IBM XIV Remote Support Proxy
Version 1.3

# Installation and User's Guide

![IBM logo]

# Contents

# About this guide

This guide describes how to install, configure, and use the IBM® XIV® Storage System Remote Support Proxy to connect an XIV system to the XIV Remote Support Center.

## Who should use this guide

This guide is intended for customers who want to connect an IBM XIV Storage System to the IBM XIV Remote Support Center using the remote support proxy. To use this guide, you must be familiar with the IBM XIV Storage System and the IBM XIV Remote Support Center.

## Conventions used in this guide

These notices are used to highlight key information.

**Note:** These notices provide important tips, guidance, or advice.

**Important:** These notices provide information or advice that might help you avoid inconvenient or difficult situations.

**Attention:** These notices indicate possible damage to programs, devices, or data. An attention notice appears before the instruction or situation in which damage can occur.

## Publications and related information

Product manuals, other IBM publications, and websites contain information that relates to the IBM XIV Storage System.

To view a PDF file, you need Adobe Reader, which can be downloaded for free from the Adobe website (get.adobe.com/reader/).

### Information centers

IBM System Storage® Information Center website (publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp)

From the IBM XIV Storage System Information Center, you can browse all product documentation.

### Publications

Information that is available in the information center is also available in a set of publications, in PDF format. You can find the following PDFs in the information center on the Publications and related information web page (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/com.ibm.help.xiv.doc/xiv_pubsrelatedinfoic.html).

**IBM XIV Storage System**
- *IBM XIV Storage System Product Overview*

This document contains an overview of the IBM XIV Storage System hardware and software.

- *IBM XIV Storage System Planning Guide*

  This guide defines installation requirements for IBM XIV Storage System model A14 and model 114. It is important to ensure that you meet all requirements to guarantee a fast and reliable installation.

- *IBM XIV Storage System Application Programming Interface Reference*

  This reference assists you in developing CIM-based applications using the XIV Open API.

- *IBM XIV Storage System XCLI Reference Guide*

  This reference describes the IBM XIV command-line interface (XCLI) system and utility commands used to manage and maintain the XIV system, including the command syntax, parameter descriptions, output descriptions, and examples.

- *IBM XIV Storage System XCLI User Manual*

  This guide describes how to use the IBM XIV command-line interface (XCLI) to run XIV system and utility commands.

- *IBM XIV Storage System Safety Notices*

  This document describes all standard IBM XIV Storage System safety notices.

- *IBM XIV Storage System Remote Support Proxy Installation and User's Guide*

  This guide describes how to install, configure, and use the IBM XIV Storage System Remote Support Proxy to connect an XIV system to the XIV Remote Support Center.

**Host software solutions**

- *Host Attachment Guide*

  This guide describes how to prepare for, install, and use the IBM XIV Host Attachment Kit (HAK). The guide supports AIX, HP-UX, Linux, Solaris, and Windows. It also includes an appendix for VMware ESX and ESXi users.

- *IBM Storage Management Pack For Microsoft System Center Operations Manager User Guide*

  This guide provides installation, configuration, and usage instructions for the IBM Storage Management Pack for Microsoft System Center Operations Manager (SCOM).

- *IBM XIV Storage System Remote Mirroring for VCS Installation Guide*

  The installation guide describes how to install and configure the Veritas Cluster Server (VCS) enterprise agent for IBM XIV Remote Mirroring.

- *IBM Storage Device Driver for VMware VAAI Installation Guide*

  This guide describes how to install and configure the IBM Storage Device Driver for VMware VAAI.

- *IBM Storage Provider for VMware VASA Installation Guide*

  This guide describes how to install and configure the IBM Storage Provider for VMware VASA.

- *IBM Storage Enabler for Windows Failover Clustering User Guide*

  This guide describes the IBM Storage Enabler for Windows Failover Clustering (formerly titled 'MSCS Agent') and provides detailed instructions and best practices for using it.

- *IBM Storage Management Console for VMware vCenter User Guide*

This publication provides installation, configuration, and usage instructions for the IBM Storage Management Console for VMware vCenter.

