IBM Hyper-Scale Manager as an Application
Version 1.7

User Guide

IBM

Management Tools Notices

This edition applies to Management Tools version 4.6 and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

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About this guide

This guide describes how to install and use the IBM Hyper-Scale Manager as an Application.

The *IBM Hyper-Scale Manager as an Application User Guide (GC27-5984)* is a part of the IBM XIV Management Tools set of documents which includes:

- *IBM XIV Storage System Management Tools Operations Guide (SC27-5986)*
- *IBM XIV Storage System Management Tools Release Notes*
- *IBM Hyper-Scale Manager Quick Start Guide for Installation as an Application*

Who should use this guide

This document is for Storage Administrators who manage XIV® Systems.

Conventions used in this guide

These notices are used to highlight key information.

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

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Procedure

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Chapter 1. Introducing IBM Hyper-Scale Manager

IBM XIV Management Tools introduces the IBM Hyper-Scale Manager that reduces operational complexity and enhances capacity planning through integrated management for large and multi-site XIV deployments. The Management Tools:

- Shift the paradigm to an integrated management of XIV Systems across the enterprise
- Provide powerful health monitoring by integrating events and alerts across the managed XIV Systems

Diagram

The following diagram depicts the way the IBM Hyper-Scale Manager interacts with the XIV GUI and XIV Systems.
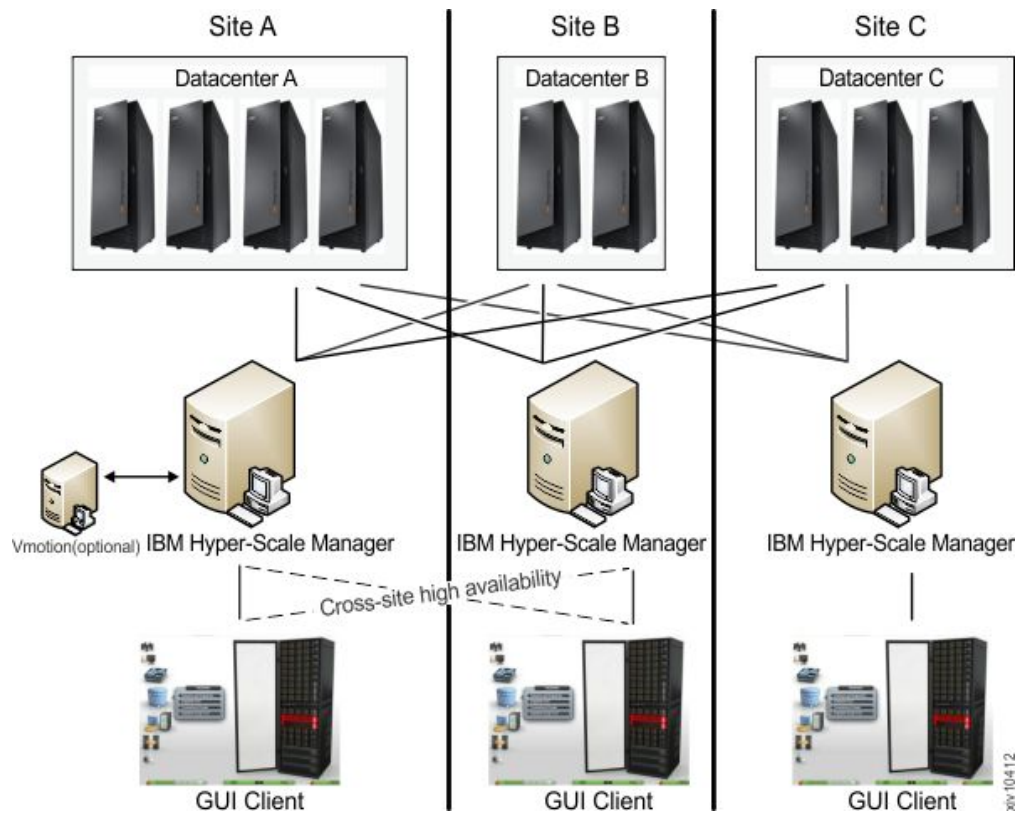
Figure 1. IBM Hyper-Scale Manager

Definitions

The following definitions are in wide use throughout this document:

Manager Mode vs. Direct Mode from the login dialog of the GUI
> With the introduction of the IBM XIV IBM Hyper-Scale Manager, there are two ways to use the IBM XIV Management Tools:

> **Manager mode**
>> Moving the GUI to work with the IBM Hyper-Scale Manager.

