IBM XIV Storage System

XCLI Utility User Manual

Version 10.2.1

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About this guide

This document describes how to use the IBM® XIV® Storage System command-line interface (XCLI) to invoke XCLI utility and system commands.

Who should use this guide

This publication is for personnel that are responsible for administering IBM XIV Storage Systems.

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.

CAUTION:
These notices indicate a situation that is potentially hazardous to people because of some existing condition or where a potentially dangerous situation might develop because of some unsafe practice.

DANGER

> **These notices indicate a situation that is potentially lethal or extremely hazardous to people. For example, after a computer side panel is removed, exposed high-voltage wires might be lethal.**

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 Acrobat Reader, which can be downloaded for free from the Adobe website (www.adobe.com/products/acrobat/readstep.html) website.

Information centers

From the IBM XIV Storage System Information Center website (publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp), 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.

IBM XIV Storage System

- *IBM XIV Storage System Product Overview* (publib.boulder.ibm.com/ infocenter/ibmxiv/r2/topic/com.ibm.help.xiv.doc/docs/GA32-0791- 02.pdf)

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

- *IBM XIV Storage System Planning Guide* (publib.boulder.ibm.com/ infocenter/ibmxiv/r2/topic/com.ibm.help.xiv.doc/docs/GA32-0770- 05.pdf)

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

- *IBM XIV Storage System Host Attachment Guides*

  These documents provide information about attaching host systems to the IBM XIV Storage System:

  - *Host System Attachment Guide for AIX* (publib.boulder.ibm.com/ infocenter/ibmxiv/r2/topic/com.ibm.help.xiv.doc/docs/hag_1_5_x/ GA32-0643-06.pdf)

  - *Host System Attachment Guide for HP-UX* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/hag_1_5_x/GA32-0645-02.pdf)

  - *Host System Attachment Guide for Linux* (publib.boulder.ibm.com/ infocenter/ibmxiv/r2/topic/com.ibm.help.xiv.doc/docs/hag_1_5_x/ GA32-0647-02.pdf)

  - *Host System Attachment Guide for Solaris* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/hag_1_5_x/GA32-0649-02.pdf)

  - *Host System Attachment Guide for Windows* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/hag_1_5_x/GA32-0652-03.pdf)

  - *Host System Attachment Guide for VMware* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/ Host_System_Attachment_Guide_for_VMWare2.pdf)

- *IBM XIV Storage System XCLI Reference Guide* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/GC27-2213-10.pdf), GC27-2213

  This document 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*
  (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/GA32-0638-03.pdf), GA32-0638

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

VSS Provider - Xprov

- *IBM XIV Storage System VSS Provider - Xprov Release Notes*
  (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/xProv_2_2_4.pdf)

  This document describes the supported environment, new features,
  known issues, and installation information.

Remote Mirroring for VCS Cluster

- *IBM XIV Storage System Remote Mirroring for VCS Installation Guide*
  (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/
  IBM_XIV_Remote_Mirroring_Agent_for_VCS_2.1.0_Installation_Guide.pdf)

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

- *IBM XIV Storage System Remote Mirroring for VCS Release Notes for
  Windows* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/
  IBM_XIV_Remote_Mirroring_Agent_for_VCS_2.1.0_Release_Notes_for_Windows.pdf)

  This document describes the supported environment, new features, fixes,
  and known issues.

- *IBM XIV Storage System Remote Mirroring for VCS Release Notes for
  Solaris* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/
  IBM_XIV_Remote_Mirroring_Agent_for_VCS_2.1.0_Release_Notes_for_Solaris.pdf)

  This document describes the supported environment, new features, fixes,
  and known issues.

MPIO Management Console

- *IBM XIV Storage System MPIO Management Console User's Guide*
  (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/GA32-0795.pdf), GA32-0746

  This guide discusses the IBM XIV MPIO Management Console
  application, which provides monitoring and management capabilities to
  the multipath subsystems of the IBM XIV Storage System.

Remote Support Proxy

- *IBM XIV Storage System Remote Support Proxy Installation and User's
  Guide* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/
  com.ibm.help.xiv.doc/docs/GA32-0795.pdf), GA32-0795

  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.

