SCB-4124	IBM Spectrum Connect	Low	<p>Storage resource (pool) capacity for the IBM FlashSystem A9000 and A9000R storage systems is limited to 1 PB. Any attempt to create a storage resource, exceeding 1 PB in size results in error message.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-4251	IBM Spectrum Connect	Low	<p>For Storwize V7000 Unified storage arrays, the microcode version number, build number, and system ID number are not consistent when appearing in Spectrum Connect, vSphere Web Client, and storage system management GUIs. Different version numbers and system IDs are displayed on each platform.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-4252	IBM Spectrum Connect	Low	<p>The registration of Spectrum Connect as a VASA storage provider on the vCenter server side might fail if an expired self-signed SSL certificate is present on Spectrum Connect.</p> <p>To resolve this issue, replace the self-signed certificate as explained in the user guide.</p>
SCB-4253	IBM Spectrum Connect	Low	<p>After an upgrade or reinstallation of Spectrum Connect, some DS8000<sup>®</sup> or SAN Volume Controller storage system identifiers might change, causing Spectrum Connect to stop synchronizing with these storage systems.</p> <p>To resolve this issue, use the Spectrum Connect GUI or CLI to remove and then add back these storage systems.</p>
SCB-4254	IBM Spectrum Connect	Low	<p>RESTful API may not display the correct number of storage array IP interfaces.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-5995	IBM Spectrum Connect	Low	<p>When Spectrum Virtualize action commands are based only on object names and fail to find their object IDs in the audit log, Spectrum Connect cannot create their reference configuration events.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 5. Known issues in IBM Storage Provider for VMware VASA

Ticket ID	Component	Severity	Description
SCB-1138	IBM Storage Provider for VMware VASA	Moderate	<p>A VM cannot be created on a datastore, if a size of thick-provisioned virtual disk size is bigger than any of the Spectrum Virtualize child pools comprising the vDisk.</p> <p>To avoid this issue, make sure that at least one of the child pools has sufficient disk space to host the datastore vDisk.</p>
SCB-1366	IBM Storage Provider for VMware VASA	Moderate	<p>Rescanning storage providers on VMware vCenter server results in rescan error, if two Spectrum Connect instances are registered as storage providers for VASA 1.0 and VASA 2.0.</p> <p>To avoid this issue, register all Spectrum Connect instances as storage providers for VASA 1.0 or VASA 2.0.</p>
SCB-2518	IBM Storage Provider for VMware VASA	Moderate	<p>After a VM migration from a VVol-based datastore, the datastore may become inaccessible via vWC.</p> <p>To resolve this issue, cancel registration of Spectrum Connect as a VASA storage provider, and run the registration again.</p>
SCB-2531	IBM Storage Provider for VMware VASA	Moderate	<p>When migrating a VM into a VVol-based datastore, which does not support space efficiency (thin or thick), the migration fails without a specific error message, explaining the reason for the failure.</p> <p>To avoid this issue, create a VVol-enabled storage service that supports thick and thin provisioning. Then attach storage resources which will be able to support the correct destination VVol-based destination datastore.</p>
SCB-2653	IBM Storage Provider for VMware VASA	Moderate	<p>Storage system information does not appear on the vCenter server after registering Spectrum Connect as a storage provider for the first time.</p> <p>To resolve this issue, wait for several minutes after the initial registration attempt, and run the registration again.</p>
SCB-3712	IBM Storage Provider for VMware VASA	Moderate	<p>Stretched capability of storage profile cannot be changed for virtual volumes on IBM SAN Volume Controller storage systems.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 5. Known issues in IBM Storage Provider for VMware VASA (continued)