- *IBM XIV Adapter for VMware vCenter Site Recovery Manager (SRM) Installation Guide*

  This guide describes how to prepare for, install, configure, and use the IBM XIV Adapter for VMware vCenter Site Recovery Manager.

- *IBM XIV Provider for Microsoft Windows Volume Shadow Copy Service Installation Guide*

  This guide describes how to install and configure the IBM XIV Provider for Microsoft Windows VSS.

## IBM Redbooks publications and technical papers

Various IBM Redbooks® publications, Redpapers, and white papers are available for the IBM XIV Storage System. For additional papers, see the IBM System Storage website (www.ibm.com/systems/storage/disk/xiv/).

- *IBM XIV Storage System: Architecture, Implementation, and Usage* (www.redbooks.ibm.com/abstracts/sg247659.html)

  This Redbooks publication describes the concepts, architecture, and implementation of the XIV system, which is a scalable enterprise storage system based upon a grid array of hardware components.

- *IBM XIV Storage System with the Virtual I/O Server and IBM i* (www.redbooks.ibm.com/redpieces/abstracts/redp4598.html)

  This Redbooks publication describes how you can connect the XIV system to the IBM i operating system through the Virtual I/O Server (VIOS). A connection through the VIOS is especially useful for IT centers that have many small IBM i partitions. When using the VIOS, the Fibre Channel host adapters can be installed in the VIOS and shared by many IBM i clients by using virtual connectivity to the VIOS.

- *XIV Storage System: Host Attachment and Interoperability* (www.redbooks.ibm.com/redpieces/abstracts/sg247904.html)

  This Redbooks publication describes how to attach an XIV system to various hosting operating system platforms in combination with databases and other storage-oriented application software. It also provides solutions for combining the IBM XIV Storage System with other storage platforms, host servers, or gateways.

- *IBM XIV Storage System: Copy Services and Migration* (www.redbooks.ibm.com/abstracts/sg247759.html)

  This Redbooks publication describes IBM XIV Storage System copy and migration functions for various data protection scenarios, to enhance your business continuance, data migration, and online-backup solutions. These include point-in-time copies (also known as snapshots and full volume copies) and remote-copy capabilities in synchronous or asynchronous mode. This book also describes how to integrate the snapshot function with the IBM Tivoli® FlashCopy® Manager, built-in migration capability, and migration alternatives based on the IBM SAN Volume Controller.

### Related websites

View these websites to get more information about the XIV system.

- IBM System Storage website (www.ibm.com/systems/storage/disk/xiv/)

  Use this website to learn about the XIV system, including features and hardware summary. This website also has links to white papers, Redbooks publications, and product documentation.

- IBM Support Portal website (www.ibm.com/storage/support)

  Use this website to obtain downloadable files, links to submit and track problems, and support phone numbers and contacts.

- IBM Systems Storage forum website (www.ibm.com/developerworks/forums/forum.jspa?forumID=846)

  Use this forum to share ideas with knowledgeable experts and discover how the latest IBM storage solutions can address your business challenges. Forum topics include storage management, storage virtualization, business continuity, infrastructure simplification, disk storage systems, and storage software products and solutions.

## Getting information, help, and service

If you need help, service, technical assistance, or want more information about IBM products, you can find various sources to assist you. You can view the following websites to get information about IBM products and services and to find the latest technical information and support.

- IBM website (ibm.com®)
- IBM Support Portal website (www.ibm.com/storage/support)
- IBM Directory of Worldwide Contacts website (www.ibm.com/planetwide)

## Ordering publications

The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material.

The IBM Publications Center website (www.ibm.com/shop/publications/order/) offers customized search functions to help you find the publications that you need. Some publications are available for you to view or download at no charge. You can also order publications. The publications center displays prices in your local currency.

## Sending your comments

Your feedback is important in helping to provide the most accurate and highest quality information.

### Procedure

To submit any comments about this book or any other IBM XIV Storage System documentation:

- Go to the feedback form (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/com.ibm.xiv.doc/icfeedback.htm) in the IBM System Storage information center. You can use this form to enter and submit comments.