Management Console for VMware vCenter

- *IBM XIV Storage System Management Console for VMware vCenter User's Guide* (publib.boulder.ibm.com/infocenter/ibmxiv/r2/topic/ com.ibm.help.xiv.doc/docs/ IBM_XIV_MNG_Console_2.0.0_for_VMware_vCenter_User_Guide.pdf), GA32-0820

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

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

- *IBM XIV Storage System: Architecture, Implementation, and Usage* (www.redbooks.ibm.com/abstracts/sg247659.html?Open&cm_sp=MTE10970)

  This Redbooks publication describes the concepts, architecture, and implementation of the XIV system, which is designed to be 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/abstracts/redp4598.html?Open&cm_sp=MTE11087)

  This Redbooks publication discusses and explains 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 using virtual connectivity to the VIOS.

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

  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?Open)

  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 discusses 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 (SVC).

Related websites

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

- IBM XIV Storage System 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 (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 just want more information about IBM products, you can find a variety of 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 (www.ibm.com/storage/support)
- IBM Directory of Worldwide Contacts website (www.ibm.com/planetwide)

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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 XIV Storage System 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 should be changed

Chapter 1. Overview of the IBM XIV Storage System command-line interface

The IBM XIV Storage System command-line interface (XCLI) provides a mechanism for issuing commands to manage and maintain the XIV systems. XCLI commands are entered on an XCLI client system (or *XCLI client*) supplied by the customer.

Some XCLI commands run directly on the XCLI client. But usually, XCLI commands are sent by the XCLI client to the XIV system for processing.
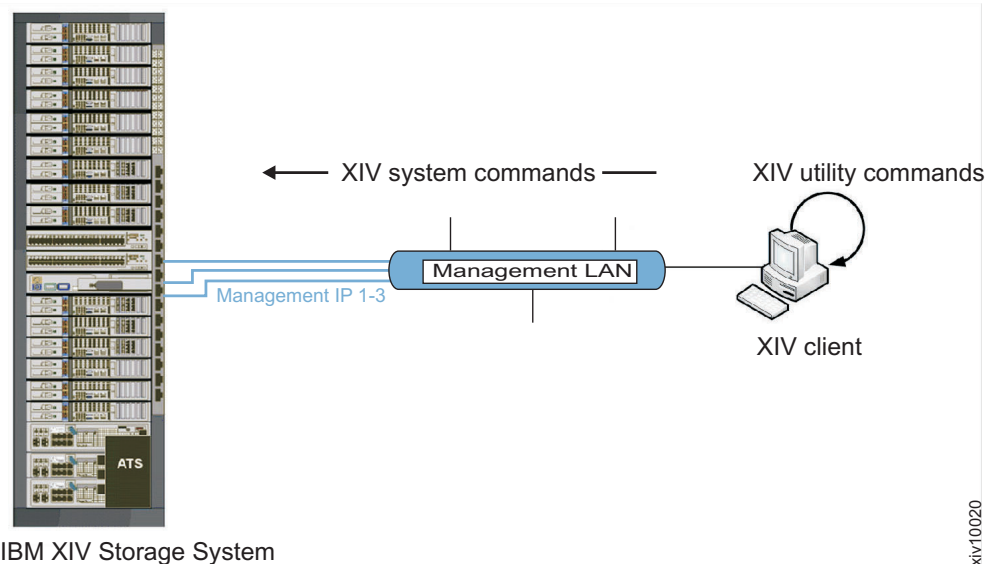
Figure 1. XCLI commands running on the IBM XIV Storage System

The XCLI relies on code running in two places: the XCLI client system and the XIV system. A single XCLI client system usually supports multiple XIV systems, and these XIV systems can be running different microcode versions. The XCLI client code version is independent of the version of microcode firmware that is running on the XIV system. When you receive a new version of IBM XIV microcode that supports additional XCLI system commands, you do not need to update the XCLI code running on the XCLI client system to use the new commands.

