IBM XIV Storage System Management Tools
Version 4.4.0.2

Release Notes

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Release Notes

These release notes are for the IBM® XIV® Storage System Management Tools version 4.4.0.2.

Release date
7 October 2014

On IBM Hyper-Scale Manager

IBM Hyper-Scale Manager was previously named IBM XIV Multi-System Manager.

Working with the IBM Hyper-Scale Manager

IBM XIV recommends using the IBM Hyper-Scale Manager and an XIV GUI in Manager mode if you have more than 10 systems.

Compatibility

XIV GUI 4.4.0.2 is compatible with IBM Hyper-Scale Manager 1.5.0.59.

Supported microcode releases

This version supports IBM XIV release 11.5 and all previous IBM XIV releases.

What's new in Management Tools version 4.4

XIV Management Tools version 4.4 introduces the following new features:

Multi-tenancy
XIV multi-tenancy brings leading flexibility and simplicity to secure management of the data of multiple tenants within an XIV system.

- Secure division and isolation of XIV resources into logical domains among tenants
  - A **domain** represents a subset of system resources (users, pools, hosts/clusters, targets, etc). The domain restricts the resources a user can manage.
- Simple and quick delegation of storage administration permissions by the cloud provider to the tenant administrators
- Exceptional ease of use and flexibility in securely managing multiple tenants
- Easier tracking and reporting of storage domain operations

See the *IBM XIV Storage System Product Overview* for more information.

Multi-site mirroring
XIV multi-site mirroring features three copies of data and delivers world-class high-availability and disaster recovery, enabling users to comply with business, government, and industry-driven requirements and regulations. It provides:

- Three concurrent copies of the data
- Simple failover and failback, while keeping data mirrored to ensure business continuity

- Same leading ease of use and simplicity as XIV 2-way mirroring, avoiding the consuming setup and monitoring of traditional storage architectures
- Negligible performance impact due to field-proven, ultra-efficient XIV mirroring technology
- Non-disruptive extension of a 2-way mirror to a 3-way mirror
- Ultra-efficient data transfer due to differential XIV asynchronous replication

The new Mirrors view shows all of the mirrors with the following added features:

- Each line represent a mirror relation with its source and destination volumes (no longer a line per mirrored volume, as it was in MT 4.3, and before)
- Display by categories: Mirrored Volumes (2-way), Multi-site mirrors (3-ways), and mirrored Consistency Groups
- New mirror *states*, such as: *Role conflict* for all types of mirrors, and *Inactive (standby)*

Figure 1. New Mirrors view

See the *IBM XIV Storage System Product Overview* for more information.

Configurable idle timeout

XIV GUI, XIV Top, and XCLI become idle after a predetermined period of time, requiring the user to login again.

This timeout is configurable via the following screen, accessed via the **Tools > Management** menu option on the GUI.

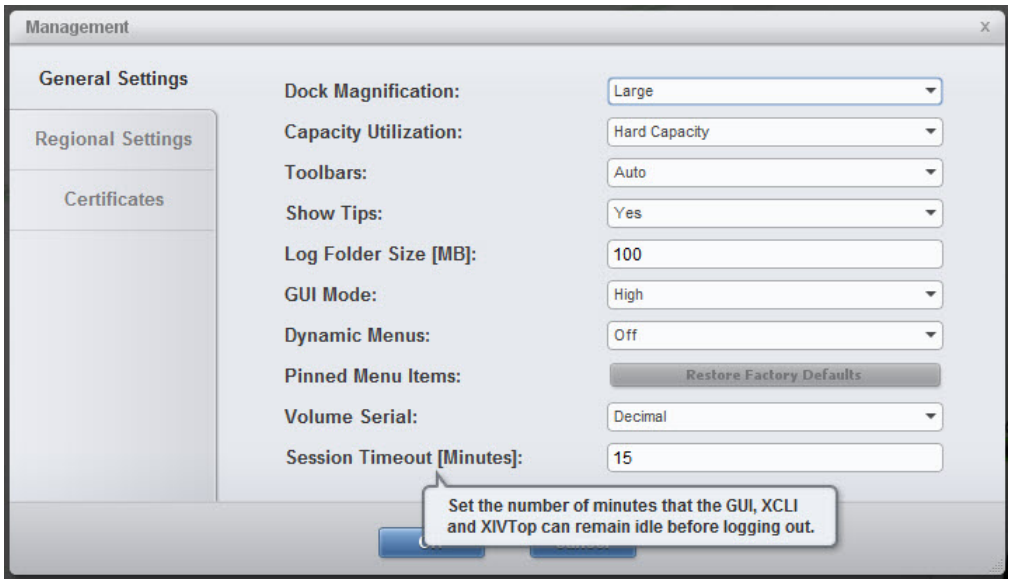


Figure 2. Configurable idle timeout

Capacity planning - PDF report

The capacity planning PDF report function of the IBM Hyper-Scale Manager provides:

- Capacity utilization report across all XIV systems
- Growth trending and forecasting based on past behavior
- Formatted report with info-graphics and charts

The Capacity planning report helps users to:

- For executives, to assist in evaluating when new storage will be needed
- For storage administrators, to assist in evaluating when current pools and domains will run out of space

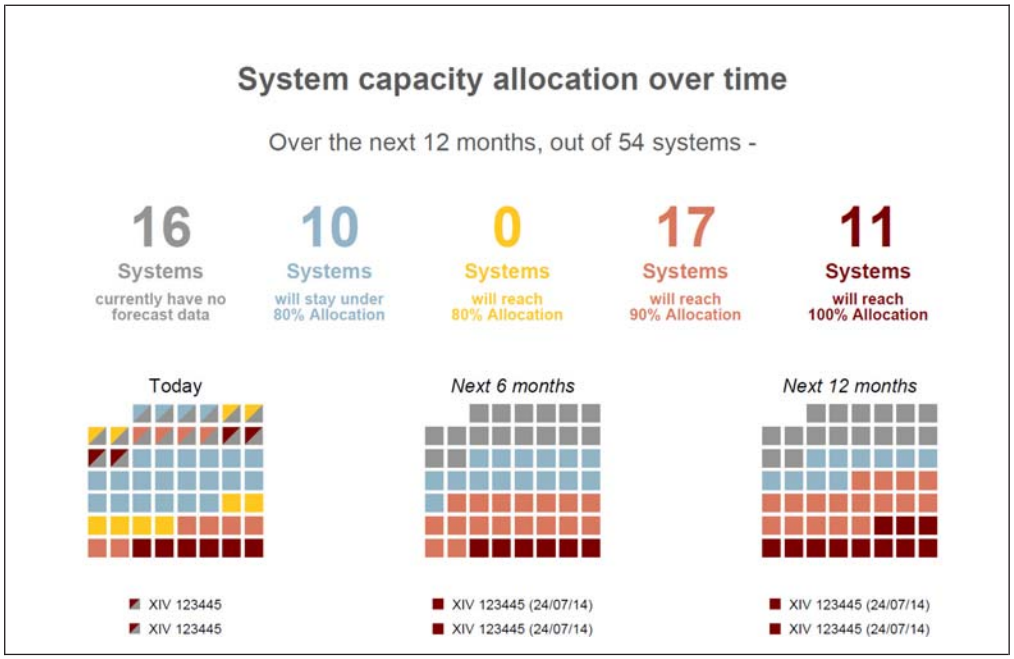


Figure 3. Capacity Planning PDF

RESTful API v2.0 Enhancements

RESTful API now offers quick and easy integration of XIV storage management into any cloud management system. Features include:

- Standard and popular integration mechanism in cloud environments
- Automation of standard storage management operations, such as monitoring and provisioning
- Support for multi-tenancy (the scope of commands is according to the given credentials)
- RESTful API V2.0 enhances V1.0 by adding supported objects, as well as adding actions on existing objects. V2.0 supports all of the features supported by V1.0 and extends the V1.0 functionality as follows: Consistency Group (CG)/XCG, Volume snapshot, Snap group, Mirror, and 3-way Mirror.

Refer to the *IBM Hyper-Scale Manager REST API Specifications* for more details.

Mobile Push Notifications

The XIV Mobile Notification Service provides real-time alerts anytime, anywhere, enabling Storage Administrators to react rapidly to potential storage issues. From the IBM® XIV® GUI, a mobile user can choose and configure the way notifications are sent to a mobile device.