Direct mode
Using the GUI without IBM Hyper-Scale Manager. In this mode, the GUI manages the XIV Systems directly.

System machine account
The account which is used by the IBM Hyper-Scale Manager to connect to the XIV systems.

- This user does not change the configuration
- This user's name default is: *xiv_msms* and can be edited
- This user can be defined in LDAP (make sure it is added to all XIV storage admin groups in the LDAP)
- This user must have a storage administrator role (similarly to the *admin* user)
- This user must be defined with the same password on all XIV systems in the IBM Hyper-Scale Manager inventory
- This user must be defined in the IBM Hyper-Scale Manager (through the GUI or CLI)

Diagnose/Fix authentication problem
A process in which the GUI tries to fix the System Machine Account authentication issues among all XIV systems in the inventory.

- You need to supply admin credentials when launching this operation
- These credentials will be used to add the System Machine Account automatically to all your XIVs (if needed)
- If some of the XIV systems use LDAP authentication, it will inform you to manually add the System Machine Account to your LDAP directory

Discover new systems
A process in which the IBM Hyper-Scale Manager tries to authenticate a specific user in front of all of the systems that the IBM Hyper-Scale Manager knows that the user is not authenticated to.

- This button is located on the **Systems > Preferences** dialog.
- Use this button only when it is known that the user was added to the system's access list and you need to display this system on the GUI screen. This is not done automatically, because of potential LDAP locking issues, due to authentication errors.
- Upon a successful completion of the process, if the user was granted with an access to a system that was not previously seen in the GUI, it will now be seen.

Manager Access Code
Any administrative action on the IBM Hyper-Scale Manager, that is performed from the GUI requires the Manager Access Code. This code can be changed from GUI and from the management menu. The default manager access code is *adminadmin*. See here: "Changing the Manager access code" on page 31.

Management Tools specifications

Specifications for the Management Tools are available in the *IBM XIV Storage System Management Tools Release Notes* and the *IBM Hyper⌂Scale Manager Quick Start Guide for Installation as an Application*.

Release Notes documents are available in the IBM XIV Knowledge Center: http://www-01.ibm.com/support/knowledgecenter/STJTAG/ com.ibm.help.xivgen3.doc/Gen3/xiv_gen3releasenotes.dita.

Chapter 2. Installing the IBM Hyper-Scale Manager as an application

This section describes how to install IBM Hyper-Scale Manager as an application.

With the introduction of the IBM Hyper-Scale Manager, there are two ways to use the IBM XIV Management Tools:

Manager mode
> Moving the GUI to work with the IBM Hyper-Scale Manager.

Direct mode
> Using the GUI without IBM Hyper-Scale Manager. In this mode, the GUI manages the XIV Systems directly.

This section contains instructions for working with IBM Hyper-Scale Manager in **Manager** mode.

Installing IBM Hyper-Scale Manager requires using standard package managers (such as Rational Portfolio Manager) on a preinstalled Red Hat Enterprise Linux (RHEL) server.

Installing IBM Hyper-Scale Manager is composed of:

1. Installing the IBM Hyper-Scale Manager
2. Initializing the IBM Hyper-Scale Manager inventory

Installation-related tasks guide you through upgrading the IBM Hyper-Scale Manager and backing it up:

1. "Upgrading the IBM Hyper-Scale Manager" on page 15
2. "Backing up the IBM Hyper-Scale Manager" on page 19

Note: If you are already using a previous version of the IBM Hyper-Scale Manager as an application, skip the installation and initializing the inventory sections and go to "Upgrading the IBM Hyper-Scale Manager" on page 15.