Ticket ID	Component	Severity	Description
SCB-215	IBM Storage Provider for VMware VASA	Service	<p>If spaces are included in the IP interface name (iSCSI) of an XIV storage system, that XIV cannot be monitored by the IBM Storage Provider for VMware VASA, and information of that XIV array is not visible to the relevant vCenter server.</p> <p>To avoid this issue, do not include spaces in the IP interface name of the XIV storage system.</p>
SCB-255	IBM Storage Provider for VMware VASA	Service	<p>Cloning of a virtual machine from a VVol to another VVol on the same IBM SAN Volume Controller (SVC) fails, when the user chooses to customize the VM hardware during the cloning procedure. Moreover, resizing of the source and target VMs fails, if the SVC background copy is in progress.</p> <p>To avoid this issue, customize the virtual machine hardware only after the VM cloning and SVC background copy process are completed.</p>
SCB-523	IBM Storage Provider for VMware VASA	Service	<p>If a storage system is removed and added to Spectrum Connect after its storage resource was added to a VVol-enabled service, its previous configuration is not preserved after the addition. This occurs if Spectrum Connect is not registered as a VASA provider.</p> <p>To avoid this issue, verify that Spectrum Connect is registered as a VASA provider before adding the storage system after its removal. In addition, after the storage system is added, it is recommended to check the vCenter log whether Spectrum Connect was identified as an active VASA provider.</p>
SCB-1085	IBM Storage Provider for VMware VASA	Service	<p>When attempting to resize a virtual disk on a storage system, running Spectrum Virtualize, while the disk formatting is in progress, vCenter displays the following error message: 'The disk extend operation failed:The VVol target encountered a vendor specific error.'</p> <p>To avoid this issue, resize the virtual disk only after the disk formatting process is finished.</p>
SCB-2369	IBM Storage Provider for VMware VASA	Service	<p>A name of a VM, which is created on a VVol datastore, can have only ASCII-based characters.</p> <p>Currently there is no solution or workaround for this limitation.</p>



Table 5. Known issues in IBM Storage Provider for VMware VASA (continued)

Ticket ID	Component	Severity	Description
SCB-3063	IBM Storage Provider for VMware VASA	Service	<p>When using RESTful API to map a volume to several hosts, which do not have a common storage resource (pool), this operation may fail</p> <p>To avoid this issue, verify that all hosts to be mapped, share at least one storage resource on the same storage system.</p>
SCB-3351	IBM Storage Provider for VMware VASA	Service	<p>Resizing a VM based on an IBM SAN Volume Controller stretched cluster can fail, if the two copies of the virtual volume are not synchronized.</p> <p>To avoid this issue, wait for the synchronization to complete on storage system side. You can use the SVC <code>lsvdisksyncprogress</code> command to monitor synchronization progress.</p>
SCB-3463	IBM Storage Provider for VMware VASA	Service	<p>The Edit Settings operation for a VVol-based VM fails, if a storage resource used by the VM datastore has less free space than the VVol data disk of VM.</p> <p>To avoid this issue, make sure that the storage resource for the VM datastore has sufficient free space to accommodate the VVol data disk.</p>
SCB-4147	IBM Storage Provider for VMware VASA	Service	<p>A storage resource can be added to a storage system, which supports encryption, for a storage service with enabled encryption, even if the encryption functionality is disabled on the storage system itself.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-5586	IBM Storage Provider for VMware VASA	Service	<p>In deployments with more than one or two vCenter servers and two storage providers with different priorities, a suspended and reactivated vCenter server fails to rescan the providers. As a result, the storage providers remain inactive.</p> <p>To resolve this issue, disconnect the inactive storage providers and connect them again to the vCenter server(s).</p>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client

Ticket ID	Component	Severity	Description
SCB-417	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>The <b>Manage &gt; Host Mapping</b> tab of the <b>IBM Storage Volume</b> object shows incorrect mapping information. Hosts that cannot access the datastore are shown as not being mapped to the LUN.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client (continued)