- Notifications report critical issues to iOS and Android mobile devices
- One-click from notification opens the IBM XIV Mobile Dashboard view for remediation to the specific XIV and can monitor the event
- Works even when not connected to the corporate network

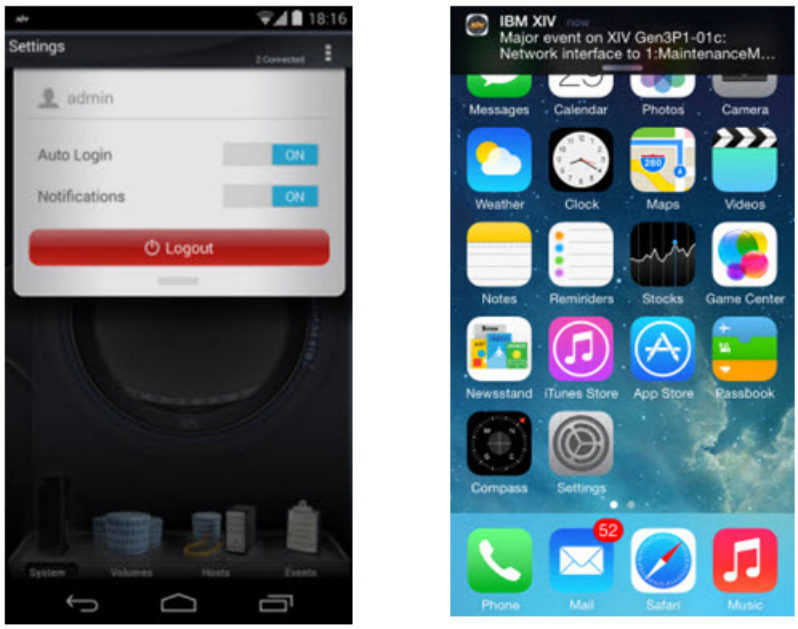


Figure 4. Mobile device settings and message bar displays

Globalization language support

Chinese Simplified is now supported.

Cross-system Consistency Groups

Consistency Group (CG) functionality enables consistent snapshots of several volumes at once. Snapshots of a CG require that the volumes belong to the respective CG. With Cross-system Consistency Groups (XCG), group snapshots can be created of multiple Consistency Groups (CGs) across different systems. That is, XCG snapshots can be taken of multiple CGs across multiple XIV systems, that are within the same XCG.

As of this release, all cross-system Consistency Groups functionality is available from the IBM XIV GUI and IBM Hyper-Scale Manager.

Note: This feature requires IBM Hyper-Scale Manager. It is not supported in direct mode.

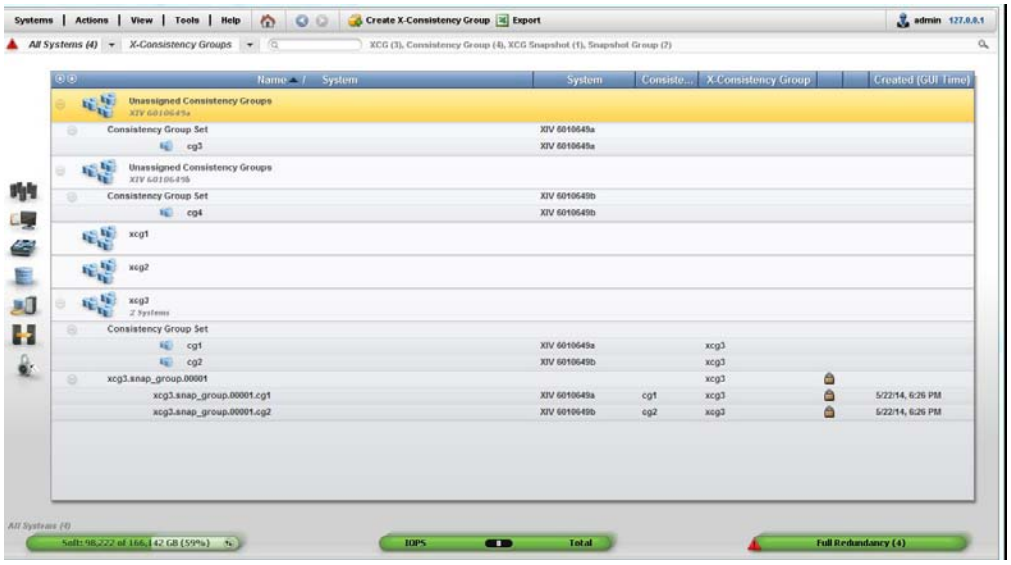


Figure 5. Cross-system Consistency Groups

Threshold configuration per pool

Setting specific alerting thresholds can be configured for Volume and Snapshot usage on a per pool basis. To set the threshold on a specific pool, right-click on the pool and choose **Configure Pool Threshold** to display the **Threshold Configuration** window:

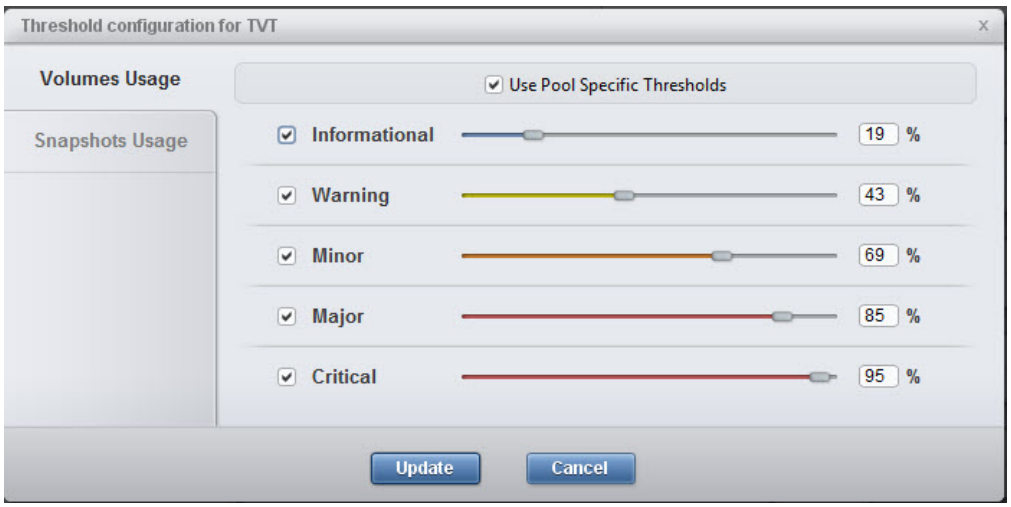


Figure 6. Threshold configuration window

IP filtering

IP Access Groups lets storage administrators define a list of up to 20 IP addresses that can access the Management and VPN IP interfaces on an XIV system. IP Access Groups can be created, modified, and deleted from the **Manage IP Access Groups** window:

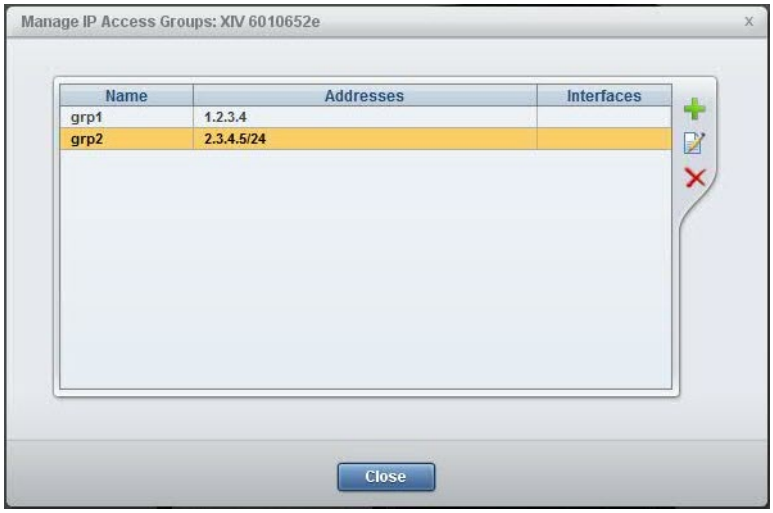


Figure 7. Manage IP Access Groups window

SNMPv3

XIV now supports SNMPv3 from version 11.5.0, and up, and adds an ability to configure which SNMP version to use. The applicable parameters can be configured using the XIV GUI.

From the XIV GUI, choose **Systems** > **System settings** > **System**, and click on the **SNMP** tab in the window.

