

IBM XIV Storage System  
GUI and XCLI 4.2.2

*Release Notes*





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## Release Notes

These release notes are for the IBM® XIV® Storage System GUI and XCLI version 4.2.2.

IBM Storage XIV Management 4.2.2 is released to fix two defects, found in IBM Storage XIV Management 4.2.

### Release date

30 July 2013

### Supported microcode releases

This version supports all IBM XIV releases.

## Working with the Multi-System Manager

IBM XIV recommends to use the Multi-System Manager and an XIV GUI in server mode if you have more than 10 systems.

### Compatibility

- XIV GUI 4.2.2 is compatible with Multi-System Manager 1.3.

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## New limitation

### UI-261639

XIV GUI 4.2.2 does not support Mac installation with JAVA version 6\_build 51 (that was released on June-24).

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## Fixed issues

### UI-261568

The **Modify LUN Mapping** dialog for a Cluster with 23 hosts or more may halt the XIV GUI screen, displaying **Fetcdhing data...** on the screen.

#### Affected versions:

4.2, 4.2.1

### UI-261633

Asynchronous mirror can't be created by the XIV GUI for a volume that is in a thin provisioned pool.

#### Affected versions:

4.2, 4.2.1

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## Fixed issue - release 4.2.1

### MSM-267268

Whenever several scripts are trying to access the same certificates file simultaneously, the following error message is displayed: *Certificate Error: Certificate is not trusted*. In addition, the certificate file gets corrupted.

Affected versions:  
4.2

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## What's new in XIV GUI version 4.2

Version 4.2 features the following:

### Upgrading the Multi-System Manager from the GUI

The Multi-System Manager can be upgraded from the GUI. Whenever it is opened in Server mode, the XIV GUI checks the version of the Multi-System Manager. If the version is not the latest, the user is asked to approve upgrading it.



Figure 1. Upgrading the Multi-System Manager from the GUI

### Recognizing self-encrypting disks

The GUI is now recognizing self-encrypting disks installed on the storage system. The machine name is marked with *SED*.



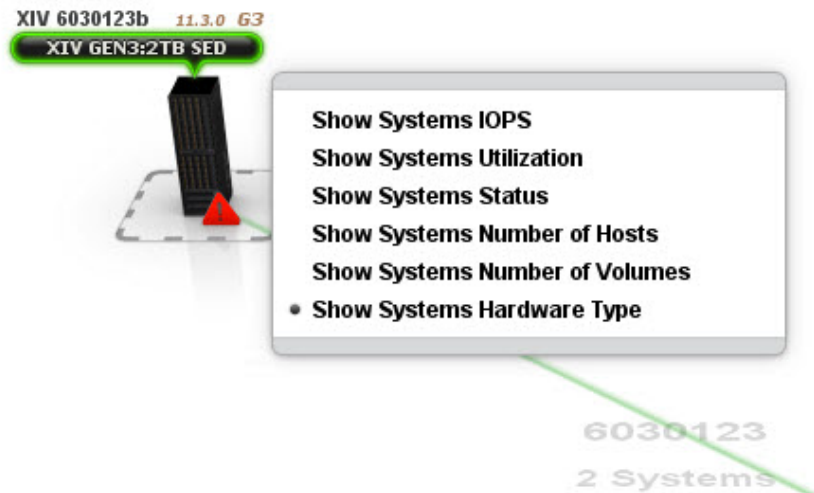


Figure 2. Recognizing self-encrypting disks

## Tooltips for dialog fields

On some of the dialog property names there are tooltips to better explain them. In the following example, there is a tooltip explaining what is a Destination System when hovering it with the mouse.

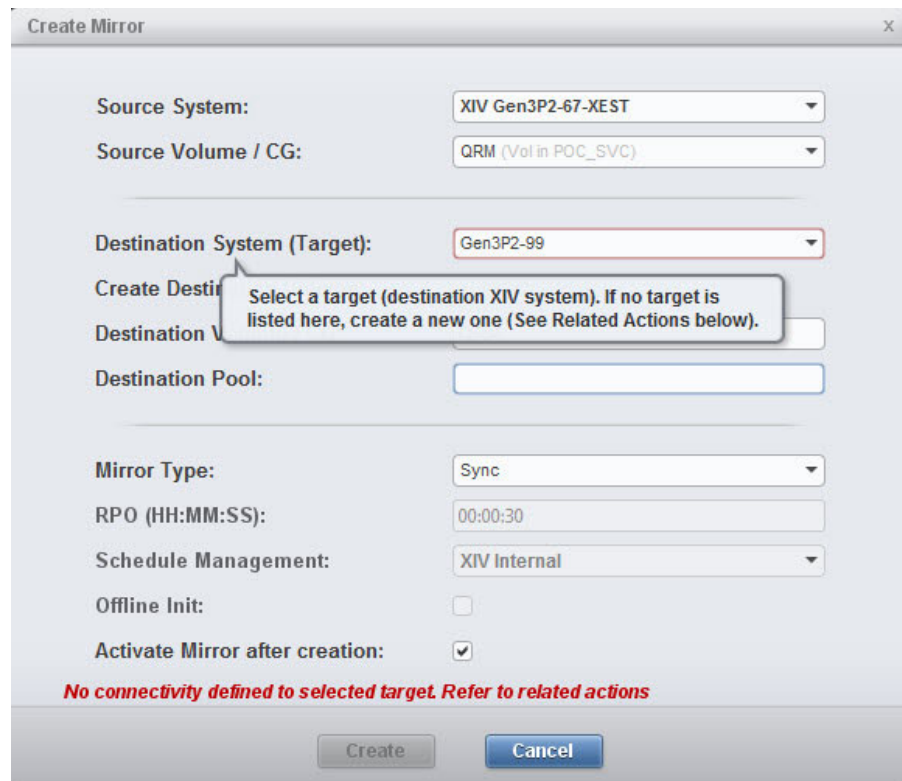


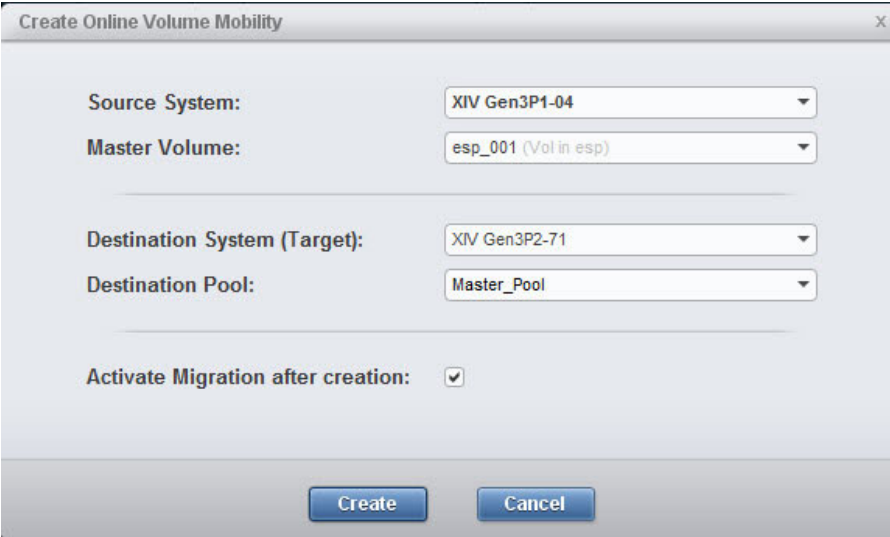
Figure 3. Tooltip explanation

## Online Volume Mobility

The GUI simplifies the Online Volume Mobility task. The source and target volumes are displayed on screen, as well as the Mobility progress, providing the following views and controllers:

### The Create Online Volume Mobility screen

This screen allows to create an Online Volume Mobility by providing the required information: source and destination systems, source volume and destination pool.