- Send your comments by email to starpubs@us.ibm.com. Be sure to include the following information:
  - Exact publication title and version
  - Publication form number (for example, GA32-0770-00)
  - Page, table, or illustration numbers that you are commenting on
  - A detailed description of any information that needs to be changed

x

# Summary of changes

Use this information to learn about new features and enhancements in this guide.

The following list provides the current technical changes and enhancements to the IBM XIV Remote Support Proxy:

- Supports IPv6 connections between the IBM XIV Storage System and the IBM XIV Remote Support Proxy.

# Chapter 1. IBM XIV Remote Support Proxy Overview

The remote support system for the IBM System Storage requires TCP/IP communication between the XIV system and the XIV Remote Support Center. When an XIV system does not have direct access to the Internet (for example, due to a firewall), you can use the IBM XIV Remote Support Proxy to facilitate that connection.

The Remote Support Proxy is a network proxy that connects one or more XIV systems to IBM remote-support servers in the XIV Remote Support Center. The Remote Support Proxy runs as a service on a Linux system that has Internet connectivity to the XIV Remote Support Center and local network connectivity to the XIV system. The connection to the XIV Remote Support Center is initiated by the XIV system through the IBM XIV Storage Management GUI or IBM XIV command-line interface (XCLI).

Figure 1 illustrates a typical network configuration that uses the Remote Support Proxy. The communication between the XIV system and the Remote Support Proxy uses Secure Shell (SSH). The communication between the Remote Support Proxy and the XIV Remote Support Center is encrypted with an additional layer of Secure Sockets Layer (SSL).
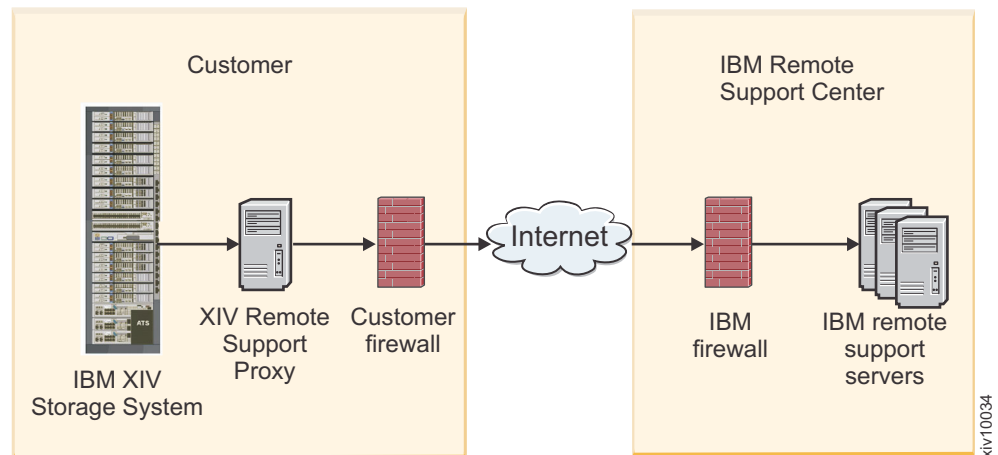
*Figure 1. Remote support components*

# Chapter 2. Installing and upgrading the Remote Support Proxy

Use this information to either install or upgrade the Remote Support Proxy.

## Software requirements

The following operating systems are supported by the Remote Support Proxy.

- Red Hat Enterprise Linux, version 6.0 or later, for x86 and x86-64 systems
- Red Hat Enterprise Linux, version 5.1 or later, for x86 and x86-64 systems
- Red Hat Enterprise Linux, version 4.6 or later, for x86 and x86-64 systems
- SUSE Linux Enterprise Server 11 or later, for x86 and x86-64 systems

## Installing and configuring the Remote Support Proxy

This information describes how to install and configure the Remote Support Proxy on a system that has access to the XIV system and the Internet.

### Procedure

Perform these steps to install and configure the Remote Support Proxy:

1. Install the Remote Support Proxy
2. Configure the Remote Support Proxy
3. Start the Remote Support Proxy
4. Configure XIV systems

### Installing the Remote Support Proxy

This information describes how to download and install the IBM System Storage Remote Support Proxy.