QoS Per-pool performance class support

Quality of Service (QoS) by domain enables storage administrators to control the bandwidth of each domain and tenant. Quality of Service by host/pool enables domain administrators to control bandwidth to select applications, freeing up performance for key applications.

In 11.5/4.4, XIV QoS is enhanced to control bandwidth or IOPS to the new Domains, as well as Hosts and Pools.

XIV QoS enables “virtual tiers” without moving data between tiers, minimizing management efforts.

In addition to the existing GUI **QoS Performance Class**, options have been added to the right-click menu:

- Limit Host Traffic
- Limit Pool Traffic
- Limit Domain Traffic

From the XIV GUI, choose **QoS Performance Class** from the **Monitor** menu.

Management Tools documentation set

The documentation for this release contains instructions for each installation type and an operations guide that is common to both.

IBM Hyper-Scale Manager installation

Virtual Appliance installation

- Installation Guide for Virtual Appliance
- Quick Start Guide for Virtual Appliance

Application installation

- Installation Guide Application
- Quick Start Guide for Application

Management Tools

These documents are common to both installation types.

- Operations Guide
- Management Tools Release Notes

Specifications

GUI specifications

The XIV GUI runs on either Direct mode or Manager mode. Additionally, the XIV GUI installed on a 64-bit OS has different specifications than 32-bit OS.

Direct mode

CPU Dual core

Memory

Up to 25 systems
32-bit and 64-bit: 700MB

More than 25 systems
32-bit: 1.1GB

64-bit: 1.5GB

Max number of XIV systems monitored by a single XIV GUI in direct mode is:
144

Best practice: IBM XIV recommends to use the IBM Hyper-Scale Manager and an XIV GUI in Manager mode if you have more than 10 systems.

Server mode

CPU Dual core

Memory
500MB

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

Supported OS for XIVGUI, XCLI, XIVTOP

Windows

- 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)
- Windows 8.1 (32 bit)
- Windows 8.1 (64 bit)

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

Linux

- Linux Red Hat Enterprise 5
- Linux Red Hat 6.4 (32 bit)
- Linux Red Hat 6.4 (64 bit)

Mac OSx 10.7

OSx 10.8

Additional supported OS for XCLI only

AIX AIX 6

AIX 7

Oracle Solaris 11 (SPARC)

Solaris 11 (INTEL)

HPUX HPUX 11i v3 (IA64)

IBM Hyper-Scale Manager specifications

The two IBM Hyper-Scale Manager installation types require two sets of specifications. Following these sets there is a third set, for specifications that are common to both installation types.

Note: The installation instructions are available on the Installation Guides and Quick-Start Guides.

Standalone application

1. The installation takes place on a 64-bit RHEL 6 OS
   - For best performance, install the IBM Hyper-Scale on a server of its own.
2. Disk space:
   - At least 1 GB of free space in the `/tmp` directory
   - 76 GB free space under the installation path (the path is configurable, and does not have the home directory)
3. Memory and processor

   Up to 10 systems
   Memory - 4 GB

   Processor - Dual core

   11-100 systems
   Memory - 6 GB

   Processor - Quad core

   101-120 systems
   Memory - 6 GB

Processor - Six cores

121-144 systems
Memory - 8 GB

Processor - Six cores

Virtual Appliance memory and CPU
The Virtual Appliance deployment runs as a virtual application above an ESX server (VMWare Hypervisor only).

- An ESX (VMware) Server that hosts the IBM Hyper-Scale Manager, versions: 4, i4, 4.1, i4.1, i5
- VM disk size - 76 GB

This deployment comes with 4 GB memory and dual core vCPU by default. Immediately after the deployment, revise the specifications according to the number of XIV systems you will manage by the IBM Hyper-Scale Manager:

Up to 40 systems
Memory - 4 GB.

vCPU - Dual core.

41-100 systems
Memory - 6 GB.

vCPU - Quad core.

101-120 systems
Memory - 6 GB.

vCPU - Six cores.

121-144 systems
Memory - 8 GB.

vCPU - Six cores.

Other specifications

Ports

- Outbound/Inbound: RMI - 1199-1209
- Inbound only: SSH/SCP - 22
- Outbound only: SMTP - 25
  - Communication with XIV systems - 7778
  - RESTful API port - 8443

Latency
Allowed latency between the IBM Hyper-Scale Manager and the XIV systems it monitors: maximum of 200 ms.

Concurrently connected GUI clients to an XIV system
Maximum number of GUI clients connected to an XIV system that can concurrently send requests to the IBM Hyper-Scale Manager is 15.

Administered XIV systems
Maximum XIV Systems that are administered by one server is 144 (up to 12 groups with 12 systems each).

Limitations

UI-247041

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

Workaround:

Restart the GUI.

UI-253185

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

UI-261561

An untrusted XIV system (a system that is not authenticated via a certificate) is displayed as trusted. Removing an XIV system's certificate with the `xcli -C remove` XCLI command and then trying to connect to this system succeeds. This case happens as long as the XCLI server is up.

Workaround:

Log out of the XCLI server and log in again.

UI-262890

Unable to create or edit domain with size 0 through the GUI.

UI-263821

The XIV GUI does not launch when Single Sign-On (SSO) software is running on the client.

UI-263912

After upgrading the Hyper-Scale Manager, the time of the Schedule Daily Backup is not saved and reverts to the default value. The default value is 11:30 p.m.

UI-264320

The XIV GUI 4.4 generates a `USER_LOGIN_HAS_SUCCEEDED` event every minute.

From release 4.4.0.1, in Direct mode, change of a user's role in LDAP is not reflected immediately in the GUI. This change is only reflected after automatic LDAP authentication, which is performed every 6 hours.

Workaround:

If you want to see this user role change immediately, you must re-login to the XIV GUI after the **Session Cache Period** (previously defined in the LDAP configuration) has expired.

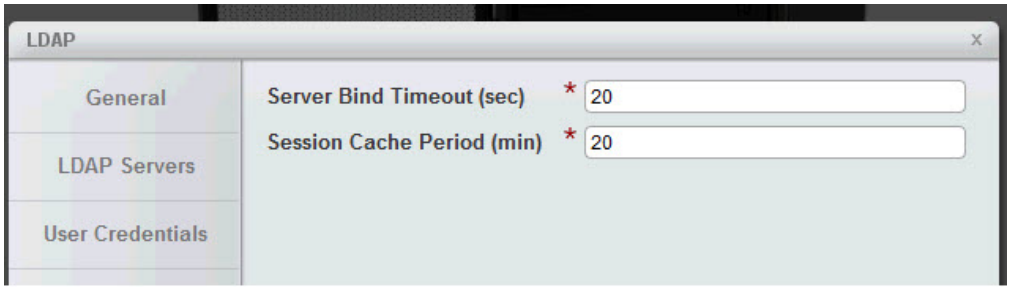


Figure 8. Setting the Session Cache Period

XIV GUI Upgrade Notice

UI-262093

When upgrading the XIV GUI from release 4.2 to 4.3 (or higher) on MS-Windows 8, export the systems list prior to the upgrade and import the list immediately after the upgrade.

Fixed issues

UI-264486

When you drag the cursor to connect a source iSCSI port to a target port, no line is displayed. The line appears only after the connection is established.

UI-263146

In some cases, calling the XCLI from a script may cause some of the scripts to fail.

UI-262579

When the IBM Hyper-Scale Manager connects to an XIV system for the first time and the connection results with an *Authentication Error* message, this error message remains in the cache and is not cleared.

If SMTP notifications are enabled, a daily email is sent regarding the error, even when the problem is already resolved.

UI-262163

Modifications have been made for application administrator roles. In systems running 11.4.1.a and up, application administrators can list mirrors through the XIV GUI. If the **Application Administrator Capabilities** field is set to **Advanced**, application administrators can also activate or deactivate mirrors, and change/switch roles.

Choose the **Parameters** tab on the System window from the **Systems** > **System Settings** > **System** menu, and set the **Application Administrator Capabilities** field to **Advanced**.

UI-261796

In certain cases, running an XCLI batch file script returns "0" (successful), when the command result actually failed.

Known issues

General

MSM-261090

The IBM Hyper-Scale Manager can't monitor a pre-11.2.0 XIV system that is configured with LDAP, with an *xiv_msms* user that is configured both internally and in the LDAP.