Installing the IBM Hyper-Scale Manager as an application

This task describes how to install the IBM Hyper-Scale Manager stand-alone application.

Before you begin

Download the installation file from FixCentral. The name of the installation file is: `IBM-Hyper-Scale-Manager_1.7.0-x.bin`.

Administrative prerequisites

1. Refer to the Specifications section in the Release Notes
2. The installation takes place on a 64-bit RHEL 6.x OS
3. Disk space:

   Requirements
   - At least 1 GB of disk space in the `/tmp` directory

- 76 GB free space under the installation path (the path is configurable, and does not have to be the home directory)

Determining that the requirements are met

To determine the amount of disk space available, enter the following command:

```
$ df -h %DIRECTORY%
```

If there is less than 1GB / 76 GB of free disk space available in the /tmp/ installation directory:

- Delete unnecessary files from the /tmp/ installation directory to meet the disk space requirement.
- Extend the file system that contains the /tmp/ installation directory. If necessary, contact the system administrator for information about extending file systems.

4. The installation must be done with the *root* user.
5. The installation creates a new user, named *msms*, for running the application. You can either allow this user to be created automatically, or create it beforehand under a group named *msmsgroup*. This way, the user can be administered by the organization's LDAP.
6. If the host name cannot be resolved to an IP address, the installation will fail.

About this task

This task describes the installation of IBM Hyper-Scale Manager from a single installation file.

Procedure

1. FTP the downloaded installation package file into your RHEL server using the *root* user.
   a. Download and check the downloaded file size to ensure that you have downloaded the full, uncorrupted, IBM Hyper-Scale Manager as Application installer file.
      - Before you download the file, notice its byte size provided on the file stamps.
      - Once the download is complete, compare the file size to the size of the downloaded file to make sure they are equal.
   b. Upload the downloaded installation package file into your RHEL server with user root.
   c. Log in to your RHEL server and change the directory to the directory containing the installation package file.
   d. Make sure that run permissions are set. Run the following command:

```
$ chmod +x IBM-Hyper-Scale-Manager_1.7.0-x.bin
```

2. Run:

```
IBM-Hyper-Scale-Manager_1.7.0-x.bin
```

The following screen is displayed:

```
--------------------------------------------------------------------------------
---------     IBM Hyper-Scale Manager 1.7.0.x    ----------------
--------------------------------------------------------------------------------
IBM Hyper-Scale
Manager is going to be installed under a designated user 'msms'.
Hit Enter to accept the installation location [/home/msms]
or a different path to override>
```

3. Accept the installation location, or select another location and click Enter. You
   are asked to approve the installation:

```
IBM Hyper-Scale Manager version 1.7.0.x will be installed under /home/msms/hyperscale
Please approve to continue with the installation [y/n]
```

4. Enter y to approve the installation location. The license agreement menu is
   displayed on screen:

```
IBM Hyper-Scale Manager license agreement will be shown.
At any time you can hit '1' and 'Enter' to accept and continue the installation,
or '2' and 'Enter' to decline it and abort the installation.
Hit Enter to view the license agreement>
```

Press Enter to start viewing the license agreement. The license is shown in a
paging mode, letting you the option to accept or reject it at any page, using the
following keys:

1   To accept the license agreement and proceed with the installation.

2   To decline the license agreement and abort the installation.

Enter To view the next page of the license agreement.

5. After accepting the license, the IBM Hyper-Scale Manager is installing.

```
Installing IBM Hyper-Scale Manager RPM package
######################################## [100%]
######################################## [100%]
Please wait ...

Starting xivms service
xivms v1.7.0.x is starting...
IBM Hyper-Scale
Manager 1.7.0.x was successfully installed
```

The installation is now complete.