Ticket ID	Component	Severity	Description
SCB-447	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>When using the storage system management GUI (as opposed to the IBM Storage Enhancements GUI in vSphere Web Client) to map a single volume to more than one ESXi hosts using different LUN IDs, the volume is not properly recognized by vSphere Web Client and cannot be managed by the IBM Storage Enhancements. In addition, multiple errors might occur on the vSphere Web Client during the use or modification of that volume.</p> <p>To avoid this issue, <b>always use the same LUN ID</b> when mapping a volume to multiple ESXi hosts via the storage system management GUI.</p>
SCB-3654	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>When a vCenter user without storage management privileges adds a vCenter interface to Spectrum Connect and then modifies the vCenter with the administrator credentials, logs into vSphere Web client and performs volume operations, some of these operations may fail.</p> <p>To resolve this issue, remove the vCenter interface from Spectrum Connect, and add the vCenter again, using valid administrator credentials.</p>
SCB-3759	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>After VMware vCenter reboot or upgrade, the changes made for the vCenter before the reboot or upgrade fail to propagate to the IBM extension for vCenter.</p> <p>To resolve this issue, restart the refresh vWC service by logging into the Spectrum Connect host as root and running the <code>/etc/init.d/ibm_spectrum_control restart_vwc_refresh</code>.</p>
SCB-4184	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>Removing a vCenter interface from Spectrum Connect may cause unstable behavior of the vWC plug-in.</p> <p>To resolve this issue, perform one of the following procedures, depending on the Spectrum Connect and vCenter deployment scenarios:</p> <ul style="list-style-type: none"> <li>• If you remove a vCenter interface from Spectrum Connect, restart the vSphere Web Client, before reconnecting the vCenter interface to the Spectrum Connect instance.</li> <li>• If you uninstall Spectrum Connect, wait until the uninstallation process is completed, and then restart each vCenter server that was connected to Spectrum Connect at the time of uninstall.</li> <li>• If you upgrade Spectrum Connect, wait until the upgrade process is completed, and then restart all vSphere vWCs attached to the upgraded Spectrum Connect server.</li> </ul>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client (continued)

Ticket ID	Component	Severity	Description
SCB-4193	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>When provisioning a new volume using vSphere Web Client, the Max Provision Size of the new volume is permanently set to 0. This results in volume creation failure.</p> <p>To avoid this issue, connect all vCenter servers in the SSO to the same Spectrum Connect instance.</p>
SCB-5356	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>After upgrade to version 3.4.0, in rare cases, Spectrum Connect might lose connection with the vWC plug-in.</p> <p>To resolve this issue, restart the web plug-in service on the relevant vCenter server.</p>
SCB-5841	IBM Storage Enhancements for VMware vSphere Web Client	Moderate	<p>A volume cannot be resized via vSphere Web Client.</p> <p>To resolve this issue, resize the volume using the storage system web-based user interface or CLI.</p>
SCB-154	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>If a vCenter server is disconnected from Spectrum Connect during the upgrade, the vWC extension appears with the previous version, when the vCenter server is re-activated.</p> <p>To resolve this issue, remove and reattach the vCenter server on Spectrum Connect.</p>
SCB-399	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>If a volume is deleted, using vSphere Web Client, but the deletion fails on the storage system, the volume is removed from the vSphere Web Client display. In this case, the volume is successfully unmapped from the host, but there is no indication on the vSphere Web Client that the volume still exists.</p> <p>To avoid this issue, delete the volume from the storage system directly.</p>
SCB-671	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>vWC volume creation and mapping task may fail, if a source pool that exists on an XIV storage system within a domain, has been attached to service created by the default Spectrum Control user.</p> <p>To avoid this issue, associate the default Spectrum Connect user with the storage array domain.</p>
SCB-701	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>A volume being moved between two XIV storage systems using IBM Hyper-Scale Mobility, cannot be unmapped in vWC from the ESXi host after the source storage system enters the proxy mode.</p> <p>To resolve this issue, remove volume mapping using the XIV GUI.</p>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client (continued)