Workaround

1. Disable LDAP on the specific XIV system.

```
ldap_mode_set mode=inactive
```

2. Delete the *xiv_msms* user which is defined internally.

```
user_delete user=xiv_msms
```

3. Re-enable LDAP.

```
ldap_mode_set mode=active
```

Severity

Moderate

Affected versions:

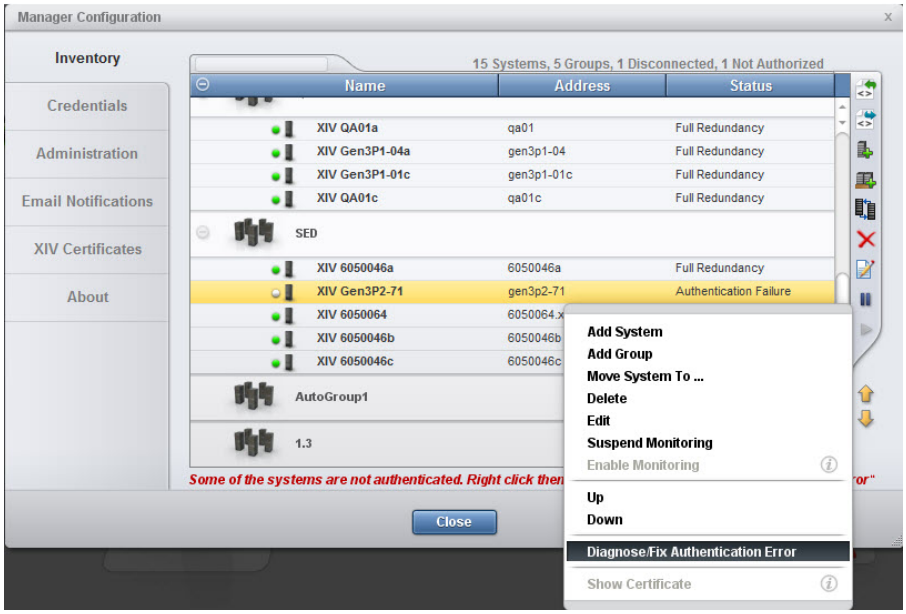
Version 1.1 and up

MSM-261538

Disabling LDAP on an XIV system may cause an authentication failure on all of the systems that are configured to this LDAP.

Workaround

1. Select **Systems > Manager Configuration** from the XIV GUI menu.
2. Type the **Manager Access Code**.
3. Select the **Inventory** tab.
4. Select and right-click the systems whose status is **Authentication Failure** and click **Diagnose/Fix Authentication Error** on the menu.



Severity
Moderate

Affected versions:
Version 1.5

Virtual Appliance installation

MSM-256723

After upgrading the IBM Hyper-Scale Manager, a logged-in vSphere client (using 'root' user) does not see the updated menu and version.

Workaround
Select option 17) `Exit` on the root menu to logoff. When you log in again, the IBM Hyper-Scale Manager main menu and version are updated correctly.

Severity
Moderate

Affected versions:
Version 1.1 onward

XIV GUI - Windows only

UI-264440

After upgrading the XIV GUI to the latest version, only mapped LUNs are displayed in the right pane of the Manual LUN Mapping view.

Workaround:
Click **Show All LUNs** from the task bar to display all the LUNs available for mapping.

UI-264145

The XIV GUI truncates (rounding down) the Latency values in the Statistics view.

Workaround:
No workaround is available.

UI-264141

When a target is not correctly configured on the destination in a mirroring relation, and there are two identical rows for the same mirror, the cursor will jump to the first mirror when you try to select the bottom mirror.

Workaround:

Verify your target configuration is correct. If you have problems doing so, contact IBM Support.

UI-263084

When an XIVTop session is open and the session idle timeout is changed, it will only take affect the next time the XIVTop is opened.

Workaround:

Close and reopen a new XIVTop session.

UI-261999

The option to determine where an imported certificate will be stored does not work. The certificate will be stored on: `"C:\Users\{UserName}\AppData\Roaming\XIV\GUI12\properties"` regardless of the address that is stated by the `-h` parameter.

Workaround:

Import the certificate using the IBM Hyper-Scale Manager.

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.

Features we would like you to know of

Multi-system configuration

Multi-system configuration is available for:

- LDAP configuration
- Support parameters
- Pool alert thresholds
- Event rules configuration
- Key server configuration (for SED enabled XIV systems)
- Adding and editing users and user groups
- Adding and editing hosts, clusters and host ports

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.

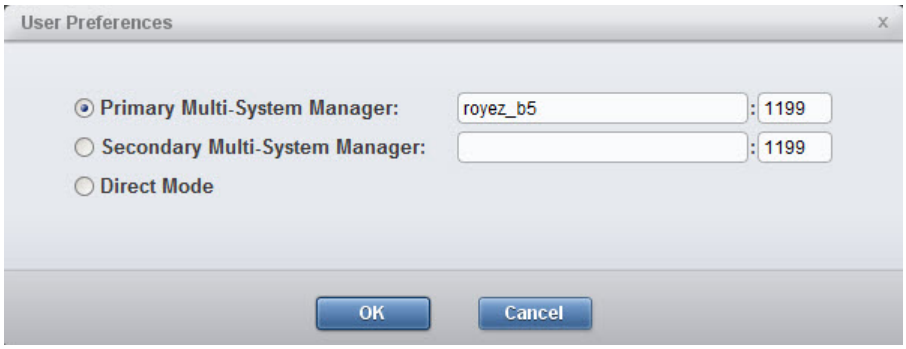


Figure 9. Connecting to the IBM Hyper-Scale Manager

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 Manager 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 10. Upgrading 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.

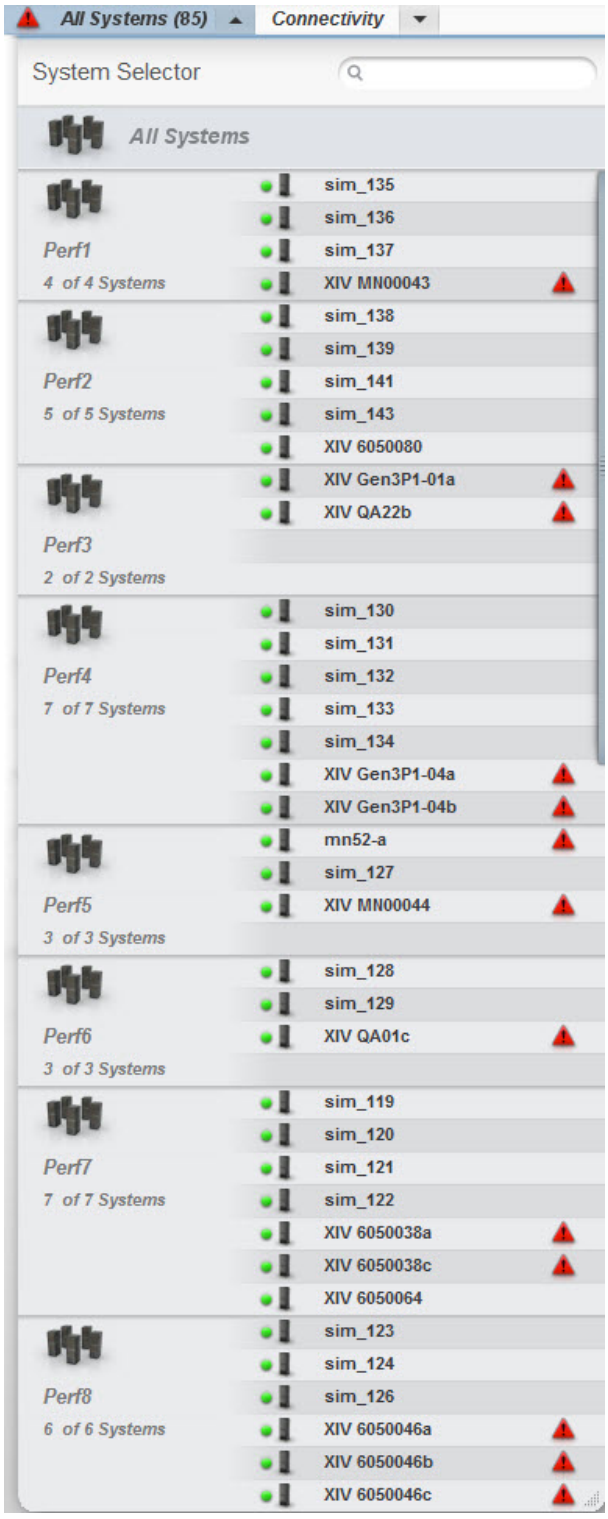


Figure 11. System selector

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.