Communication between the XCLI client and the XIV system

The XCLI client and the XIV system communicate using Secure Sockets Layer (SSL) over TCP/IP. Each XIV system has three Ethernet ports used as management interfaces, and each XIV system can be assigned up to three IP addresses – one per management interface. Having three management interfaces provides redundancy so that management interface communication can continue on a different port and IP address if one of the ports or the customer Ethernet network fails. When running a command, the XCLI client receives these three IP addresses and tries each of them until communication with one of the IP addresses is successful.

Interactive and basic modes

You can use the IBM XIV Storage System command-line interface (XCLI) in two modes: interactive and basic.

The differences between these two modes are as follows:

- Basic mode requires you to log in to an XIV system each time that you issue a command, but the interactive mode requires you to log in only once.
- In basic mode, you must enter the entire XCLI command syntax. In interactive mode, you can enter a shorter syntax.
- Interactive mode offers several command and argument completion features.

The following example shows the command syntax for each of these modes:

Basic `xcli -u user -p password -m 127.0.0.1 vol_list`

Interactive
`vol_list`

Note: Each of the batch-mode parameters in these examples is explained later in this manual.

Chapter 2. Getting started with XCLI

This information gets you started with the IBM XIV Storage System command-line interface (XCLI), including how to install and start the XCLI. It also provides information about interactive and basic modes for running commands in the XCLI and an overview of the XCLI command structure and parameters.

Installing the XCLI

This information describes how to download and install the IBM XIV Storage System command-line interface (XCLI) on the XCLI client system. The XCLI is available on Microsoft Windows, Linux and other operating systems.

About this task

Note: For the installation requirements and a list of available packages, see the *XCLI Release Notes* on the IBM Support Portal (www.ibm.com/storage/support) website.

Procedure

Perform these steps to download and install the XCLI:

1. Download the IBM XIV Management Tools installation package and *Release Notes* from the IBM Support Portal (www.ibm.com/storage/support) website.
2. Perform one of the following procedures for your operating system.
   - **Windows:** Double-click the installation file, and follow the instructions on the screen.

     On the Select Components page in the installation wizard, you can choose which XIV management tools to install:

     Full installation
     > Installs the IBM XIV Storage Management GUI, IBM XIV online monitoring tool (XIVTop) and IBM XIV command-line interface (XCLI).

     CLI installation
     > Installs only the XCLI.
   - **Linux:** Extract the installation file to a designated folder on your system, using the following command:

     `tar -xzf file_name.tar`
   - **AIX®, HP-UX, Solaris:** Extract the installation file using the following command:

     `gunzip file_name.tar.gz`

     Then, extract the file to a designated folder on your system, using the following command:

     `tar -xvf file_name.tar`

     Tip: You can download the GNU Unzip utility (**gunzip**) from the GZIP home page Web site at www.gzip.org/.
3. Optional: Add the installation directory to your PATH environment variable.
4. Start the XCLI.

Starting the XCLI

You start the XCLI in different ways depending on the hosting operating system and operational mode. This information describes how to start the XCLI on Windows and Linux hosts in both interactive and basic modes.

Starting the XCLI on a Windows system

You can start the XCLI on a Windows system in either interactive or basic mode.

Interactive mode
About this task

To run commands in interactive mode, perform the following steps:

Procedure
1. Click **Start** > **Programs** > **XIV** > **XCLI** to open an XCLI session window.
2. Follow the instructions on the screen and type the following information:
   a. User name
   b. Password
   c. XIV system IP address or DNS