The screenshot shows a window titled "Create Online Volume Mobility". Inside, there are four dropdown menus arranged in two pairs. The first pair is for the source: "Source System" is set to "XIV Gen3P1-04" and "Master Volume" is set to "esp\_001 (Vol in esp)". The second pair is for the destination: "Destination System (Target)" is set to "XIV Gen3P2-71" and "Destination Pool" is set to "Master\_Pool". Below these fields is a checkbox labeled "Activate Migration after creation:" which is checked. At the bottom of the window are two buttons: "Create" and "Cancel".

Figure 4. The Create Online Volume Mobility screen

### All Online Volume Mobility commands are easily accessible

Following the creation of the Online Volume Mobility relation, all of the relevant commands (activating the Mobility or aborting it, etc.) are available through right-clicking the either of the source or destination volumes under the Online Volume Mobility view that shows all Online Volume Mobility activities and their states.



Figure 5. All Online Volume Mobility commands are easily accessible

## Viewing the Online Volume Mobility phase and status at a glance

Online Volume Mobility statuses are color coded:

Name ▲	System	Phase	State	Remote System
MS2	XIV Gen3P1-04	Proxy	Proxy-Destination	XIV Gen3P2-71

Figure 6. Viewing the phase and status at a glance

**Name** The name of the volume in the Online Volume Mobility relation, either source or destination.

**Phase of the Online Volume Mobility**  
Migration, Proxy-Ready or Proxy.

**Operational Status**  
Link is up or Link is disrupted.

**State**

- On the source: Initializing, Synchronized, Unsynchronized or Proxy.
- On the destination: Consistent, Inconsistent or Proxied.

## Improving the Mirroring and Data Migration creation processes

The dialogs for creating a Mirroring or a Data Migration were re-designed to enhance their usability. These dialogs provide more easily accessed related views, thus improving error-handling. In addition, context-based tooltips on parameters better indicate their purpose on any given situation.

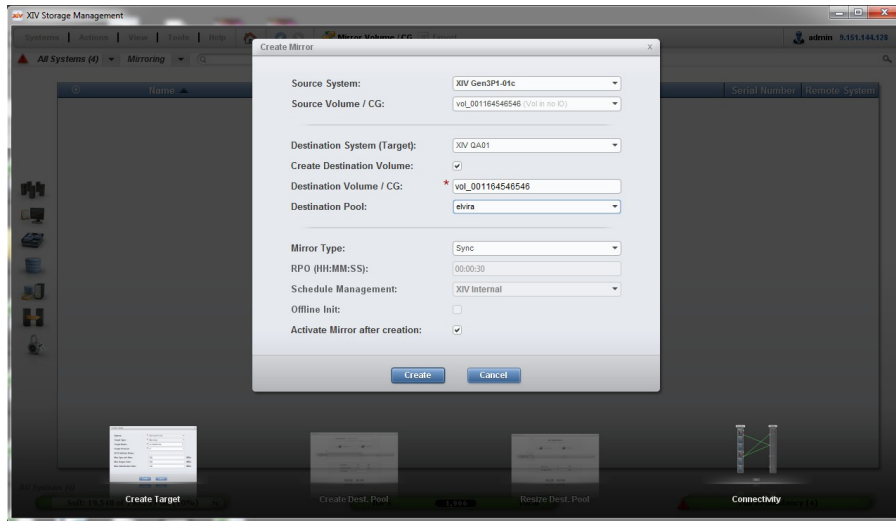


Figure 7. Mirroring related views

## Specifications

### GUI specifications

The XIV GUI runs on either Direct mode or Manager mode. The specifications for each are detailed below.

#### Direct mode

**CPU** Dual core

#### Memory

**Up to 25 systems**  
700MB

**More than 25 systems**  
1.1GB

**Max number of XIV systems monitored by a single XIV GUI in direct mode is:**  
81

**Best practice:** IBM XIV recommends to use the IBM Hyper-Scale Manager and an XIV GUI in server mode if you have more than 40 systems.

#### Server mode

**CPU** Dual core

**Memory**  
300MB

**Allowed latency between a single XIV GUI and the IBM Hyper-Scale Manager:**  
Max of 50ms

### Supported OS for XIVGUI, XCLI, XIVTOP

#### Windows

- Windows XP (32 bit)

- Windows XP (64 bit)
- Windows Server 2003 (32 bit)
- Windows Server 2003 (64 bit)
- Windows Server 2008 (32 bit)
- Windows Server 2008 (64 bit)
- Windows Server 2012 (64 bit)
- Windows 7 (32 bit)
- Windows 7 (64 bit)
- Windows Vista (32 bit)
- Windows Vista (64 bit)
- Windows 8 (32 bit)
- Windows 8 (64 bit)

Make sure you install the relevant package (64-bit or 32-bit) according to your OS type.

#### **Linux**

- Linux Red Hat 5 x86-3
- Linux Red Hat 5 x86-6
- Linux Red Hat 6.2 (32 bit)
- Linux Red Hat 6.2 (64 bit)
- Linux Red Hat 6.3 (32 bit)
- Linux Red Hat 6.3 (64 bit)

**Mac**    OSx 10.7  
OSx 10.8

**JAVA minimum requirements:** JAVA version 6\_build 29.

**JAVA maximum available build:** JAVA version 6\_build 50.

#### **Additional supported OS for XCLI only**

**AIX**    **OS:** AIX 7.1.

**Oracle**    Solaris 11 (SPARC)  
Solaris 11 (64 bit)

**HPUX**    **OS:** HPUX 11i v3 (IA64)

**SLES**    11 (32 bit)  
11 (64 bit)

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## **Limitations**

### **UI-243770**

Mass copy and paste of LDAP configuration has the following limitations:

#### **XIV systems of all versions below 10.2.2**

LDAP configuration can not be copied from these versions.

#### **XIV systems of versions between 10.2.2 and 10.2.4**

The feature is supported up to version 10.2.4.

LDAP configuration can not be copied from versions 10.2.4 and below to versions above 10.2.4.

**Versions above 10.2.4**

The feature is supported among all versions above 10.2.4.

LDAP configuration can not be copied from versions above 10.2.4 to versions 10.2.4 and below.