Results

Please note:

• Several *cronjobs* will be installed under the *msms* designated user *crontab*. It is
  strongly recommended to use its default values. In case you would like to
  change its timings, you can do so manually.
• Please make sure that all of the required ports are opened in the OS firewall:
  – Outbound/Inbound: RMI - 1199-1204
  – Inbound only: SSH/SCP - 22
  – Outbound only: SMTP - 25
    - Communication with XIV systems - 7778
    - RESTful API port - 8443

What to do next

Proceed to "Initializing the inventory."

Configuring the IBM Hyper-Scale Manager to work with multiple network interfaces

If multiple network interfaces exist in the system, the IBM Hyper-Scale Manager server defaults to using the `eth0` network interface.

About this task

This task occurs after the initial installation. If no network interface is configured, the default is `eth0`. Follow the procedure to manually configure a network interface:

Procedure

1. Create an `/etc/profile.d/hsm_defs` directory.
2. Create the following file and place it in the directory: `HSM_NIC=<eth name>` (for example, `HSM_NIC=eth1`).
3. Stop the `xivms` service.

   ```
   [root@hostname ~]#service xivms stop
   ```

4. Start the `xivms` service.

   ```
   [root@hostname ~]#service xivms start
   ```

Results

The IBM Hyper-Scale Manager works with the newly configured network interface.

Initializing the inventory

Install the XIV GUI and configure it to work with IBM Hyper-Scale Manager.

Before you begin

- If you are using previous GUI versions, open the previous GUI and export systems list (**File > Export Systems File**) to a file in your local file system (to be imported later to the IBM Hyper-Scale Manager).
- Obtain the GUI from http://www-933.ibm.com/support/fixcentral/swg/ selectFixes?parent=Enterprise+Storage+Servers&product=ibm/Storage_Disk/ XIV+Storage+System+(2810,+2812)&release=4.6&platform=All&function=all.

About this task

This task guides you through the following:

- Installing the XIV GUI and configuring it to be managed by the IBM Hyper-Scale Manager.
- Initializing the systems inventory on the IBM Hyper-Scale Manager.

Procedure

1. Install XIV GUI and launch it in Direct mode.
2. Connect the GUI to the IBM Hyper-Scale Manager.

   a. Select **Systems > Preferences** from the menu. The **User Preferences** screen opens. Complete the **Primary Management Server** field and click **OK**.
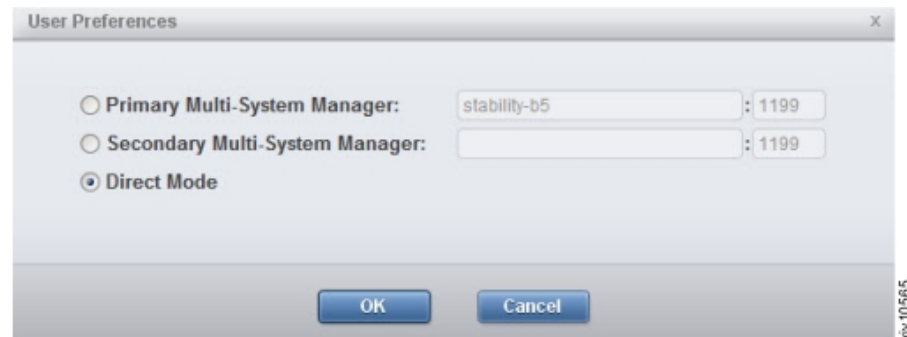
Figure 2. IBM Hyper-Scale Manager Primary Management Server