Ticket ID	Component	Severity	Description
SCB-775	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>Creating a volume with minimum size (87 GB) on <b>XIV, Spectrum Accelerate</b> or <b>FlashSystem A9000/9000R</b> may fail, if the target pool size is smaller than 103 GB.</p> <p>To avoid this situation, increase the storage pool size to be 103 GB or bigger.</p>
SCB-2479	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>Creating and mapping a volume on a Spectrum Accelerate Family product via the vWC plug-in may fail if a storage resource is connected to a host outside of a storage system domain.</p> <p>To avoid this situation, verify that all the hosts defined on the vCenter are also defined on the storage systems and are associated with the domain. In addition, make sure that the default storage credentials defined in Spectrum Connect belong to the domain as well.</p>
SCB-2519	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>Creating and mapping a volume on a Spectrum Accelerate Family product via the vWC plug-in may fail if ESXi LUNs used by the volumes do not belong to any domain, while the Spectrum Connect storage credentials are associated with a specific domain.</p> <p>To avoid this situation, verify that volumes outside of a domain are not mapped to the target host.</p>
SCB-3049	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>A connection session between Spectrum Connect and vCenter server remains open after Spectrum Connect has been restarted or the vCenter server has been removed and added again via the Spectrum Connect GUI. This results in multiple concurrent connection sessions with different IDs between the servers.</p> <p>To resolve this issue, manually remove the redundant session via the vSphere Web Client (<b>Manage &gt; Sessions &gt; Terminate Selected Sessions</b>).</p>
SCB-3456	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>Resizing a stretched volume on IBM SAN Volume Controller can fail, if the two copies of the volume are not synchronized.</p> <p>To avoid this issue, wait for the synchronization to complete on storage system side. You can use the SVC <b>lsvdisksyncprogress</b> command to monitor synchronization progress.</p>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client (continued)

Ticket ID	Component	Severity	Description
SCB-3637	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>If a volume is mapped to an ESXi 6.5 host, the size of the volume under the <b>IBM Storage Volumes</b> tab does not change after its extension.</p> <p>To resolve this issue, rescan the host manually.</p>
SCB-4525	IBM Storage Enhancements for VMware vSphere Web Client	Service	<p>Creation of several volumes and their subsequent renaming might fail in mid-process with an error, indicating insufficient memory. As a result, some of the volumes are created successfully, and some of them are not.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-705	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>A volume, whose deletion fails, disappears from the volume list. The volume reappears in the list after the next population.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-836	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>If a combination of both iSCSI and FC initiator port types is defined for an ESXi host, mapping volumes to that ESXi host causes both iSCSI and FC to be used for those volumes.</p> <p>To avoid this situation, use the storage system management tools to define only one active protocol type (iSCSI or FC) for the initiators of each ESXi host.</p>
SCB-838	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>If a volume is mapped to two or more ESXi hosts that are managed by more than one vCenter server, volume operations fail.</p> <p>To avoid this issue, do not map a specific volume to ESXi hosts that are not managed by the same vCenter server.</p>
SCB-2488	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>When provisioning a volume on storage service for XIV storage systems with enabled compression, the provisioning fails, if the volume size is below 51 GB. The generated error message is not sufficiently clear.</p> <p>To avoid this issue, a size of a volume, provisioned on a storage service with enabled compression, must be larger than 51 GB.</p>
SCB-2718	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>When delegating a single VVol-type service to several vCenter servers, the service VVols will be exposed to all servers, even though they relate to only one of them.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 6. Known issues in IBM Storage Enhancements for VMware vSphere Web Client (continued)