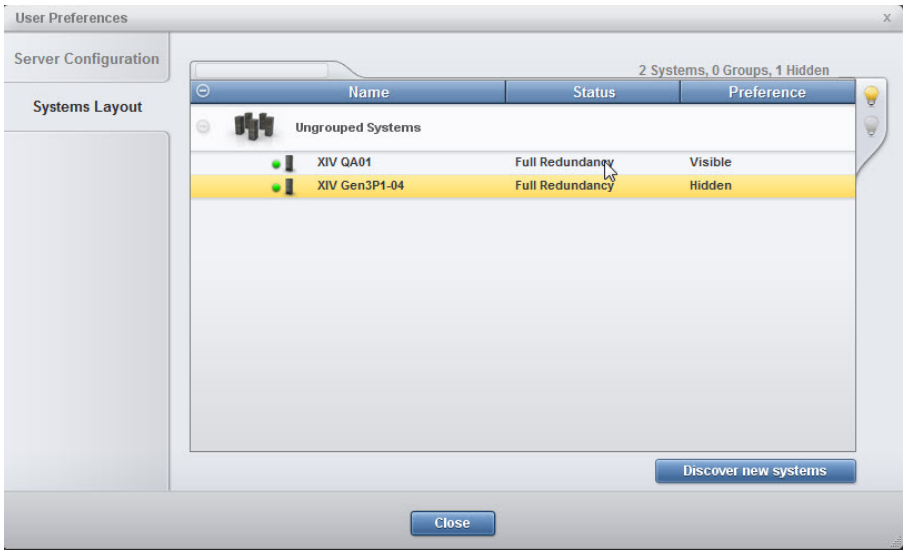


Figure 12. Hiding a system

Tiles, List and connectivity views

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

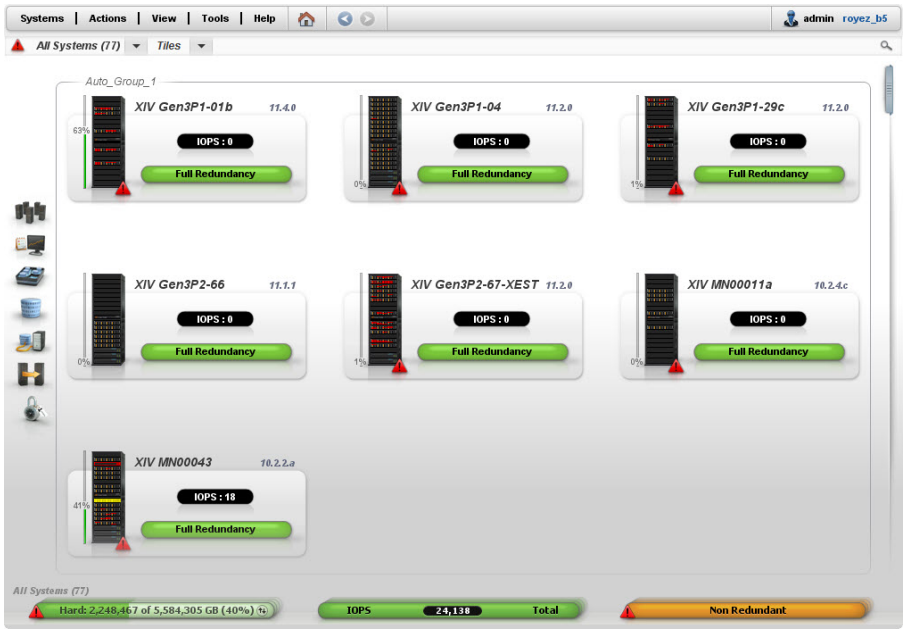


Figure 13. Tiles view

Figure 14. List view

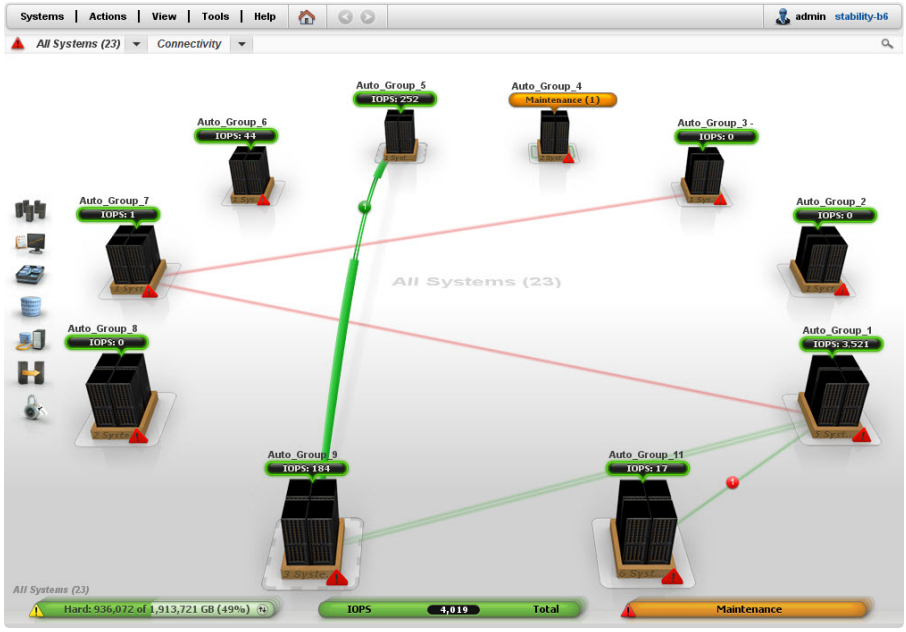


Figure 15. Connectivity view

Consolidated 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.

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.