## UI-247041

Changing the PC local time when the GUI is open, may also change the system time.

**Workaround:**

Restart the GUI.

---

## Known issues - Windows only

### UI-243418

The XIV GUI does not launch if the following env variables are defined:

- IBM\_JAVA\_OPTIONS
- JAVA\_TOOL\_OPTIONS

**Workaround:**

Delete the definition.

### UI-253185

The GUI must be installed on a dedicated directory, as the uninstallation erases it completely.

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## Features we would like you to know of

### Multi-system management

#### Connecting to the IBM Hyper-Scale Manager

The IBM Hyper-Scale Manager enhances and improves the way to manage multiple XIV systems. The GUI allows to connect to a IBM Hyper-Scale Manager using an access code.

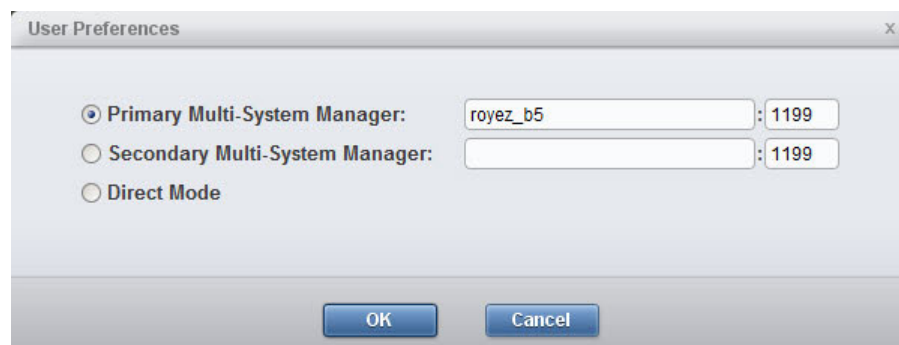


Figure 8. Connecting to the IBM Hyper-Scale Manager

## Upgrading the IBM Hyper-Scale Manager from the GUI

The IBM Hyper-Scale Manager can be upgraded from the GUI. Whenever it is opened in Server mode, the XIV GUI checks the version of the IBM Hyper-Scale Manager. If the version is not the latest, the user is asked to approve upgrading it.



Figure 9. Upgrading the IBM Hyper-Scale Manager from the GUI

## Simplifying the IBM Hyper-Scale Manager manageability from the GUI

Introducing the new *Manager configuration* GUI entry. The IBM Hyper-Scale Manager can be fully managed and configured from the GUI.

Any user can now perform manager configuration tasks, but an access code is required. The IBM Hyper-Scale Manager is shipped with a default access code - *adminadmin*. It is advised not to use the default but modify it.

There is no longer need for a *Server Admin* role.

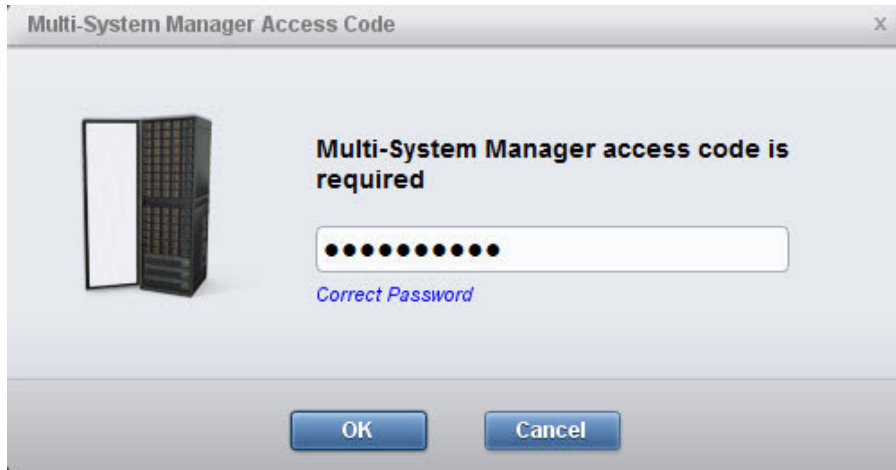


Figure 10. Accessing the IBM Hyper-Scale Manager from the GUI

## System Selector

The multi system component allows to easily browse for a system or search it, immediately viewing whether it is connected as well as its status.

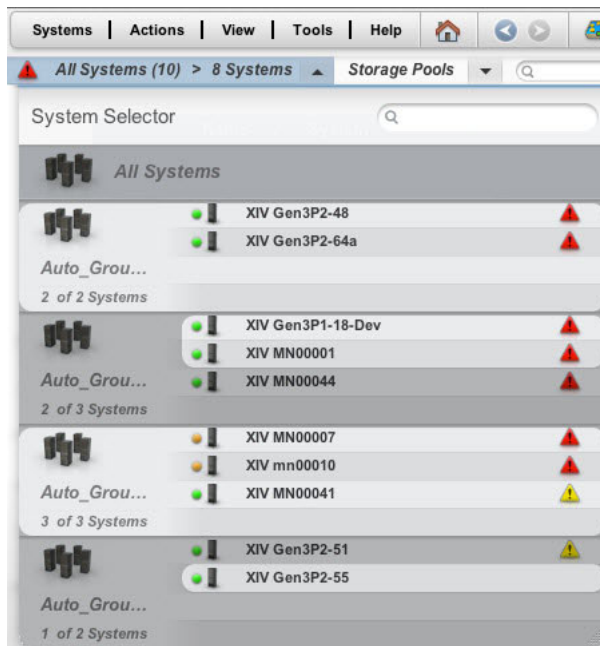


Figure 11. System selector

Enabled by using the IBM Hyper-Scale Manager, multiple system selection is also available from each view, providing the ability to select a sub-set of XIV systems to narrow any view.

## Hiding systems

The GUI allows to focus on XIV systems of interest through determining which of the systems will be seen on screen.



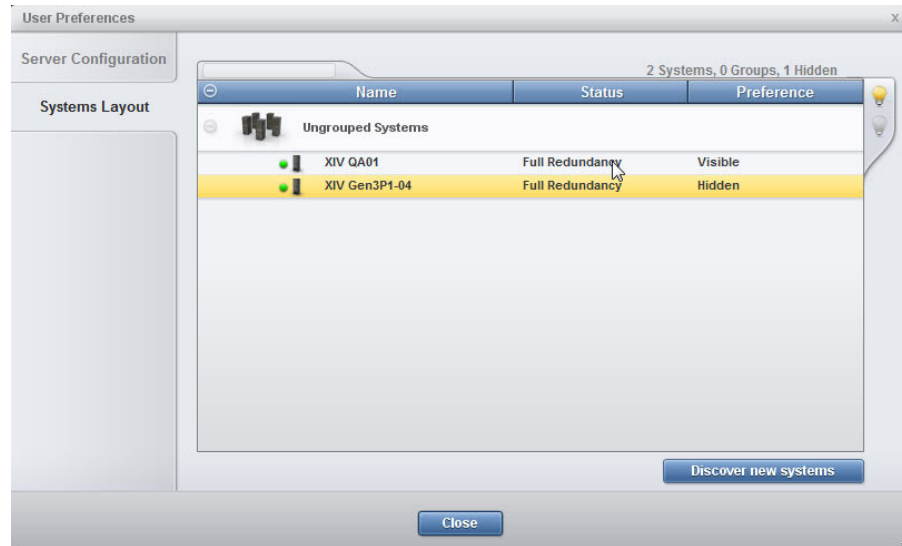


Figure 12. Hiding a system

## Tiles, List and connectivity views

The GUI allows for viewing XIV systems in multiple formats for enhanced ease of use.