Ticket ID	Component	Severity	Description
SCB-2970	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>Actions are allowed on volumes that are mapped to a disconnected or non-responsive ESXi host. The volume actions will fail due to the host status. Moreover, if the disconnected host is added to another vCenter server, the volume operations will fail on the new server as well.</p> <p>To avoid this situation, verify that the host is connected to the vCenter server. If a disconnected or non-responsive host is connected to a new server, remove it from the original server to allow proper volume performance.</p>
SCB-2974	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>When a LUN is shared between several ESXi hosts, its number must be the same on all hosts.</p> <p>To avoid this situation, verify that the shared LUN number is available for all hosts.</p>
SCB-2991	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>If a volume is shared between several datacenters, volume-related objects, such as a datastore or a VM that belong to other datacenters, are missing from the vWC.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-2999	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>When a disk is removed from a VM created on a VVol-based datastore, but not removed from the datastore, the VM is still listed as a related object on the VVol.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-3014	IBM Storage Enhancements for VMware vSphere Web Client	Low	<p>There is no indication of storage objects that exist on a storage system outside of a domain available for a user certain storage credentials. As a result, such vWC actions as creating and mapping a volume fail if a volume with the same name already exists on a storage system.</p> <p>To avoid this situation, verify that a new volume name is unique on the current storage system. In addition, make sure that ESXi hosts are not mapped to the volumes outside of the user domain.</p>

Table 7. Known issues in IBM Storage Plug-in for VMware vRealize Orchestrator

Ticket ID	Component	Severity	Description
SCB-140	IBM Storage Plug-in for VMware vRealize Orchestrator	Moderate	<p>If the <b>Map</b> workflow uses initiators that are not configured on the storage array, the workflow succeeds even though the initiators are silently ignored.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-141	IBM Storage Plug-in for VMware vRealize Orchestrator	Low	<p>Due to a known issue in VMware vRealize Orchestrator, title texts are displayed improperly after clicking the <b>IBM Storage</b> tab.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 8. Known issues in IBM Storage Management Pack for VMware vRealize Operations Manager

Ticket ID	Component	Severity	Description
SCB-796	IBM Storage Management Pack for VMware vRealize Operations Manager	Moderate	<p>When data collection interval is set to 1 minute, the array IOPS statistics are presented as 0.</p> <p>Currently there is no solution or workaround for this limitation.</p>
SCB-845	IBM Storage Management Pack for VMware vRealize Operations Manager	Moderate	<p>If the vROps server becomes unreachable while Spectrum Connect is still reporting to it, the reporting ceases when the vROps server becomes reachable again.</p> <p>To resolve this issue, restart the Spectrum Connect service.</p>
SCB-841	IBM Storage Management Pack for VMware vRealize Operations Manager	Service	<p>The thresholds reported to the vROps server are tailored for XIV microcode version 11.2 or later, but not for earlier XIV microcode versions.</p> <p>To resolve this issue, manually update to the thresholds in vROps to match the XIV microcode that you are using.</p>
SCB-842	IBM Storage Management Pack for VMware vRealize Operations Manager	Service	<p>Duplicate thresholds might appear in vROps if a vROps server was removed from Spectrum Connect and then re-added.</p> <p>To resolve this issue, delete the duplicate thresholds.</p>
SCB-6171	IBM Storage Management Pack for VMware vRealize Operations Manager	Service	<p>Incorrect compliance information for Spectrum Virtualize objects is presented in vROps 7.0.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 8. Known issues in IBM Storage Management Pack for VMware vRealize Operations Manager (continued)

Ticket ID	Component	Severity	Description
SCB-844	IBM Storage Management Pack for VMware vRealize Operations Manager	Low	<p>If a storage object name contains spaces, it is displayed in the vROps custom view with underlines instead of spaces.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Table 9. Known issues in IBM Storage Enabler for Containers