#### Procedure

To download and install the Remote Support Proxy, perform these steps:

1. Download the IBM XIV Remote Support Proxy installation package and *Release Notes* from the IBM Support Portal website (www.ibm.com/storage/support) website.
2. Assign the downloaded file execution permissions by running the following command:

   ```
   chmod +x file_name.bin
   ```

   Where *file_name*.bin is the name of the installation package for the appropriate platform.
3. Install the Remote Support Proxy using the following command:

   ```
   ./file_name.bin
   ```

   Where *file_name*.bin is the name of the installation package for the appropriate platform.

   A software license is displayed.
4. Follow the instructions to read through and accept the license.

The installation program installs an RPM package named `xivproxy` and then exits.

### Results

The following files are installed on the local system:

**`/usr/bin/xivproxy`**
> The binary executable file.

**`/etc/xiv/proxy.conf`**
> The configuration file. You must update this file before starting the Remote Support Proxy service.

**`/etc/init.d/xivproxy`**
> The system service for starting and stopping the Remote Support Proxy. The service is configured to start when the server boots. It does not start automatically after installation.

**`/usr/share/xiv/syslog-logger`**
> The logger program that can be modified to integrate with the existing logging and monitoring systems.

**`/usr/share/doc/xivproxy-`*version*`/license`**
> The directory containing the accepted software license for the Remote Support Proxy in multiple languages.
>
> In the directory path, *version* is the product version.

**`/usr/share/xiv/proxy_id_rsa`**
> A cryptographic file used by the configuration-retrieval function.
>
> **Important:** If a restricted user is specified by using the **User** configuration parameter, that user must be able to read this file.

**`/var/lib/xiv/proxy`**
> The directory used to store configuration updates.
>
> **Important:** If a restricted user is specified by using the **User** configuration parameter, that user must be able to write to this directory.

## Configuring the Remote Support Proxy

Configure the Remote Support Proxy before starting the Remote Support Proxy service.

### Procedure

To configure the Remote Support Proxy , edit the following parameters in the `/etc/xiv/proxy.conf` file:

**`ListenInterface`**
> The IPv4 address, IPv6 address, or interface name on which the proxy service is to listen for incoming connections from the XIV system (for example, `192.0.2.1`, `2001:DB8:0:0:0:0:0:0`, or `eth0`).
>
> If you specify an IPv4 or IPv6 address, the proxy service listens on only the specified IP address.
>
> If you specify an interface name, the proxy service listens on all allowed addresses. You can configure which addresses are allowed by setting the

**UseIPv4**, **UseIPv6**, and **UseIPv6LinkLocalAddress** parameters. By default, the proxy service listens on both IPv4 and IPv6 addresses.

If you specify the interface name, the name must be the same as the output from the **ifconfig** command.

**Important:** The XIV system must have access to the system running the Remote Support Proxy as defined by this interface name or IP address.

**ListenPort**
> The TCP port on which the Remote Support Proxy is to listen for incoming connections from the XIV system (for example, 8988).
>
> **Important:** The XIV system must have access to the system running the Remote Support Proxy as defined by this port.

**UseIPv6**
> (Optional) When an interface name is specified for the **ListenInterface** or **StatusInterface** parameter, this parameter determines whether the proxy service listens on the interfaces IPv6 addresses (for example, 2001:DB8:0:0:0:0:0:0) if they exists.
>
> This parameter has no effect if an interface does not have an IPv6 address.
>
> If **UseIPv6** is set to yes, the proxy service listens on the IPv6 address if one exists. This is the default value.
>
> To also listen on an IPv6 link-local address, **UseIPv6LinkLocalAddress** must be set to yes.
>
> If **UseIPv6** is set to no, the proxy service does not listen on any IPv6 address, including the IPv6 link-local address. In this case, the interface must have an IPv4 address defined, and **UseIPv4** cannot be set to no.
>
> **Important:** Setting **UseIPv6** to no does not affect outgoing communication from the Remote Support Proxy to the XIV Remote Support Center. This communication might still use the IPv6 protocol.