   b. The **Certificate Details** screen opens. The IBM Hyper-Scale Manager version 1.x is published using an XIV default that is not signed by a CA, certificate. You can either:
   - **Trust Once** - only for the current GUI session.
   - **Trust Always** - never being asked again about it.
   - Replace the IBM Hyper-Scale Manager certificate.
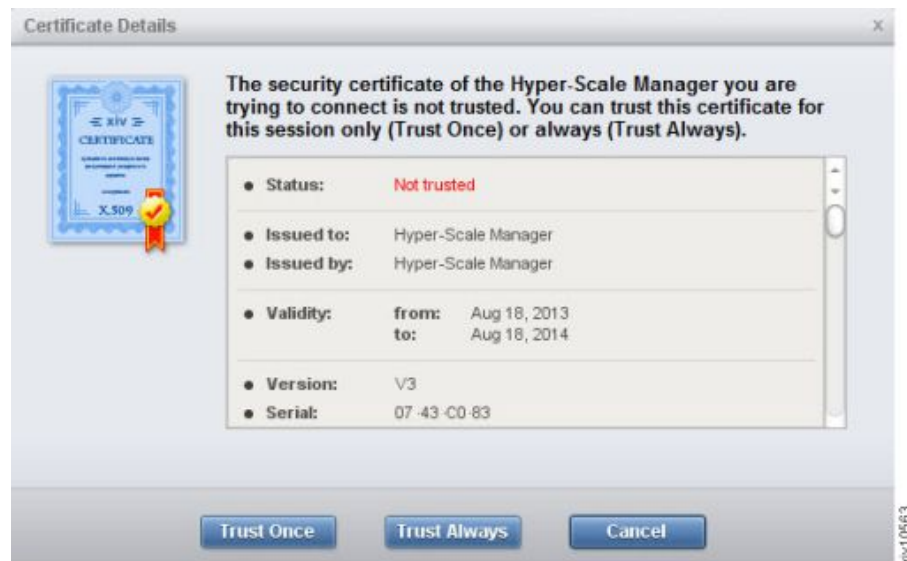
Figure 3. The Certificate Details screen

3. Configure the System Machine Account credentials. Open the **Systems > Manager Configuration** dialog. You will be prompted to provide the Manager Access Code.

   a. Fill the access code on the **IBM Hyper-Scale Manager Access Code** screen.
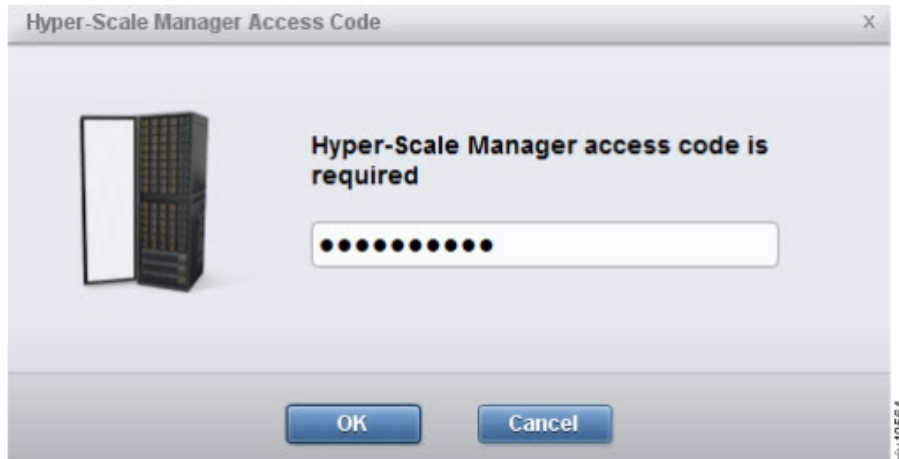
Figure 4. IBM Hyper-Scale Manager Access Code

> In case the Manager Access code was not defined yet, the default is *adminadmin*. Read more about the Manager Access code on the "Definitions" on page 1 section.

b. Open the **Credentials** tab of the **Manager Configuration** screen. Check the **Remember Me** checkbox to eliminate the need to type the access code whenever you access the IBM Hyper-Scale Manager from the GUI.

Figure 5. The Remember Me checkbox

4. On the same screen, determine a new password for the Systems Machine Account (this is a system user that will monitor it on the IBM Hyper-Scale Manager). Fill the **Systems Machine Account** password and click **OK**.

Note: Only a correct access code can grant you access to the **Manager Configuration** screens.