Ticket ID	Component	Severity	Description
UB-66	IBM Storage Enabler for Containers	Moderate	<p>If a volume is renamed directly on a storage system and removed from a node, it is deleted from the Enabler for Containers database, but remains intact on the storage itself.</p> <p>To avoid this issue, do not rename volumes on a storage system, if the volumes are used by containerized applications.</p>
UB-380	IBM Storage Enabler for Containers	Moderate	<p>When creating a PVC with an underscore, <code>_</code>, in <i>pv-name</i> label, the volume is created on the storage system, but it fails to be created in the Kubernetes environment.</p> <p>To avoid this issue, do not use an underscore in a PVC <i>pv-name</i> label.</p>
UB-454	IBM Storage Enabler for Containers	Moderate	<p>Identifying incorrect IP address of the Enabler for Containers server by the FlexVolume driver might take up to 2 minutes.</p> <p>Currently there is no solution or workaround for this limitation.</p>
UB-499	IBM Storage Enabler for Containers	Moderate	<p>On the storage systems that run Spectrum Virtualize, volume operations might fail, if a Kubernetes node name starts with a number</p> <p>To avoid this issue, do not use numbers as initial symbols in Kubernetes node names.</p>
UB-579	IBM Storage Enabler for Containers	Moderate	<p>A container might remain in the <i>ContainerCreating</i> status for a long period of time. In addition, an unresponsive <i>sg_inq</i> process exists on a pod worker node and failed multipath devices are present in the system.</p> <p>To resolve this issue, terminate the unresponsive process, using the <code>-9</code> signal, or run the <b>multipath -F</b> command to clean the faulty devices, holding the process.</p>



Table 9. Known issues in IBM Storage Enabler for Containers (continued)

Ticket ID	Component	Severity	Description
UB-612	IBM Storage Enabler for Containers	Moderate	<p>PVC creation process might remain in the Pending state for more than two minutes. In addition, the following message is stored in the IBM Storage Enabler for Containers pod log No storage resource that can match the requirements found. Reason is: A volume with this name already exists. Array is: storage_system_name. Requested volume name is: volume_name..</p> <p>To resolve this issue:</p> <ul style="list-style-type: none"> <li>• Delete the pending PVC, using <b>kubect1 delete pvc PVC-&lt;ID&gt;</b> command.</li> <li>• Create a new PVC.</li> <li>• Contact your storage administrator, requesting to delete the failed PVC volume on the storage system itself. Then, refresh the storage system in the Spectrum Connect GUI.</li> </ul>
UB-1073	IBM Storage Enabler for Containers	Moderate	<p>Pod becomes unresponsive, persisting in the <i>ContainerCreating</i> status. An error indicating a failure to discover a new volume WWN, while running the <b>multipath -ll</b> command, is stored in the FlexVolume log. This log belongs to the node, where the pod was scheduled.</p> <p>To resolve this issue, restart the <i>multipathd</i> service by running the <b>service multipathd restart</b> command.</p>

Table 9. Known issues in IBM Storage Enabler for Containers (continued)

Ticket ID	Component	Severity	Description
UB-1103	IBM Storage Enabler for Containers	Moderate	<p>Installation of the IBM Storage Enabler for Containers fails on DS8000 storage systems.</p> <p>To resolve this issue, use the following procedure:</p> <ol style="list-style-type: none"> <li>1. Manually create a single storage volume with the size of 1 GiB on a DS8000 storage system.</li> <li>2. Map the volume as LUN0 to all worker nodes in the Kubernetes cluster.</li> <li>3. Log as user <i>root</i> into every worker node and scan the iSCSI bus to discover LUN0 on the host: <div data-bbox="862 632 1425 806" style="border: 1px solid black; border-radius: 10px; padding: 10px; margin: 10px 0;"> <pre>hosts=\$(ls /sys/class/fc_host/~) for i in \$hosts; do   echo "1" &gt; /sys/class/fc_host/\$i/issue_lip done rescan-scsi-bus.sh multipath</pre> </div> </li> <li>4. Verify that the LUN0 device is visible on the worker node by running <b>multipath -ll</b> command.</li> <li>5. Check that the WWN of the volume mapped in step 1 appears in the <b>multipath -ll</b> command output.</li> <li>6. Continue with installation of the IBM Storage Enabler for Containers.</li> </ol>
UB-1525	IBM Storage Enabler for Containers	Moderate	<p>Installation of Enabler for Containers on x86 or IBM System Z servers for Spectrum Virtualize storage systems in Fibre Channel environment might fail.</p> <p>To avoid this issue, create LUN0 on a storage system and map it to all worker nodes before installing IBM Storage Enabler for Containers.</p>
UB-1535	IBM Storage Enabler for Containers	Low	<p>When used on DS8000 storage systems, the Enabler for Containers service cannot be stopped via the <b>./ubiquity_cli.sh -a stop</b> command.</p> <p>Currently there is no solution or workaround for this limitation.</p>

## Related information and publications

You can find additional information and publications related to IBM Spectrum Connect on the following information sources.