   You are now connected to the specified XIV system. The XCLI prompt appears in the session window. The window title includes the name of XIV system to which the XCLI is connected.

```
XCLI Session - MN00026                              _ □ ×
User Name: admin
Password: **********
Machine IP/Hostname: MN00026
connecting.
>>
```
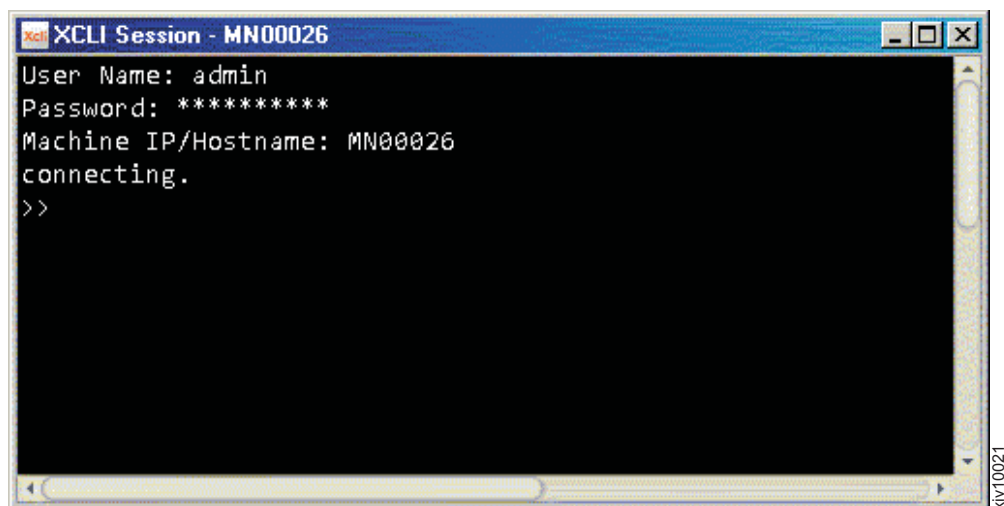
Figure 2. XCLI prompt on Windows

3. Run any XCLI command from this prompt (for example, you can run the **vol_list** command to list volumes).

Basic mode
About this task

To run commands in basic mode, perform the following steps:

Procedure
1. Open a Windows command session.
2. Type `c:\program files\xiv`.

3. Run any XCLI command, including the XCLI identification parameters, for example:

```
xcli -u user -p ******** -m 127.0.0.1 vol_list
```

Starting the XCLI on a Linux system

You can start the XCLI on a Linux system in either interactive or basic mode.

Interactive mode
About this task

To run commands in interactive mode, perform the following steps:

Procedure
1. Type xcli -w to open a new session.
2. Follow the instructions on the screen and type the following information:
   a. User name
   b. Password
   c. XIV system IP address or DNS
3. You are now connected to the specified XIV system. The XCLI prompt appears in the session window. You can run any XCLI command from this prompt (for example, you can run the **vol_list** command to list volumes).

Basic mode
About this task

To run commands in basic mode, enter the command including the XCLI identification parameters, for example:

```
xcli -u user -p ******** -m 127.0.0.1 vol_list
```

Exiting an interactive XCLI session

When running the IBM XIV Storage System command-line interface (XCLI) in interactive mode, you can exit the interactive session by either closing the session window or running the **exit** command.

Interactive mode features

Running XCLI commands in interactive mode provides command and argument completion, along with possible values to these arguments.

Interactive mode

To run a command in interactive mode, type the command. For example, the following command lists storage pools.

```
pool_list
```

Command-name completion

The XCLI can list commands that start with one or more characters. To list commands, type one or more characters and press Tab.
- This example lists all commands that start with the letter **v**:

```
>> v
version_get       vol_by_id         vol_copy          vol_create
vol_delete        vol_format        vol_list          vol_lock
vol_mapping_list  vol_move          vol_rename        vol_resize
vol_unlock        vpd_config_get    vpd_config_set
```

- This example lists all commands that start with the letters **cg_**:

```
>> cg_
cg_add_vol        cg_create         cg_delete         cg_list
cg_move           cg_remove_vol     cg_rename         cg_snapshots_create
```

Command-argument completion

The XCLI can provide list arguments and argument values to help you complete a command. To list arguments for a specific command, type the command name and press Tab. To list values for a specific argument, type the command name and argument, optionally specify one or more characters for the value, and then press Tab.

- **Listing arguments for a command**

  This example lists arguments for the **vol_create** command:

  ```
  >> vol_create
  vol=    size=   size_block=   pool=
  ```

- **Listing values for a specific argument**

  This example lists valid values for the **pool** argument that is required for the **pool_create** command:

  ```
  >> pool_create pool=
  8058  2nd Pool  8059  pool1
  ```

- **Listing a subet of values for a specific argument**

  This example lists valid values that start with v for the **vol** argument that is required for the **vol_list** command:

  ```
  >> vol_list vol=v
  vol1  vol2
  ```

Understanding the command syntax

This information describes the general syntax for the XCLI command.