**UseIPv6LinkLocalAddress**
> (Optional) When an interface name is specified for the **ListenInterface** or **StatusInterface** parameter, this parameter determines whether the proxy server listens on the IPv6 link-local address (for example, FE80:DB8:0:0:0:0:0:0).
>
> By default, **UseIPv6LinkLocalAddress** is set to no.
>
> **Notes:**
> - If a numeric IPv6 link-local address is used in **ListenInterface** or **StatusInterface**, this parameter must be set to yes.
> - **UseIPv6LinkLocalAddress** must not be set yes when **UseIPv6** is set to no.

**UseIPv4**
> (Optional) When an interface name is specified for the **ListenInterface** or **StatusInterface** parameter, this parameter determines whether the proxy service listens on the interface's IPv4 addresses (for example, 192.0.2.1) if they exists.
>
> This parameter has no effect if an interface does not have an IPv4 address.
>
> If **UseIPv4** is set to yes, the proxy service listens on the IPv4 address if one exists. This is the default value.

If **UseIPv4** is set to `no`, the proxy service does not listen on the IPv4 address. In this case, the interface must have an IPv6 address defined, and **UseIPv6** cannot be set to `no`.

**Important:** Setting **UseIPv4** to `no` does not affect outgoing communication from the Remote Support Proxy to the XIV Remote Support Center. This communication might still use the IPv4 protocol.

**HTTPProxyHost**
> (Optional) The IPv4 address, IPv6 address, or host name of the HTTP proxy server (for example, `192.0.2.3`).
>
> If your network does not allow a direct connection to the Internet, you must use an HTTP proxy server. If so, set the **HTTPProxyHost** and **HTTPProxyPort** parameters.
>
> **Note:** The HTTP proxy must be configured to allow outgoing HTTPS connections.

**HTTPProxyPort**
> (Optional) The port of the HTTP proxy server (for example, `8080`).

**HTTPProxyUser**
> (Optional) The user ID used to authenticate to the HTTP proxy (for example, `ibm_user`).
>
> By default, the Remote Support Proxy does not use HTTP authentication. If authentication is required to access sites outside your network, set the **HTTPProxyUser** and **HTTPProxyPassword** parameters.

**HTTPProxyPassword**
> (Optional) The password used to authenticate to the HTTP proxy (for example, `passw0rd`).

**StatusInterface**
> (Optional) The IPv4 address, IPv6 address, or interface name of an additional TCP port on which the proxy service listens to monitor status (for example, `192.0.2.1`, `2001:DB8:0:0:0:0:0:0`, or `eth0`).
>
> If you specify an IPv4 or IPv6 address, the proxy service listens on only the specified IP address.
>
> If you specify an interface name, the proxy service listens on all allowed addresses. You can configure which addresses are allowed by setting the **UseIPv4**, **UseIPv6**, and **UseIPv6LinkLocalAddress** parameters. By default, the proxy service listens on both IPv4 and IPv6 addresses.
>
> When you connect to the status port (for example, by using **telnet**), the proxy service displays a status message and then closes the connection.
>
> If the **StatusInterface** and **StatusPort** parameters are not configured, the status service is disabled.
>
> When the status service is enabled, you can retrieve the status by running the **service xivproxy status** command.
>
> To enable status queries only from the local server, use the loopback interface `lo`. To enable status queries over the network, use a network interface.

**StatusPort**
> (Optional) The port number of an additional TCP port on which the Remote Support Proxy listens to monitor status (for example, `8966`).

If the **StatusInterface** and **StatusPort** parameters are not configured, the status service is disabled.

**User**

(Optional) The user name of a restricted user that is used to run the Remote Support Proxy (for example, `nobody`).

If the proxy runs as the root user, it drops its privileges to match the privileges of the specified user or to `nobody` if no user is specified. This is done after binding ports and opening the log file, in case they require root access.

**Logger**

(Optional) Location of the logger program (for example, `/usr/share/xiv/syslog-logger`).

See the contents of the `/usr/share/xiv/syslog-logger` file for more information and example code.

**Note:** The logger runs as a restricted user and not the root user.

The Remote Support Proxy runs the logger each time the XIV system connects to and disconnects from the XIV Remote Support Center, or when an error occurs. You can modify the logger program to integrate with existing logging and monitoring tools.