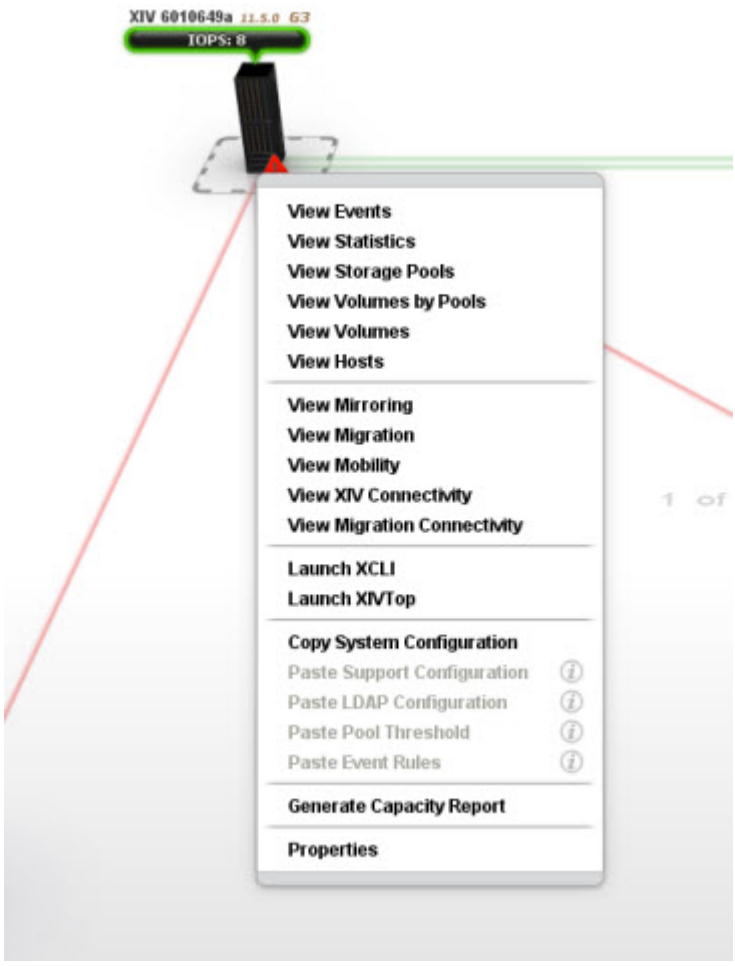


Figure 17. Copy System Configuration

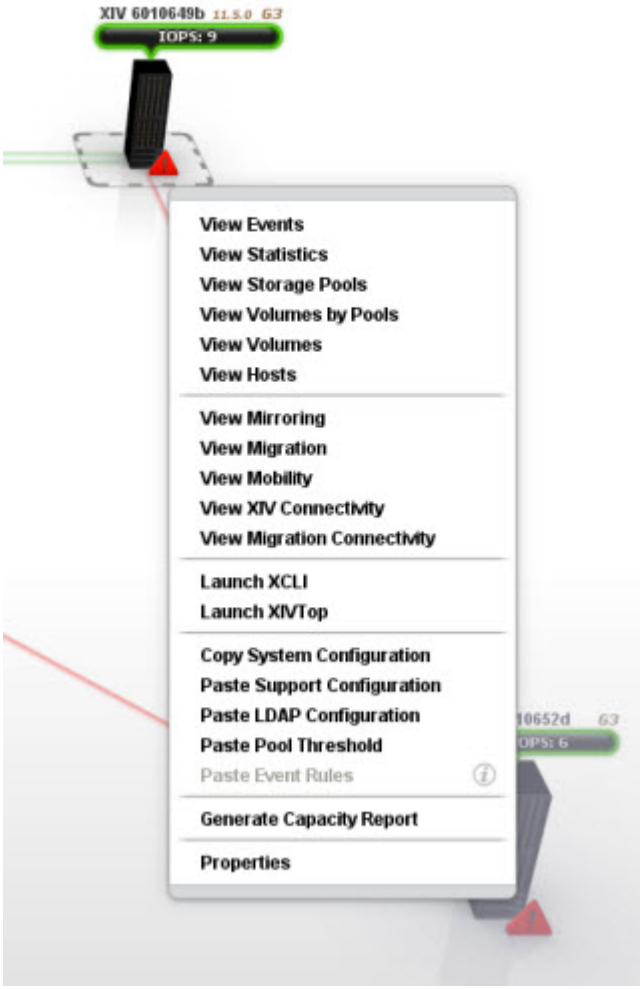


Figure 18. Paste Support Configuration

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.

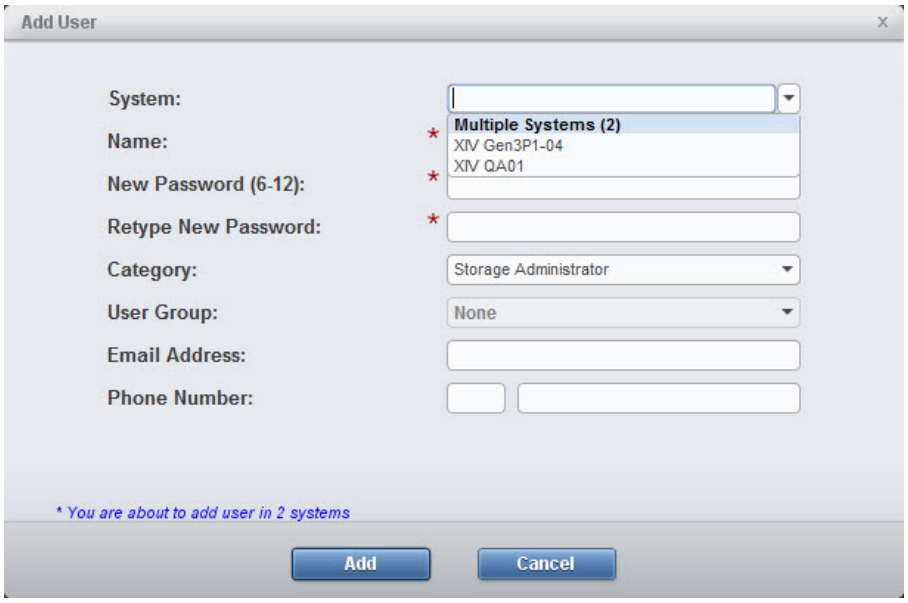


Figure 19. Adding a user to multiple systems

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.

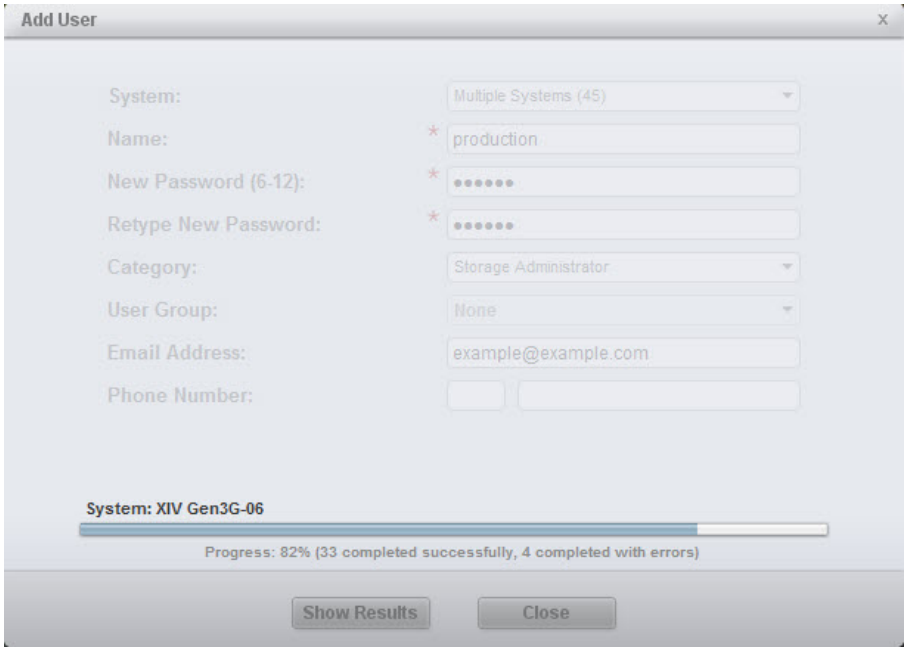


Figure 20. Adding a user to multiple systems

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.

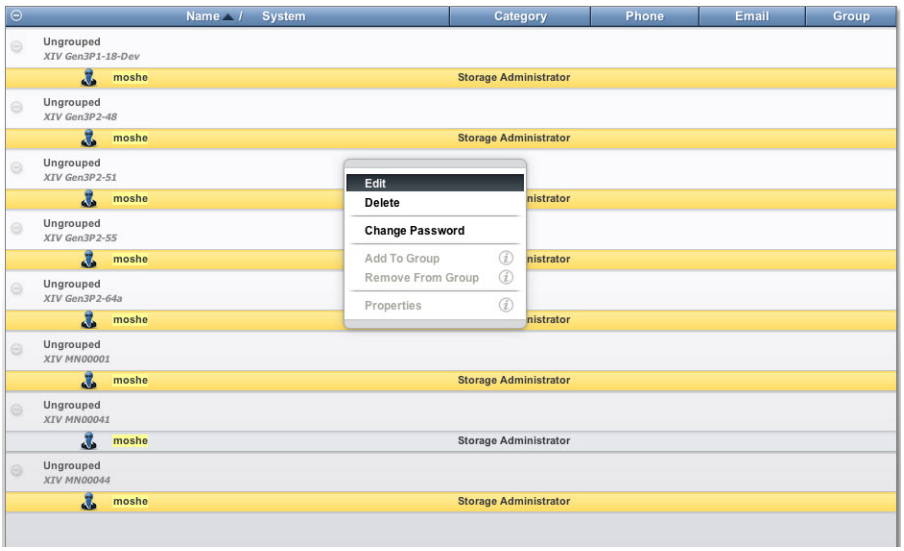


Figure 21. Editing a user on multiple systems

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*.

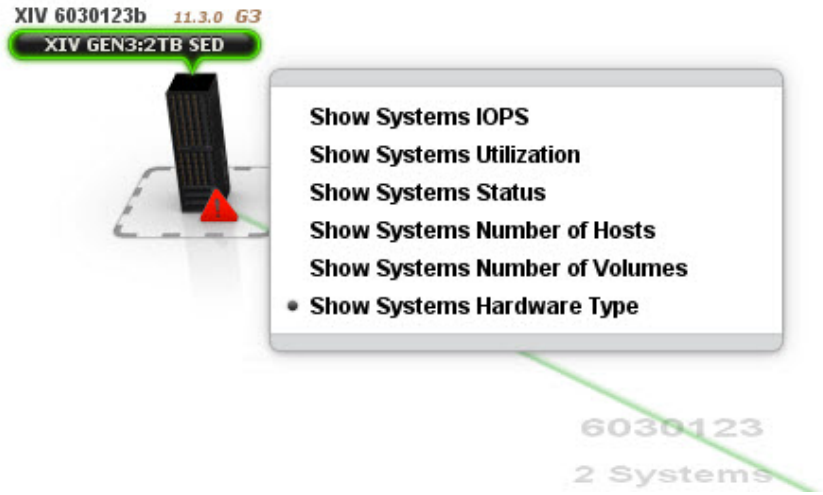


Figure 22. Recognizing self-encrypting disks

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 a destination system is when hovering it with the mouse.