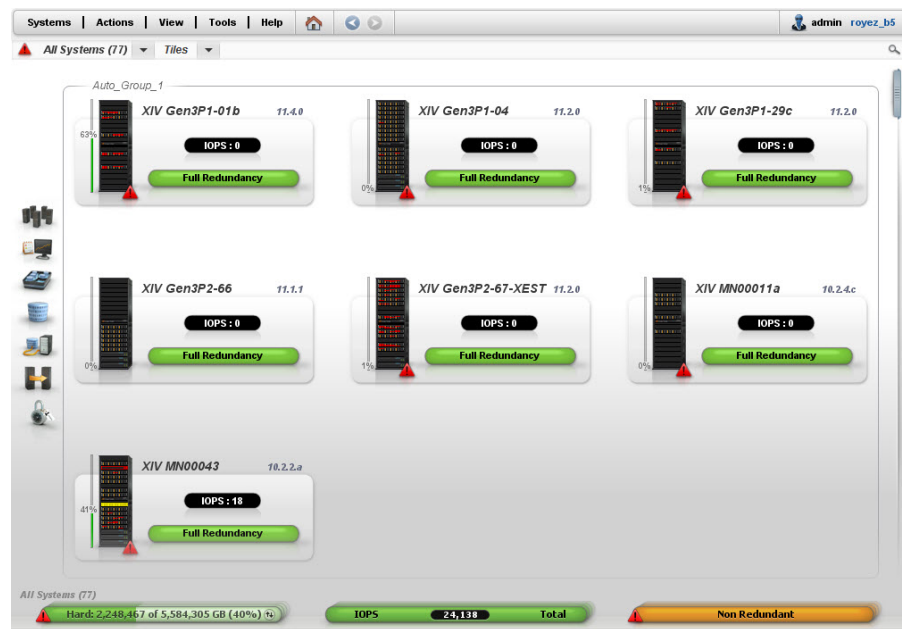


Figure 13. Tiles view

Name	Group	Status	Hard ...	Hard ...	Soft Size	Soft U...	IOPS
XIV Gen3P1-04	Auto_Group_1	Full Redundancy	120.3 TB	189 GB	120.3 TB	189 GB	13,271
XIV MN00011a	Auto_Group_1	Full Redundancy	20 TB	0 GB	20 TB	0 GB	0
XIV Gen3P1-01c	Auto_Group_1	Full Redundancy	19.3 TB	13 TB	19.3 TB	13 TB	427
XIV Gen3P2-86b	Auto_Group_10	Full Redundancy	26.2 TB	17 GB	26.2 TB	17 GB	0
XIV Gen3P1-10	Auto_Group_10	Full Redundancy	241 TB	240.9 ...	241 TB	240.9 ...	0
XIV Gen3P3-131	Auto_Group_10	Full Redundancy	135.5 TB	44.8 TB	135.5 TB	44.8 TB	87,552
XIV Gen3G-06	Auto_Group_10	Full Redundancy	152.2 TB	0 GB	152.2 TB	0 GB	0
XIV Gen3P2-56 - Offline for 59 seconds	Auto_Group_10	Communication Loss	71.8 TB	59.1 TB	414.5 TB	59.1 TB	0
XIV Gen3P1-19a	Auto_Group_11	Full Redundancy	27.2 TB	1.6 TB	27.2 TB	1.6 TB	17
XIV hostdev32a	Auto_Group_11	Full Redundancy	15.4 TB	15.4 TB	15.4 TB	15.4 TB	469
XIV Gen3P1-11b	Auto_Group_11	Full Redundancy	15.4 TB	2.6 TB	15.4 TB	2.6 TB	23
XIV Gen3P1-11c	Auto_Group_11	Full Redundancy	15.4 TB	34 GB	15.4 TB	34 GB	0
XIV Gen3P2-72a	Auto_Group_11	Full Redundancy	19.4 TB	86 GB	19.4 TB	86 GB	0
XIV MN00052	Auto_Group_11	Full Redundancy	78.7 TB	60.2 TB	78.7 TB	60.2 TB	7
XIV nas7a	Auto_Group_11	Full Redundancy	55.7 TB	0 GB	55.7 TB	0 GB	0
XIV QA01	Auto_Group_11	Full Redundancy	77.6 TB	69 TB	77.6 TB	69 TB	0
XIV Gen3P2-36b	Auto_Group_2	Full Redundancy	11.5 TB	1 TB	11.5 TB	1 TB	0
XIV Gen3P2-95	Auto_Group_2	Full Redundancy	317.5 TB	317.5 ...	317.5 TB	317.5 ...	0
XIV Gen3P2-54a	Auto_Group_2	Full Redundancy	1.8 TB	17 GB	1.8 TB	17 GB	0
XIV MN00007	Auto_Group_3 -	Maintenance	66.2 TB	11 TB	66.2 TB	11 TB	0
XIV Gen3P1-22c	Auto_Group_3 -	Full Redundancy	28.2 TB	69 GB	28.2 TB	69 GB	0
XIV 6030108	Auto_Group_3 -	Full Redundancy	161.3 TB	0 GB	161.3 TB	0 GB	0
XIV Gen3P2-48	Auto_Group_4	Full Redundancy	159 TB	0 GB	159 TB	0 GB	0
XIV Gen3P2-51	Auto_Group_4	Full Redundancy	161.3 TB	104.8 ...	161.3 TB	104.8 ...	78
XIV mn00010	Auto_Group_4	Maintenance	54.6 TB	5.4 TB	54.6 TB	5.4 TB	0