5. On the **Manager Configuration** screen, open the **Inventory** tab. Perform the following sub steps:

a. If you have a previously exported system XML file, Click **Import systems from file**, browse to the XML file and import it. Else, jump to bullet **b**.
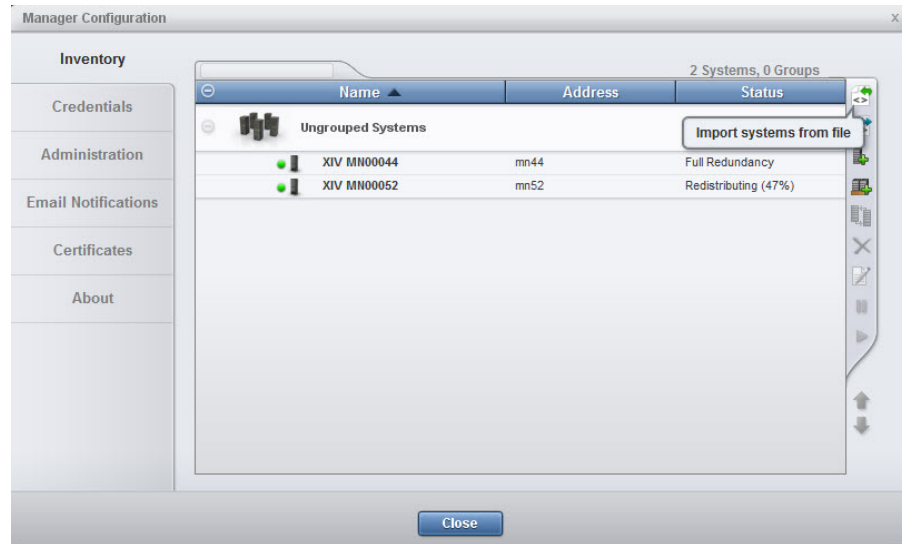
Systems are added to the screen.

b. If the added screens get an `Authentication Error` status, select the not authenticated systems, right-click and select: **Diagnose/Fix Authentication Error** from the context menu. Read more on the diagnose and fix process on the "Definitions" on page 1 topic.

Installing another IBM Hyper-Scale Manager

IBM Hyper-Scale Manager can be installed on more than one instance.