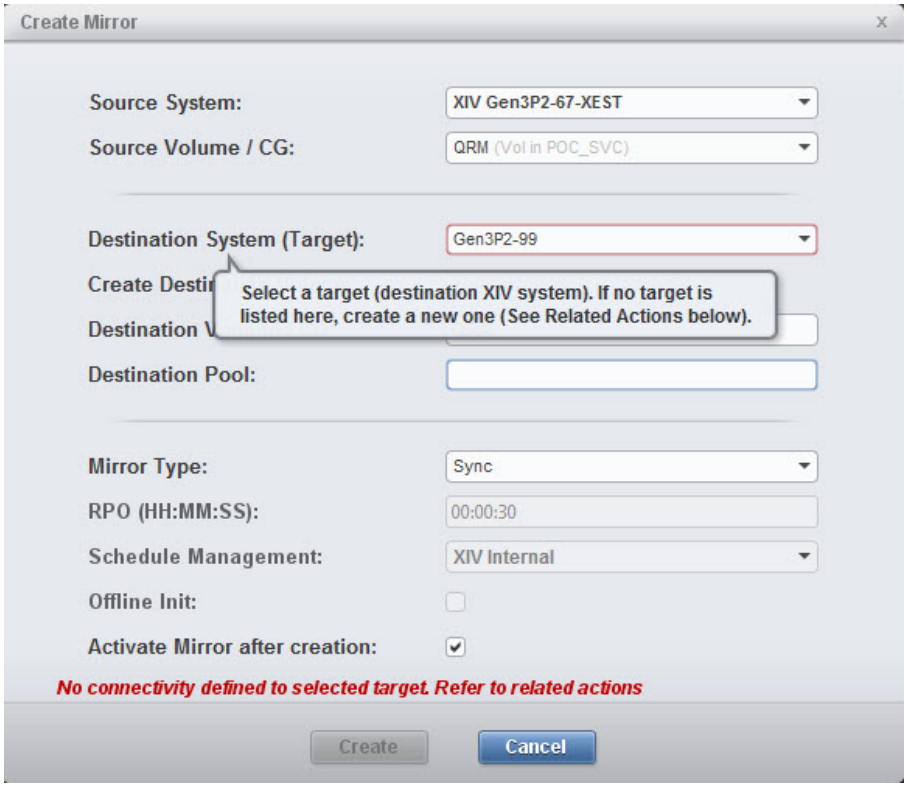


Figure 23. Tooltip explanation

Regional Settings support

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

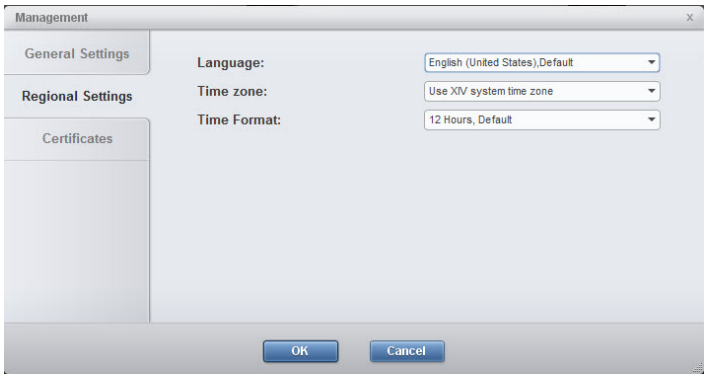


Figure 24. Regional Settings support

Search (Ctrl+F)

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

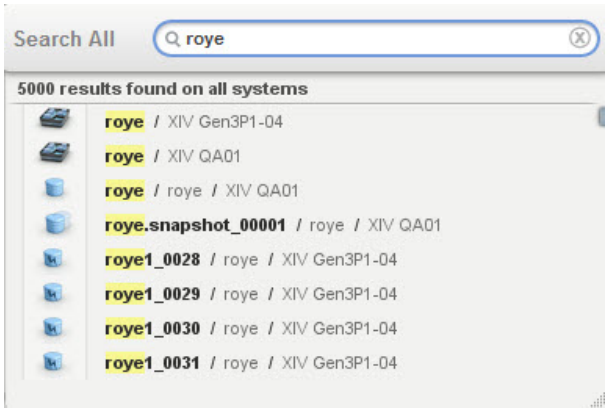


Figure 25. Searching for objects

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.

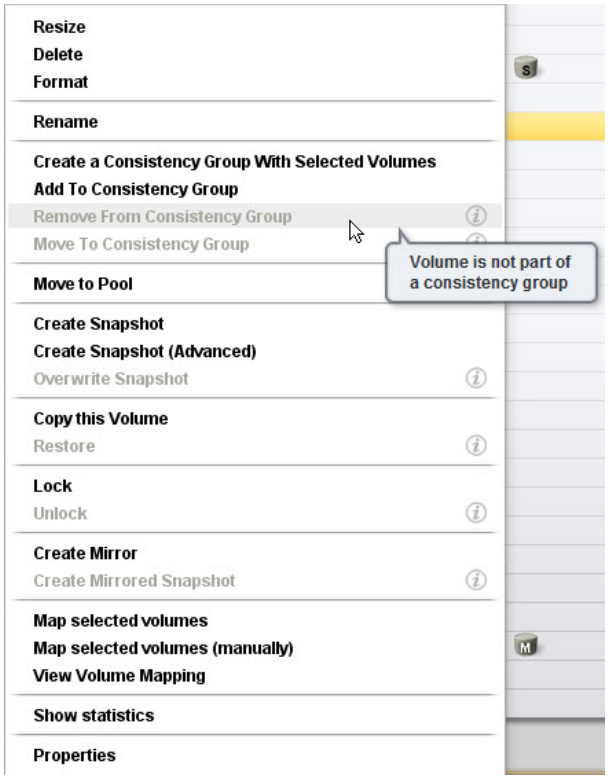


Figure 26. Disabled items tooltip

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.