Figure 14. List view

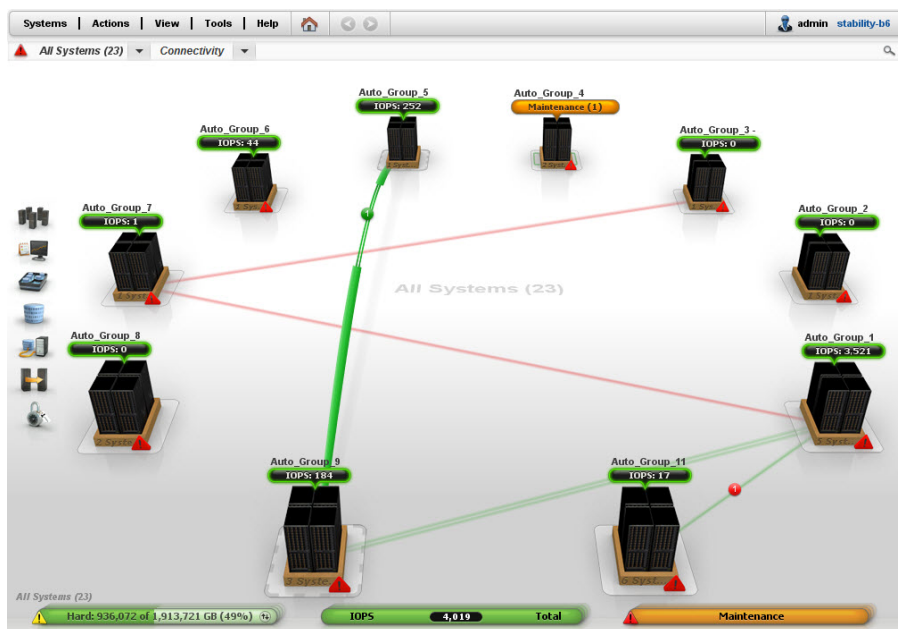


Figure 15. Connectivity view

## Multi-system views

Enabled by using the IBM Hyper-Scale Manager, every GUI view displays objects from a multiple number systems, depending on the systems selection, providing the ability to sort and filter from the entire XIV systems in the organization.









Name / System	Usage	Snapshots (GB)	Lock Beha...
 <b>TUB_AUTO_POOL</b> XIV MN00001	206 GB Used Volumes 1.1 TB Volumes allocated 1.5 TB Hard+ 1.5 TB Soft+	Snapshots reserved 377 GB+	Read only
 <b>ramir_pool</b> XIV Gen3P1-1B-Dev	1.8 TB Used Volumes 2.9 TB Volumes allocated 30 TB Hard+ 30 TB Soft+	Snapshots reserved 1 TB+	Read only
 <b>Jira-Verification-Pool</b> XIV Gen3P2-64a	17 GB Used Volumes 103 GB Volumes allocated 3 TB Hard+ 3 TB Soft+	Snapshots reserved 309 GB+	Read only
 <b>Eliran_Pool</b> XIV Gen3P2-64a	24.4 TB Hard+ 103 GB Volumes allocated 24.4 TB Soft+	Snapshots reserved 2.4 TB+	Read only
 <b>XIV-37</b> XIV Gen3P2-55	42 TB Hard+ 9 TB Volumes allocated 42 TB Soft+	Snapshots reserved 4.2 TB+	Read only
 <b>XIV-65</b> XIV Gen3P2-55	42.1 TB Hard+ 4.2 TB 42.1 TB Soft+	Snapshots reserved 4.2 TB+	Read only
 <b>TUB_AUTO_POOL</b> XIV MN00007	11 TB Hard+ 11 TB Volumes allocated of 11 TB Soft (100%)	Snapshots reserved 0 GB+	Read only
 <b>pool-1203107-0004</b> XIV mn00010	2.7 TB Hard+ 1.1 TB Volumes allocated 1.1 TB 2.7 TB Soft+	Snapshots reserved 1.1 TB+	Read only

Figure 16. Viewing multiple storage pools with multiple systems

## Switching between systems in any view

You may switch between systems using **ALT+S**.

## Multi-system configuration

The GUI allows to copy system configuration from one system and paste it onto multiple XIV systems.

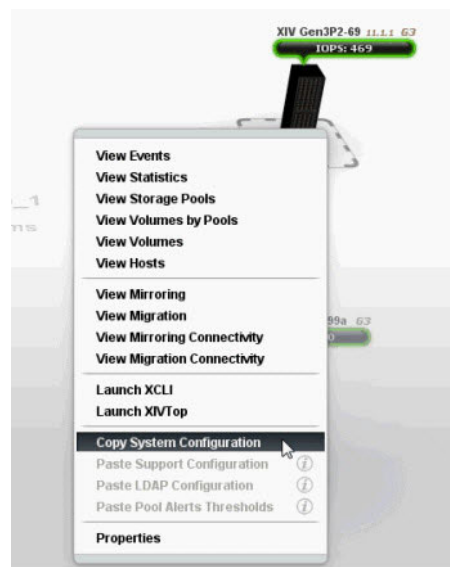


Figure 17. Copy System Configuration

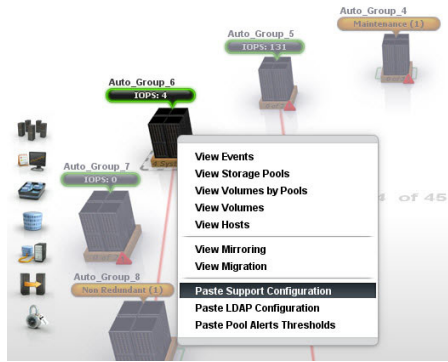


Figure 18. Paste System Configuration

## Multi-system users management

### Adding a user on multiple systems

The **Add User** screen allows for user management operations on some or all the systems that are managed by the IBM Hyper-Scale Manager.

Figure 19. Adding a user to multiple systems

Furthermore, we can select which of the XIV systems we add the user to. Then, the GUI notifies us on the systems the user was added to.

**Add User**

System: Multiple Systems (45)

Name: \*

New Password (6-12): \*

Retype New Password: \*

Category: Storage Administrator

User Group: None

Email Address: example@example.com

Phone Number:

System: XIV Gen3G-06

Progress: 82% (33 completed successfully, 4 completed with errors)

Show Results Close

Figure 20. Adding a user to multiple systems

### Editing a user on multiple systems at once

Enabled by using the IBM Hyper-Scale Manager, the **Users** screen allows for editing a user across multiple XIV systems at once.

Name	System	Category	Phone	Email	Group
Ungrouped XIV Gen3P1-18-Dev					
moshe		Storage Administrator			
Ungrouped XIV Gen3P2-48					
moshe		Storage Administrator			
Ungrouped XIV Gen3P2-51					
moshe		Storage Administrator			
Ungrouped XIV Gen3P2-55					
moshe		Storage Administrator			
Ungrouped XIV Gen3P2-64a					
moshe		Storage Administrator			
Ungrouped XIV MN00001					
moshe		Storage Administrator			
Ungrouped XIV MN00041					
moshe		Storage Administrator			
Ungrouped XIV MN00044					
moshe		Storage Administrator			

Figure 21. Editing a user on multiple systems

## Certificate management

### Certificate validation

All communication between XIV GUI, XCLI, XIVTop, IBM Hyper-Scale Manager and XIV systems is secured over SSL. Starting with release 4.1, users can install their own certificates in addition to the built-in certificate that comes with the XIV system.

All Management Tools components can validate the server-side certificates, thus minimizing the chances for MitM attacks. Every Management Tool component, connected to an XIV directly or via a IBM Hyper-Scale Manager, will now validate the certificate installed in the XIV/IBM Hyper-Scale Manager and if not valid, will be asked to trust it (once or always).