The number of IBM Hyper-Scale Manager instances that you can install is limitless. Each of these IBM Hyper-Scale Manager instances can monitor all XIV Systems in your organization. There is no redundancy or communication between the managers themselves.
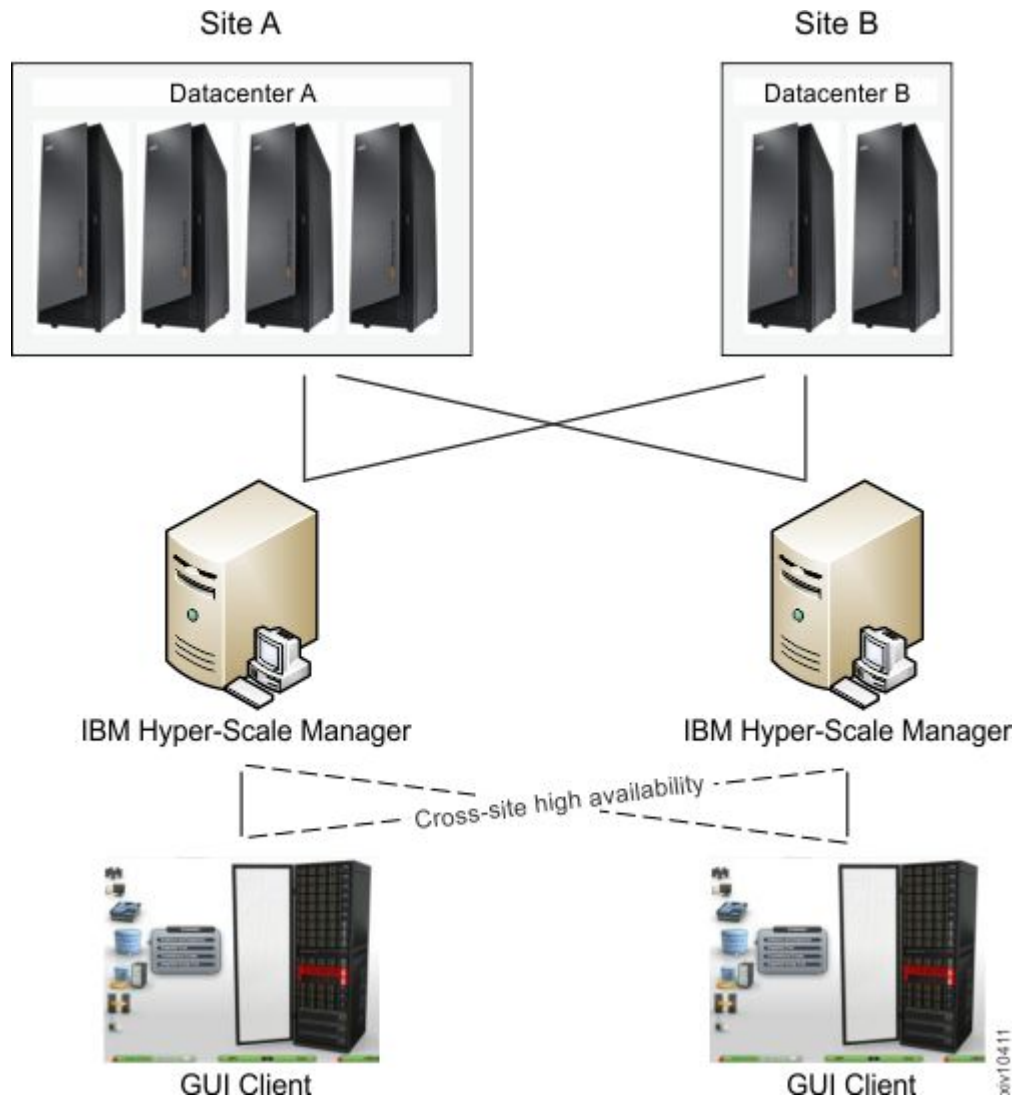
Figure 6. Cross site high availability

The GUI can be connected to two IBM Hyper-Scale Manager instances (Primary and Secondary) for the use of manual switch over in case one is not responding. This way, you can achieve high availability of Multi System Managers.

Using this architecture, you can gain high performance of the GUIs by connecting them to a IBM Hyper-Scale Manager located in their site, whereas other remotely located GUIs will connect to another Multi System Manager that is located on their site.

Best practice

While installing the new IBM Hyper-Scale Manager instance, set the Manager Access Code to be identical to the existing code.

Uninstalling the IBM Hyper-Scale Manager as an application

This task describes how to uninstall the IBM Hyper-Scale Manager stand-alone application.

Before you begin

Always use the **Uninstall** menu option to uninstall the IBM Hyper-Scale Manager.

Note: Do not delete the installation directory manually.

About this task

This task describes how to uninstall the IBM Hyper-Scale Manager.

Procedure

1. From the directory of the installation package, run IBM-Hyper-Scale-Manager_1.7.0-x.bin. The following screen is displayed:

```
--------------------------------------------------------------------------
    ------     IBM Hyper-Scale Manager 1.7.0.x    -------
--------------------------------------------------------------------------
IBM Hyper-Scale Manager version 1.7.0.76 is already installed on this server.
Please select one of the following:
1) Uninstall
2) Exit
```

2. Select 1) Uninstall. Wait for the notification that Uninstall is complete.

Chapter 3. Upgrading the IBM Hyper-Scale Manager

This chapter explains how to upgrade or roll-back the IBM Hyper-Scale Manager version.

The following tasks describe how to upgrade the IBM Hyper-Scale Manager to the most recent version available, or how to roll-back an unsuccessful upgrade.

Upgrading the IBM Hyper-Scale Manager

Upgrade the IBM Hyper-Scale Manager to the most recent version available.