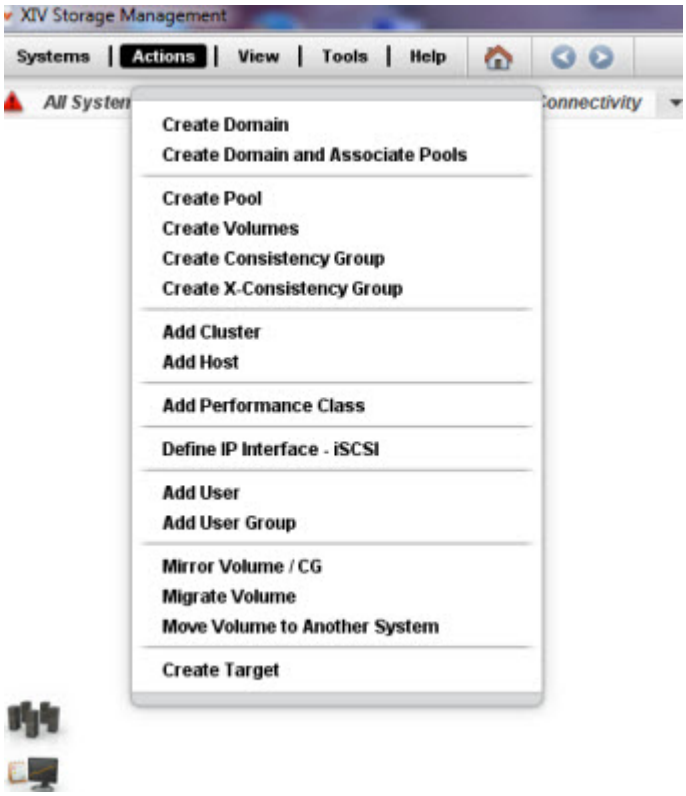


Figure 27. The actions menu

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 28. The system view

System balloons

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

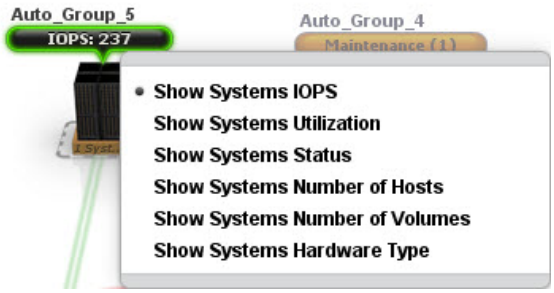


Figure 29. System balloons

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 30. Export to CSV

Statistics

SSD hit in statistics

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

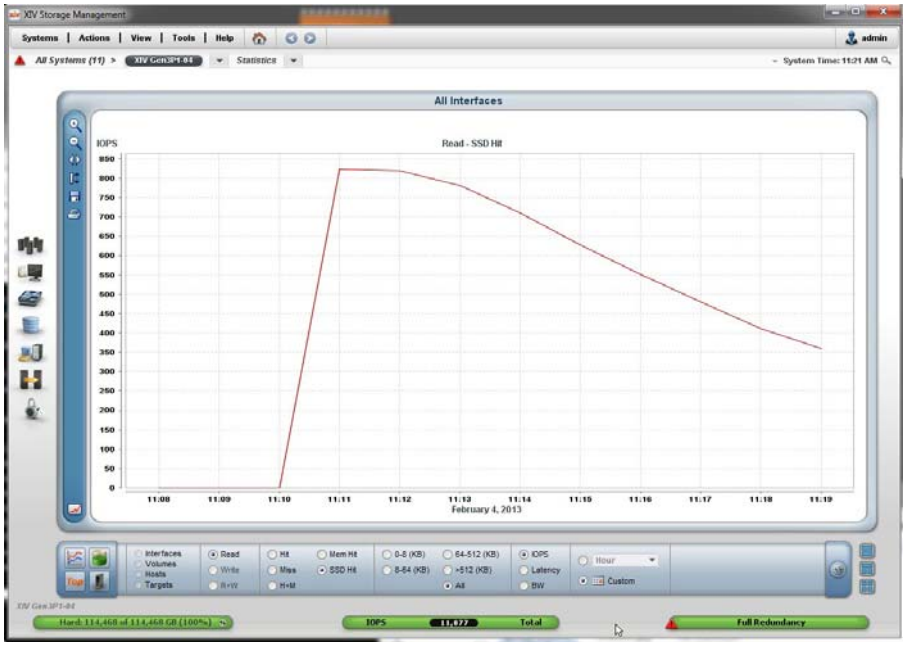


Figure 31. Viewing SSD activity

Capacity consumption trending

Capacity history at a glance.

Figure 32. Capacity consumption trending

IBM Hyper-Scale Mobility, Mirroring and Data Migration

IBM Hyper-Scale Mobility

The GUI simplifies the IBM Hyper-Scale 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 IBM Hyper-Scale Mobility screen
This screen allows to create an IBM Hyper-Scale Mobility by providing the required information: source and destination systems, source volume and destination pool.

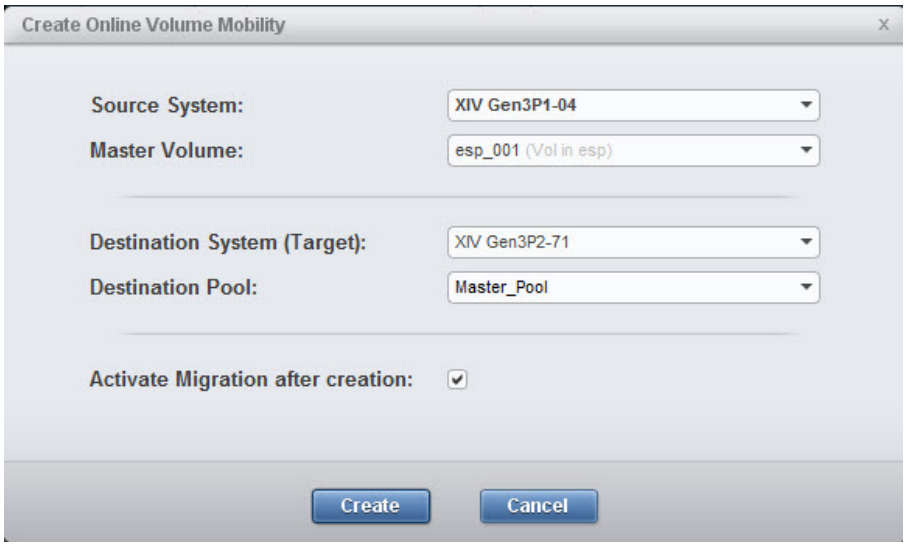


Figure 33. The Create IBM Hyper-Scale Mobility screen

All IBM Hyper-Scale Mobility commands are easily accessible

Following the creation of the IBM Hyper-Scale 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 IBM Hyper-Scale Mobility view that shows all IBM Hyper-Scale Mobility activities and their states.

Figure 34. All IBM Hyper-Scale Mobility commands are easily accessible

Viewing the IBM Hyper-Scale Mobility phase and status at a glance

IBM Hyper-Scale Mobility statuses are color coded:

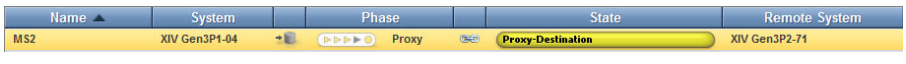


Figure 35. Viewing the phase and status at a glance

Name The name of the volume in the IBM Hyper-Scale Mobility relation, either source or destination.

Phase of the IBM Hyper-Scale 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.

IBM Hyper-Scale Manager

Upgrade from the GUI

The IBM Hyper-Scale Manager can be upgraded from the GUI. Whenever you upgrade the GUI and launch it for the first time, you will be asked to upgrade the IBM Hyper-Scale Manager as well.

Manager configuration

In order to manage the IBM Hyper-Scale Manager configuration from the GUI, go to **Systems > Manager Configuration**. There you can change the Manger Access Code and the System Machine Account (see related chapters on the user guide, available on the IBM XIV Information Center http://publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp).

Lightweight, fast installation

Minimal number of steps from the Installer, rest of the steps from the GUI. A detailed description of the installation process can be found in the user guide.

```
------------------------------------------------------------------------
--------------- IBM Hyper-Scale Manager v1.x.x.x -------------
------------------------------------------------------------------------



Welcome to the IBM Hyper-Scale Manager installation procedure.

This setup will guide you through the installation process.

Required Steps
--------------
Step 1: License Agreement
Step 2: Password Change
Step 3: Networking
Step 4: NTP & Regional Settings
Step 5: SMTP

Proceed? [Y/N] >
```

Central inventory for all GUI users

The IBM Hyper-Scale Manager provides a central inventory for all GUI users with a smart permissions engine.

```
Manager Inventory Configuration
-------------------------------
IBM Hyper-Scale Manager is running

 1) System Inventory List
 2) Add System
 3) Modify System
 4) Remove System
 5) System Monitoring Suspend
 6) System Monitoring Resume
 7) Re-authenticate All Users
 8) Change System Machine Account
 9) Manage System Certificates
10) Exit
Your Selection>1
-------------------------------------------------------------------------------------------
Name           Addresses        Status                  Id
-------------------------------------------------------------------------------------------
Gen3P3-127     Gen3P3-127,,     Invalid configuration  Gen3P3-127::null:null
Gen3p2-95      Gen3p2-95,,      Full Redundancy         Gen3p2-95::null:null
Gen3P2-93c     Gen3P2-93c,,     Full Redundancy        Gen3P2-93c::null:null
XIV Gen3p2-99  Gen3p2-99b,,     Full Redundancy          XIV Gen3p2-99:1310099:2810:114
Gen3P2-38c     Gen3P2-38c,,     Authentication Failure Gen3P2-38c::null:null
XIV Gen3P3-132 Gen3P3-132b,,    Full Redundancy          XIV Gen3P3-132:1310132:2810:214
XIV Gen3P2-69  Gen3P2-69,,      Full Redundancy          XIV Gen3P2-69:1310069:2810:114
Gen3G-07a      Gen3G-07a,,      Redistributing         Gen3G-07a::null:null
XIV MN00011c   MN00011c,,       Connection Error        XIV MN00011c:MN00011:2810:A14
XIV MN00041    MN00041,,        Full Redundancy          XIV MN00041:MN00041:2810:A14
Gen3P2-66      Gen3P2-66,,      Communication Loss     Gen3P2-66::null:null
Gen3G-09       Gen3G-09,,       Loading...               Gen3G-09::null:null
Gen3P3-131     Gen3P3-131,,     Full Redundancy         Gen3P3-131::null:null
XIV Gen3P2-83  Gen3P2-83,,      Full Redundancy          XIV Gen3P2-83:1310083:2810:214
```

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IBM XIV Storage System Management Tools
Version 4.4.0.2
Release Notes

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