**XCLI** The XCLI provides CLI-based commands to trust and manage the certificates inventory internally.

```
xcli -C <command> [ <p1>=<v1> [ <p2>=<v2> ]...]
Certificates Management. Available commands:
list [ type=<type> ]
    Lists client trusted certificates. Available types:

    all (default): lists all trusted certificates (global and private)
    private: lists all private trusted certificates
    global: lists all global trusted certificates

Examples:
    xcli -C list
    xcli -C list type=private

show alias=<alias>
    Shows certificate details

Examples:
    xcli -C show alias=abcd

import pem=<pem_file_path> [ alias=<alias> ]
    Imports certificate (PEM format) into the list of trusted certificates.

    Optionally, the alias can be provided.

Examples:
    xcli -C import pem=C:\abc\def\cert.pem
    xcli -C import alias=abcd pem=C:\abc\def\cert.pem

remove alias=<alias>
    Remove certificate from the list of trusted certificates

Examples:
    xcli -C remove alias=abcd
```

**GUI** The GUI provides views for certificate management.

The Certificates tab view is accessible from:

- The **Tools > Management > Certificates tab** menu entry. On this screen you manage the XIV's trusted certificates, when working in Direct mode (Local), and the IBM Hyper-Scale Manager trusted certificate. This is to protect the connection between the GUI and the XIV systems, or GUI and the IBM Hyper-Scale Manager.

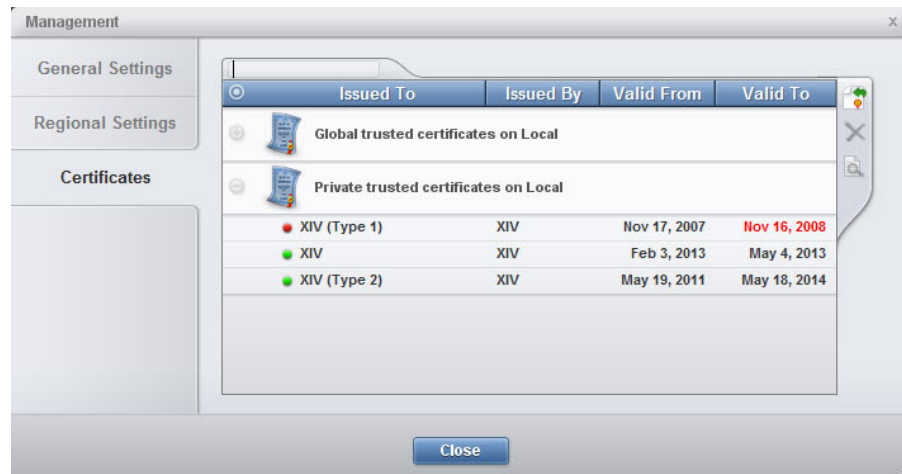


Figure 22. The Certificates tab on the Management screen

- The **Manager Configuration > Certificates** tab. On this screen you manage XIV systems trusted certificates that are stored on the IBM Hyper-Scale Manager itself. This is to protect the connection between the IBM Hyper-Scale Manager and the XIV systems.

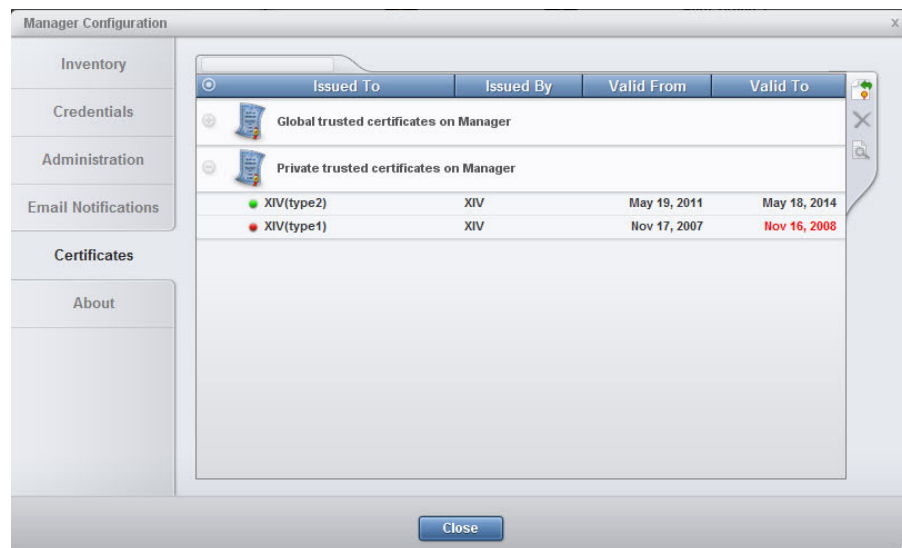


Figure 23. The Certificates tab on the Manager Configuration screen

In addition, whenever we connect to a new IBM Hyper-Scale Manager or a new XIV system, the Certificate details screen pops, asking us to trust them. For example, in the below image, we can select between trusting the IBM Hyper-Scale Manager once, or always.

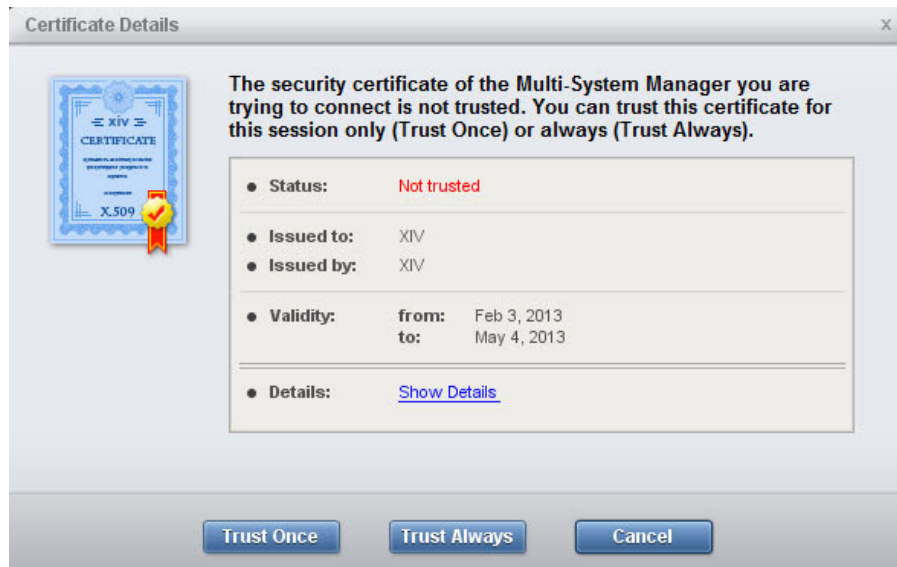


Figure 24. Certificate validation

#### XIVTop

The XIVTop manages certificates via the GUI, using the trust store of the GUI.

## GUI tips

### Recognizing self-encrypting disks

The GUI is now recognizing self-encrypting disks installed on the storage system. The machine name is marked with *SED*.