The XCLI uses the following general syntax:

```
xcli < <[ --file=FILE ] -c CONFIG|-m IP1 [-m IP2 [-m IP3]] >
-L|-a <config> -m IP1 [-m IP2 [ -m IP3]]|-d IP1 [-m IP2 [ -m IP3]] >|
[ -r ]
[ <-l | --list> | <-s | --csv> | <-x | --xml> ]
[ <-u | --user> user ]
[ <-p | --password> password ]
[-t [--fields=field1,field2,...]]
[command]
```

The parameters and options are described later in this document.

Command syntax quick reference

This information describes the command parameters and options that are available in the XCLI.

Use the following table as a quick reference to the various parameters and options.

Options	Values
-f	Specifies the name of a configuration file that lists the XIV system
-c	Specifies the XIV system on which the command is to be run
-m	Specifies the IP address of the XIV system on which the command runs
-L	Lists the XIV systems, as read from the configuration file
-a	Specifies the name of the XIV system to add to the configuration file
-d	Removes an XIV system from the configuration file
-r	Specifies the name of a batch file that runs XCLI commands
-l	Displays the command output in user-readable format
-s	Displays the command output in CSV format
-x	Displays the command output in XML format
-u	Specifies the user
-p	Specifies the password
-t	Manages the fields of the command output
-h	Displays command help
-y	Suppresses the Are you sure? prompt
-v	Displays the version of the XCLI on the screen
command	Runs the specified command

Syntax example

The XCLI command syntax specifies the command to be run, along with its applicable parameters and their values.

In the following example, the parameters to the left of the **vol_list** command specify the IBM XIV Storage System to which the command is being directed, and also specify the required user and password for this XIV system:

```
xcli -u admin -p ********** -m 127.0.0.1 vol_list
```

Identification parameters

> **-u** Specifies the user ID.

> **-p** Specifies the password.

XIV system
> The XIV system is specified by either its IP address or name of the XIV system as listed in the configuration file. See "Configuration parameters" on page 10 for more information.

> **-m** Specifies the IP address of the XIV system to which this command is directed.

> **-c** Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, my_system).

Command

> **vol_list**
> > Specifies the command to be run. For more information about running commands, see"Interactive mode features" on page 5.

Chapter 3. Using the XCLI

This information describes each XCLI command parameter.

Using identification parameters

This information describes parameters used to set the user, password, and XIV system.

User and password parameters

The XCLI and the IBM XIV Storage System provide a password-controlled user ID as a security mechanism for controlling XCLI operations.

When running in basic mode, specify the user name and password as follows:

```
xcli -u admin -p ********** -c my_system vol_list
```

In this command:

Identification parameters

> **-u** Specifies the user ID.
>
> **-p** Specifies the password.

XIV system

> **-c** Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, `my_system`).

Command

> **vol_list**
> Specifies the command to be run. For more information about running commands, see "Interactive mode features" on page 5.

The password handling mechanism performs as follows:

1. Checking the user:
   - The **-u** or **--user** parameter on the command line is checked first and its value is used as the user name.
   - If the **-u** or **--user** parameter is not specified, the `XIV_XCLIUSER` environment variable is used as a user name.
2. Checking the password:
   - The **-p** or **--password** parameter on the command line is checked first and its value is used as the password.
   - If the **-p** or **--password** parameter is not specified, the `XIV_XCLIPASSWORD` environment variable is used as the password.

Note: If you do not specify both the user ID and the password, the command fails.

Defining XCLI configurations

This information describes the parameters used to identify the XIV system on which a command is to run and how to create a configuration file to manage the XIV systems that you can use.

Configuration parameters

Most XCLI commands are directed to a specific XIV system using the IP address. You must provide at least one address and up to three addresses per XIV system.

To provide the XIV system IP address, log in to an interactive session or specify the configuration file that stores the XIV system IP address or addresses.