The logger program runs without any arguments and with the following predefined environment variables:

```
PATH=/bin:/sbin:/usr/bin:/usr/sbin
EVENT={connect|disconnect|error}
CLIENT=IP_address:port
SERVER=IP_address:port
SERVER_LIST=IP_address:port,IP_address:port,...
MESSAGE=arbitrary text message when EVENT=error
```

**SERVER_LIST** is a list of all known IBM remote-support servers at the time of the last configuration retrieval.

In the following example, the XIV system uses IP address 192.0.2.5 on port 9999, the XIV Remote Support Center uses IP addresses 195.110.41.141 and 195.110.41.142 on port 443, and the logger is called to report a successful connection:

```
PATH=/bin:/sbin:/usr/bin:/usr/sbin
EVENT=connect
CLIENT=192.0.2.5:9999
SERVER=195.110.41.141:443
SERVER_LIST=195.110.41.141:443,195.110.41.142:443
MESSAGE=
```

**LogFile**

(Optional) Location of the error log. If not set, the default location is `/var/log/xivproxy.log`.

This error log contains information about proxy service startup, shutdown, connections, and disconnections. If debugging is enabled, this file also contains the trace logs.

**DebugLog**

(Optional) A flag indicating whether debugging is enabled. Set to `yes` to enable debugging or `No` to disable debugging. The default value is `no`.

When debugging is enabled, trace logs are created. These logs are useful for troubleshooting and debugging problems.

### Example

The following example shows a sample configuration file:

```
# Interface and port on which the proxy listens
ListenInterface         eth0
ListenPort              8988

# IP address settings
UseIPv4                 yes
UseIPv6                 yes
UseIPv6LinkLocalAddress  no

# Host and port of the HTTP proxy server
HTTPProxyHost           192.0.2.3
HTTPProxyPort           8080

# User ID and password for the HTTP proxy server
HTTPProxyUser           ibm_user
HTTPProxyPassword       passw0rd

# Interface and port of status service
StatusInterface         lo
StatusPort              8966

# User ID to run the proxy
User                    nobody

# External log program (optional)
Logger                  /usr/share/xiv/syslog-logger
LogFile                 /var/log/xivproxy.log
DebugLog                no
```

## Starting the Remote Support Proxy

After updating the Remote Support Proxy configuration file, start the Remote Support Proxy service.

### Procedure

To start the Remote Support Proxy, run the following command:

```
service xivproxy start
```

If the proxy service does not start correctly, examine the log file for errors. The default log file is /var/log/xivproxy.log.

## Configuring XIV systems

After installing and configuring the Remote Support Proxy, define a new remote support connection with information about the proxy server.

### Procedure

1. Ensure that no remote support servers are configured. To list all currently configured XIV Remote Support Center servers, use the following command:

   ```
   support_center_list
   ```

2. If XIV Remote Support Center servers have been defined, delete the servers by using the following command:

   ```
   support_center_delete service_center=name
   ```

   Where *name* is the unique name of the XIV Remote Support Center server, as it appears in the Names column in the output of the **support_center_list** command.

8

3. Define a new remote support connection with the information about the proxy server by using the following command:

```
support_center_define support_center=name address=proxy_ip port=proxy_port
```

where:

**support_center**=*name*
> A unique name of the remote support server. You can use any name.

**address**=*proxy_ip*
> The IP address, in IPv4 or IPv6 format, of the server on which the Remote Support Proxy is running. The value is the same as the **ListenInterface** parameter in Remote Support Proxy configuration file (/etc/xiv/proxy.conf).

**port**=*proxy_port*
> The TCP port on which the Remote Support Proxy is to listen for incoming connections from the XIV system (for example, 8988). The value is the same as the **ListenPort** parameter in Remote Support Proxy configuration file (/etc/xiv/proxy.conf).

4. Test the connection for each XIV system when configuration is complete by connecting the XIV system to the remote support server by using the following command:

```
support_center_connect
```

5. Wait a few seconds for the connection to complete, and then check the status by using the following command:

```
support_center_status
```

6. Ensure that the connection state is reported as `idle` and not as `no connection`.

If the connection state is not `idle`, examine the log file for errors.

## Upgrading and configuring the Remote Support Proxy

This information describes how to upgrade to a newer version of the Remote Support Proxy on a system that has access to the XIV system and the Internet.