- IBM Knowledge Center ([ibm.com/support/knowledgecenter](http://ibm.com/support/knowledgecenter))
- IBM DS8700 on IBM Knowledge Center ([ibm.com®/support/knowledgecenter/STUVMB](http://ibm.com®/support/knowledgecenter/STUVMB))
- IBM DS8800 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STXN8P](http://ibm.com/support/knowledgecenter/STXN8P))

- IBM DS8870 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/ST8NCA](http://ibm.com/support/knowledgecenter/ST8NCA))
- IBM FlashSystem 900 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STKMQB](http://ibm.com/support/knowledgecenter/STKMQB))
- IBM FlashSystem 9100 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STSLR9](http://ibm.com/support/knowledgecenter/STSLR9))
- IBM SAN Volume Controller on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STPVGU](http://ibm.com/support/knowledgecenter/STPVGU))
- IBM Storwize V3500 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STLM6B](http://ibm.com/support/knowledgecenter/STLM6B))
- IBM Storwize V3700 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STLM5A](http://ibm.com/support/knowledgecenter/STLM5A))
- IBM Storwize V5000 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STHGUJ](http://ibm.com/support/knowledgecenter/STHGUJ))
- IBM Storwize V7000 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/ST3FR7](http://ibm.com/support/knowledgecenter/ST3FR7))
- IBM Storwize V7000 Unified on IBM Knowledge Center ([ibm.com/support/knowledgecenter/ST5Q4U](http://ibm.com/support/knowledgecenter/ST5Q4U))
- IBM FlashSystem V9000 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STKMQV](http://ibm.com/support/knowledgecenter/STKMQV))
- IBM XIV Storage System on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STJTAG](http://ibm.com/support/knowledgecenter/STJTAG))
- IBM Spectrum Accelerate on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STZSWD](http://ibm.com/support/knowledgecenter/STZSWD))
- IBM FlashSystem A9000 on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STJKMM](http://ibm.com/support/knowledgecenter/STJKMM))
- IBM FlashSystem A9000R on IBM Knowledge Center ([ibm.com/support/knowledgecenter/STJKN5](http://ibm.com/support/knowledgecenter/STJKN5))
- IBM Cloud Private ([ibm.com/cloud/private](http://ibm.com/cloud/private))
- VMware Documentation ([vmware.com/support/pubs](http://vmware.com/support/pubs))
- VMware Product Support ([vmware.com/support](http://vmware.com/support))
- VMware Knowledge Base ([kb.vmware.com](http://kb.vmware.com))
- Microsoft PowerShell ([msdn.microsoft.com/en-us/powershell](http://msdn.microsoft.com/en-us/powershell))
- Persistent volumes on Kubernetes ([kubernetes.io/docs/concepts/storage/volumes](http://kubernetes.io/docs/concepts/storage/volumes))

---

## 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](http://ibm.com))
- IBM Support Portal website ([ibm.com/support/entry/portal/support?brandind=Hardware~System\\_Storage](http://ibm.com/support/entry/portal/support?brandind=Hardware~System_Storage))
- IBM Directory of Worldwide Contacts website ([ibm.com/planetwide](http://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](http://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](http://www.ibm.com/legal/us/en/copytrade.shtml)).

VMware, ESX, ESXi, vSphere, vCenter, and vCloud are trademarks or registered trademarks of VMware Corporation in the United States, other countries, or both.

Microsoft, Windows Server, Windows, and the Windows logo are trademarks or registered trademarks of Microsoft Corporation in the United States, other countries, or both.

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

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









Printed in USA