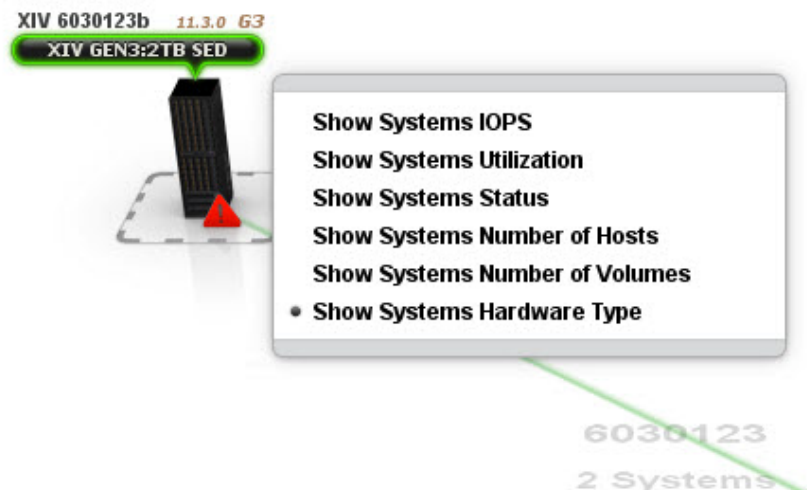


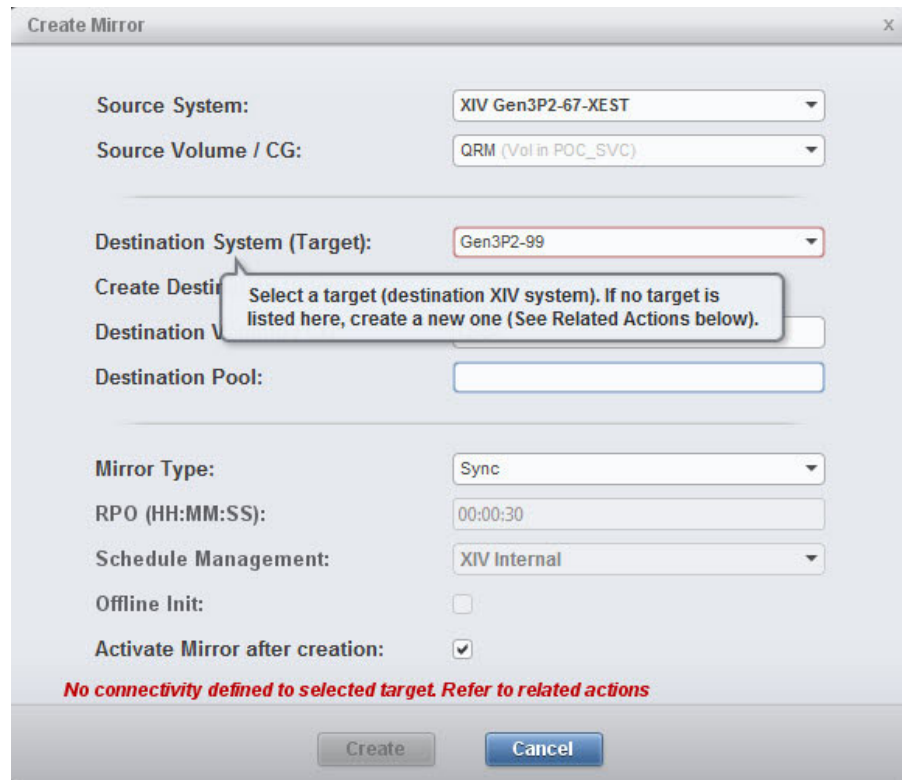
Figure 25. Recognizing self-encrypting disks

### Tooltips for dialog fields

On some of the dialog property names there are tooltips to better explain them. In the following example, there is a tooltip explaining what is RPO when hovering it



with the mouse.



The 'Create Mirror' dialog box contains the following fields and options:

- Source System:** XIV Gen3P2-67-XEST
- Source Volume / CG:** QRM (Vol in POC\_SVC)
- Destination System (Target):** Gen3P2-99
- Create Destination Volume:** ☐ (A tooltip points to this field with the text: "Select a target (destination XIV system). If no target is listed here, create a new one (See Related Actions below).")
- Destination Pool:**
- Mirror Type:** Sync
- RPO (HH:MM:SS):** 00:00:30
- Schedule Management:** XIV Internal
- Offline Init:** ☐
- Activate Mirror after creation:** ☒

A red error message at the bottom states: "No connectivity defined to selected target. Refer to related actions". At the bottom are 'Create' and 'Cancel' buttons.

Figure 26. Tooltip explanation

## Regional Settings support

For enhanced ease of use, the GUI allow to determine its regional setting.



The 'Management' dialog box has a sidebar with three tabs: 'General Settings', 'Regional Settings' (selected), and 'Certificates'. The 'Regional Settings' section contains:

- Language:** English (United States), Default
- Time zone:** Use XIV system time zone

'OK' and 'Cancel' buttons are at the bottom.

Figure 27. Regional Settings support

## Search (Ctrl+F)

The GUI allows for a textual search of just about everything.

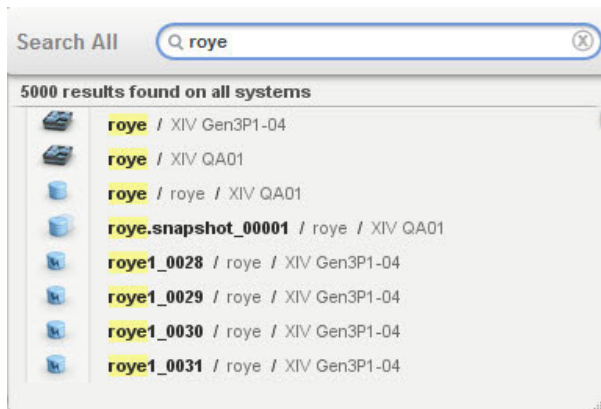


Figure 28. Searching for objects

## Disabled items tooltip

For every disabled option on the GUI, a tooltip explains the logic behind it. For example, the *Remove from consistency group* is disabled for a volume that is not part of any consistency group.

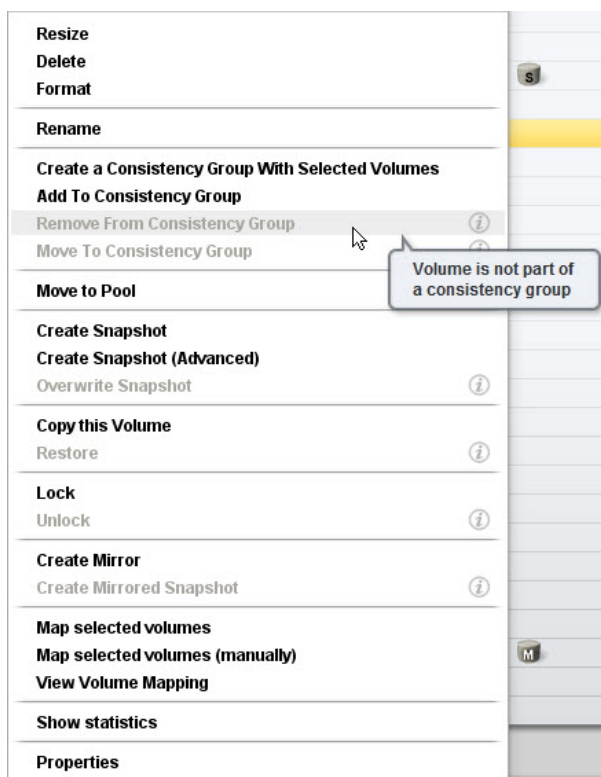


Figure 29. Disabled items tooltip

## Actions menu

The Actions menu provides an easy to access way to perform operations on any object on any of the XIV systems that are managed by the GUI, in any context.