Specifying an XIV system using its IP address

In the following example, the command is directed to an XIV system with an IP address of 127.0.0.1:

```
xcli -u admin -p ********** -m 127.0.0.1 vol_list
```

In this command:

Identification parameters

-u Specifies the user ID.

-p Specifies the password.

XIV system

The XIV system is specified by its IP address.

-m Specifies the IP address of the XIV system to which this command is directed.

Command

vol_list
Specifies the command to be run. For more information about running commands, see "Interactive mode features" on page 5.

Specifying an XIV system by using a configuration file

In the following example, the command is directed to an XIV system that is listed on the my_system configuration file:

```
xcli -u admin -p ********** -c my_system vol_list
```

In this command:

Identification parameters

-u Specifies the user ID.

-p Specifies the password.

XIV system

The XIV system is specified by its name on the configuration file.

-c Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, my_system).

Command

vol_list
Specifies the command to be run. For more information about running commands, see"Interactive mode features" on page 5.

Creating a configuration file

You can use the configuration file to manage a list of the XIV systems that you are working with.

Use the following options to add and subtract XIV systems from this file and to list them.

Listing the available XIV systems
In the following example, the configuration information is read from a default file location or from the file that is specified with [-f *file*].

```
xcli [-f file] -L
```

Adding a new XIV system to the configuration file
In the following example, IP1...IP3 are added to the configuration file at the default file location. If applicable, the addresses are added to the file that is specified in [-f *file*]. The *<config>* variable represents the configuration name of the XIV system that you are adding to the list.

```
xcli [-f file] -a <config> -m IP1 [-m IP2 [ -m IP3]]
```

Removing an XIV system from the configuration file
In the following example, IP1...IP3 are removed from the configuration file. If applicable, the addresses are removed from the file that is specified with [-f *file*].

```
xcli [-f file] -d IP1 [-m IP2 [ -m IP3]]
```

Location of the configuration file

The configuration file is located in the following directory, depending on the operating system. You do not specify the location of the configuration file when you add or remove XIV systems from the configuration.

Windows
```
\Application Data\XIV\GUI10\properties
```

UNIX   In the home folder under `.xiv`

Display options

This information describes the formats that you can choose to display the command output.

Using display options

Output from an XCLI command can be displayed in a list, comma-separated value (CSV) and XML formats. You can specify only one format. If you do not specify the format, the output defaults to a list. The display options are:

-l   Displays command output in a list (also known as user-readable format).

-s   Displays command output in CSV format.

-x   Displays command output in XML format.

Use the display options as follows:

Interactive mode
```
vol_list -s
```

Basic mode
```
xcli -u user -p ********** -m 127.0.0.1 -s vol_list
```

In this command:

Identification parameters

-u   Specifies the user ID.

-p   Specifies the password.

XIV system
The XIV system is specified by either its IP address or name of the XIV system as listed in the configuration file. See "Configuration parameters" on page 10 for more information.

-**m** Specifies the IP address of the XIV system to which this command is directed.

-**c** Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, `my_system`).

Display option

-**s** Displays command output in CSV format.

Command

vol_list
Specifies the command to be run. For more information about running commands, see "Interactive mode features" on page 5.

Table display options

The list option displays the command output in a user-readable format. When running a command with a list option, you can specify which table columns are displayed on the screen.

Determine the way that the table is displayed as follows:

Interactive mode
`vol_list -t "size"`

Single-command mode
`xcli -u admin -p ********** -m 127.0.0.1 vol_list -t "size"`

In this command:

Identification parameters

-**u** Specifies the user ID.

-**p** Specifies the password.

XIV system
The XIV system is specified by either its IP address or name of the XIV system as listed in the configuration file. See "Configuration parameters" on page 10 for more information.

-**m** Specifies the IP address of the XIV system to which this command is directed.

-**c** Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, `my_system`).

Table display option

-**t "size"**
Specifies the one or more columns that are to be displayed. In this example, only the Size column is displayed. You can list any combination of the table columns.

Command

> **vol_list**
>
> > Specifies the command to be run. For more information about running commands, see"Interactive mode features" on page 5.