### Before you begin

If the Remote Support Proxy service is running when you start the installation, the service is stopped when the installation completes.

### Procedure

Perform these steps to upgrade and configure the Remote Support Proxy:

1. Download and install the Remote Support Proxy (see Installing the Remote Support Proxy).

   The installer recognizes the existing installation and performs an upgrade.

2. Configure the Remote Support Proxy (see "Configuring the Remote Support Proxy" on page 4).

   Review the configuration carefully to ensure that the Remote Support Proxy is correctly configured after upgrading. There are new optional parameters, and two parameters were removed: **TargetAddress** and **TargetPort**. All configuration settings are listed in "Configuring the Remote Support Proxy" on page 4.

3. Start the Remote Support Proxy by running the following command:

```
service xivproxy start
```

If the proxy service does not start correctly, examine the log file for errors. The default log file is `/var/log/xivproxy.log`.

# Chapter 3. Uninstalling the Remote Support Proxy

This information describes how to uninstall the IBM System Storage Remote Support Proxy.

## Procedure

To remove the Remote Support Proxy from the system on which it is installed, perform these steps:

1. Stop the proxy service running the following command:

   ```
   service xivproxy stop
   ```

2. Uninstall the Remote Support Proxy by running the following command:

   ```
   rpm -e xivproxy
   ```

# Chapter 4. Managing the Remote Support Proxy

This information describes how to start and stop the Remote Support Proxy and how to view connection status.

## Starting and stopping the Remote Support Proxy

After the Remote Support Proxy is installed and configured, you can start, stop, and restart the Remote Support Proxy service.

### Procedure

- To start the Remote Support Proxy, run the following command:

  ```
  service xivproxy start
  ```
- To stop the Remote Support Proxy, run the following command:

  ```
  service xivproxy stop
  ```
- To restart the Remote Support Proxy, run the following command:

  ```
  service xivproxy restart
  ```

## Monitoring status

You can monitor connection status for the Remote Support Proxy.

### Procedure

To monitor Remote Support Proxy status, run the following command:

```
service xivproxy status
```

### Results

The status command lists the following values.

**Note:** This information is displayed only if the status service is configured in the configuration file.

**Open connections**
> The number of connections that currently exist between the XIV system on the network and the XIV Remote Support Center server. These connections do not have to be in an active remote support session, but only connected to the server.

**Failed connections**
> The number of connections that failed due to an error. This number represent a cumulative count from the time the status service was started and can only increase. When the proxy service is stopped and restarted, this number resets to zero.

**Total connections**
> The total number of connection attempts that were made by the XIV system on the network, whether successful or not. This number is a cumulative count from the time the proxy service was started and can only increase. When the proxy service is stopped and restarted, this number resets to zero.

# Updating remote-support server information

The Remote Support Proxy periodically connects to the XIV Remote Support Center to retrieve configuration updates, including the current IP address and port for each IBM remote-support servers.

## About this task

No user action is required to perform this update. This retrieval is performed automatically by the Remote Support Proxy every six hours. The connection is made by using the same method (direct connection or through an HTTP proxy) that is used to create a remote-support connection to the XIV systems.

The Remote Support Proxy connects directly to the XIV Remote Support Center with no involvement from XIV systems.

The configuration updates are saved to a file in the `/var/lib/xiv/proxy` directory.

# Notices

The legal notices pertain to IBM System Storage documentation.

This information was developed for products and services offered in the U.S.A.

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*
*Armonk, NY 10504-1785*
*U.S.A.*

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.*
*1623-14, Shimotsuruma, Yamato-shi*
*Kanagawa 242-8502 Japan*

**The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:**
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 Corporation*
*Almaden Research*
*Bldg 80, D3-304, Department 277*
*650 Harry Road*
*San Jose, CA 95120-6099*
*U.S.A.*

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.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

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.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

# Trademarks

IBM, the IBM logo, and 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 Web at Copyright and trademark information website (www.ibm.com/legal/copytrade.shtml).

Adobe is a registered trademark of Adobe Systems Incorporated in the United States, and/or other countries.

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

Other company, product, and service names may be trademarks or service marks of others.

**IBM** ®

Printed in USA