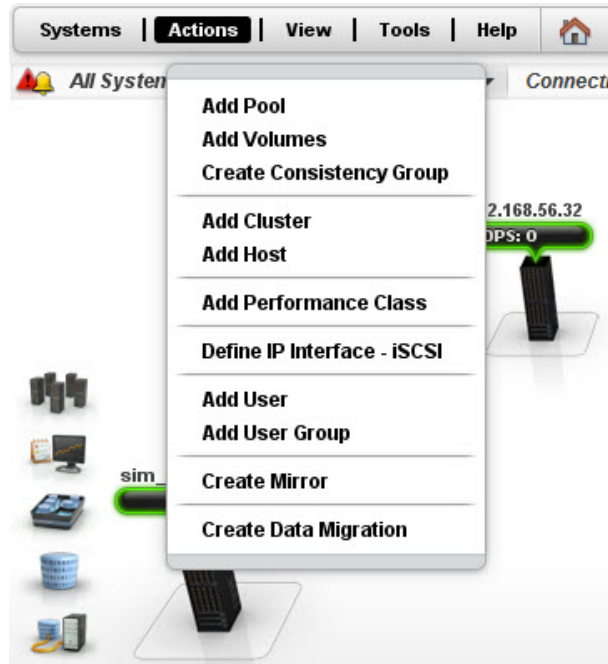


Figure 30. The actions menu

## System view

The System View provide a quick access to all of the system's hardware. Clicking any of the system's components will open it on screen. Clicking the arrow to the right of the system will reveal its patch panel.



Figure 31. The system view

## System balloons

The system balloons in the Connectivity view provide a quick access to the system's state key indicators.

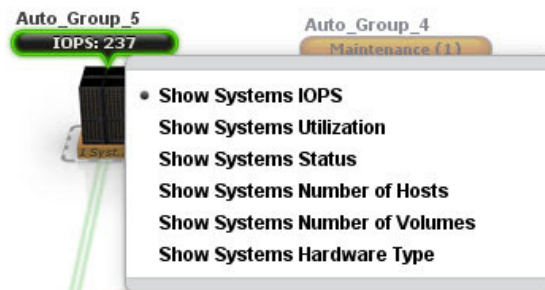


Figure 32. System balloons

## Export to CSV

In addition to the previously supported events and statistics frames, the GUI now supports exporting to CSV for all GUI tabular views. The new **Export** icon is available for all these views.



Figure 33. Export to CSV

## Statistics

### SSD hit in statistics

The Statistics screen displays both RAM and SSD cache hits for the relevant systems.

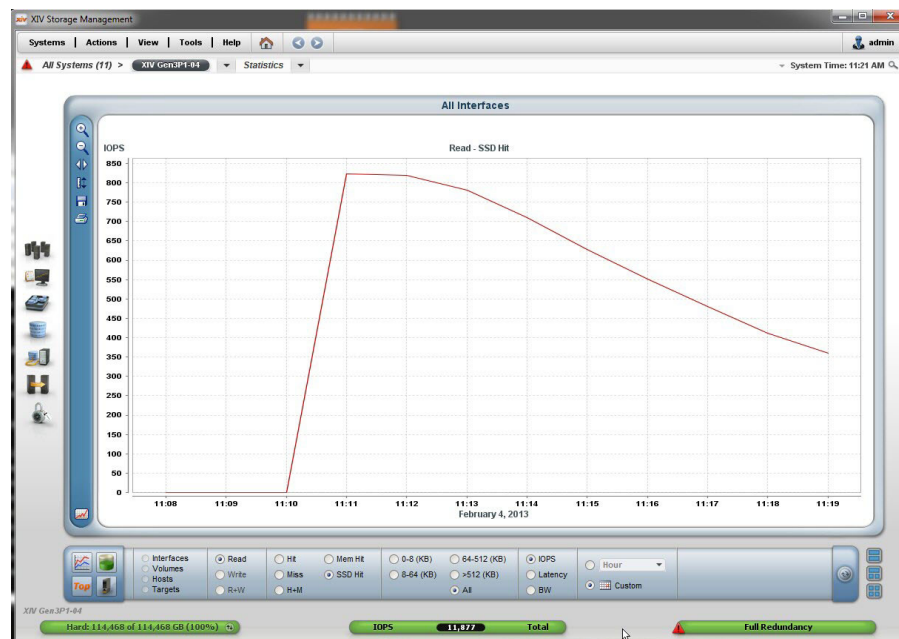


Figure 34. Viewing SSD activity

## Capacity consumption trending

Capacity history at a glance.

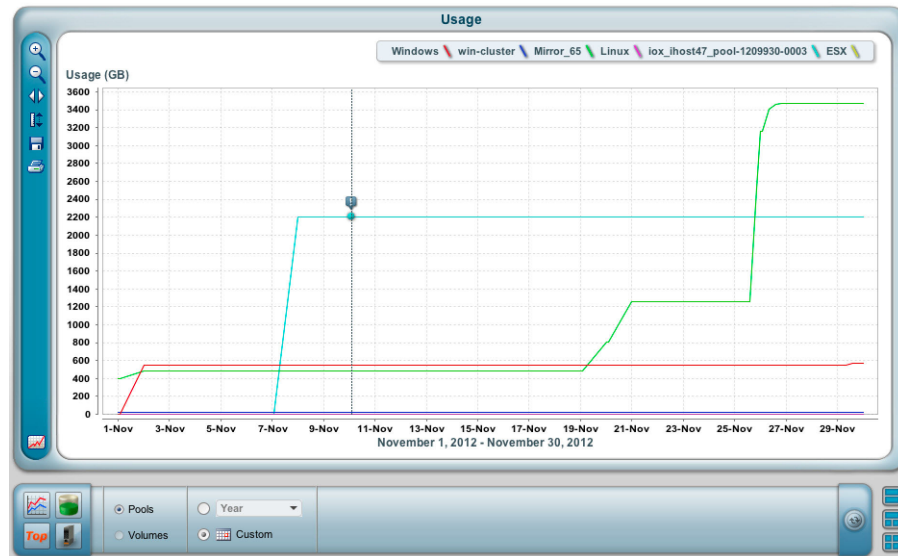


Figure 35. Capacity consumption trending

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## Readers' Comments — We'd Like to Hear from You

IBM XIV Storage System  
GUI and XCLI 4.2.2  
Release Notes

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