Viewing the available columns

You can view all of the available table's columns by running: `help command=<command_name> format=full`.

The result provides information about the command, including a list of all of its fields. For example, the available fields for the **vol_list** command are: name, size, master_name, cg_name, pool_name, creator, used_capacity, used_capacity_MiB, snapshot_time_on_master, serial, wwn, capacity, mirrored, sg_name, snapshot_time, sg_snapshot_of, locked_by_pool, size_MiB, locked, snapshot_of, modified, delete_priority.

Running commands in batch mode

XCLI commands can be grouped together and run in a batch. For example, you can use batch mode to run an identical set of commands on multiple IBM XIV Storage Systems.

Creating a batch file for the commands

Create a text file and write the commands without the **xcli** prefix or XCLI parameters. For example:

```
pool_create pool=pool_00001 hard_size=171 soft_size=171 snapshot_size=65
vol_create vol=vol_00010 size=17 pool=pool_00001
vol_list vol=vol_00010
```

This example contains the following commands:
- The **pool_create** command, along with its arguments. This command creates a storage pool, which is a prerequisite for creating a volume.
- The **vol_create** command, along with its arguments. This command creates a volume in the pool that has just been created.
- The **vol_list** command displays the details of the newly created volume.

Name the script file and save it.

Running a batch file

To run the batch file, you must specify the XCLI parameters:

```
xcli -u admin -p ********** -m 127.0.0.1 -r
"C:\Documents and Settings\avia\xcli\xcli_script.txt"
```

In this command:

Identification parameters

> **-u** Specifies the user ID.
>
> **-p** Specifies the password.

XIV system

> The XIV system is specified by either its IP address or name of XIV system as listed in the configuration file. See "Configuration parameters" on page 10 for more information.

> **-m**   Specifies the IP address of the XIV system to which this command is directed.
>
> **-c**   Specifies the name of the XIV system to which this command is directed, as it is defined in the configuration file (for example, `my_system`).

The batch parameter

> **-r**   Specifies the name of the batch file to run on the XIV system.

Viewing the output

The three commands in the previous example create a pool, then create a volume, then display the volume details. The following output is returned from running these three commands in batch mode:

- Confirmation that a pool was created
- Confirmation that a volume was created
- Table with the details of the newly created volume

Failure of batch mode

When one of the commands that run in batch mode fails, the following actions occur:

1. The script exits immediately.
2. No commands after the failing command are run.
3. An error message is displayed identifying the XCLI command that failed.

Displaying XCLI help and version

This information describes how to display help for the XCLI command and the version of the XCLI code that is running on the XCLI client.

About this task

The following command prints the help text for the XCLI in batch mode:
```
xcli <-h | --help>
```

The following command prints the XCLI version:
```
xcli <-v | --version>
```

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This glossary uses the following cross-reference forms:

See   Refers the reader to one of two kinds of related information:

- A term that is the expanded form of an abbreviation or acronym. This expanded form of the term contains the full definition.
- A synonym or more preferred term

See also
    Refers the reader to one or more related terms.

Contrast with
    Refers the reader to a term that has an opposite or substantively different meaning.

B

basic mode
    A means of entering XCLI commands on the XCLI client that requires specifying IP address and login information for each command. Additional output formatting options are available in basic mode.

I

interactive mode
    A means of entering XCLI commands on the XCLI client in which the IP address, user, and password information does not need to be specified for each command.

X

XCLI client
    The system on which the XCLI command is entered.

XCLI identification parameters
    Parameters that identify the user issuing the command and the XIV system (if any) on which the command is to run. XCLI identification parameters can be specified:
- By entering them at the beginning of an interactive mode session
- In a configuration file
- When running a command in basic mode
- When running a list of commands as a batch

XCLI system command
    An XCLI command that is sent to the XIV system for processing.

XCLI utility command
    An XCLI command that is issued on the XCLI client. An XCLI utility command is not sent to an XIV system for processing. XCLI utility commands are used for setting up configurations on the XCLI client and for queries (for example, of software version) that can be processed on the client.

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