Before you begin

Make sure you have an installation file that is newer than what you currently have.

About this task

This section describes how to upgrade to the current version of the IBM Hyper-Scale Manager. As part of the upgrade, this procedure backs up the IBM Hyper-Scale Manager inventory configuration. More details about the backup procedure are available here: "Backing up the IBM Hyper-Scale Manager" on page 19.

Procedure

1. Back up the database:

   Note: A complete instruction set for backing up the IBM Hyper-Scale Manager is available on Chapter 4, "Backing up and restoring the Manager," on page 19. For the purpose of this task, follow the instructions below.

   a. Select 4 on the management menu. The `Backup and Restore Menu` is displayed on screen.

   ```
   Backup and Restore Menu
   -----------------------

   1) Backup
   2) Restore
   3) Schedule Daily Backup
   4) Remove Scheduled Backup
   5) Exit
   Your Selection>
   ```

   b. Select 1 to back up the database. The backup process takes place:

   ```
   Your Selection>1
   Backing up...
   Backup completed successfully
   Press any key to continue
   ```

   c. Press any key to return to the `Backup and Restore Menu`.

2. Download the installation file.

3. Upload the file to the RHEL Server using the *root* user.

4. Login to your RHEL server and change directory to the directory contains the installation package file.
5. Run this command:

```
$ chmod +x IBM-Hyper-Scale-Manager_1.7.0-x.bin
```

6. Run the installation package file. Execute the downloaded file by Running this command:

```
IBM-Hyper-Scale-Manager_1.7.0-x_SA.bin
```

7. Choose the **Upgrade** option.

What to do next

In case the upgrade fails, go to "Rolling-back the IBM Hyper-Scale Manager upgrade" on page 17.

Upgrading the IBM Hyper-Scale Manager from the GUI

Opening the XIV GUI in Management mode automatically checks the version of the IBM Hyper-Scale Manager. If the version installed is not the latest, you are prompted to upgrade.

About this task

This procedure does not back up the IBM Hyper-Scale Manager inventory configuration.

See Backup and Upgrade sections on **this Installation Guide**.

Procedure

1. Whenever the following XIV GUI screen opens, click **Upgrade Manager**. A window similar to the following is displayed:

Figure 7. Upgrading the IBM Hyper-Scale Manager from the GUI

2. Accept the Software License Agreement. The IBM Hyper-Scale Manager is upgraded and a window similar to the following is displayed:

Figure 8. The IBM Hyper-Scale Manager is upgraded

What to do next

In case the upgrade fails, go to the **Roll-back** section on this guide.

Rolling-back the IBM Hyper-Scale Manager upgrade

If the upgrade is unsuccessful, there is a need for a roll-back.

About this task

This section describes what to do in case that the upgrade fails. The section specifies how to roll-back the upgrade of the IBM Hyper-Scale Manager. This procedure restores the IBM Hyper-Scale Manager inventory configuration that was previously backed up. More details about the backup procedure are available here: "Backing up the IBM Hyper-Scale Manager" on page 19.

Procedure

1. FTP the installation kit to the RHEL Server using the *root* user.
2. Run the installation kit. Select **Uninstall** from the menu.
3. Run the installation kit again and follow the installation instructions.
4. Restore the previously backed-up database. See here: "Restoring the IBM Hyper-Scale Manager" on page 20.

Chapter 4. Backing up and restoring the Manager

The tasks in this section explain how to back up and restore the inventory configuration of the IBM Hyper-Scale Manager.

Backing up the IBM Hyper-Scale Manager

This section describes how to back up the inventory configuration of the IBM Hyper-Scale Manager.

About this task

All of the backup and restore options are accessible from the *Management* menu in the RHEL OS shell. This section describes the best practice.

The backup file is version-specific. It can be restored into a IBM Hyper-Scale Manager of the same version. Whenever you upgrade the IBM Hyper-Scale Manager to a new version, create a new backup file.

The backup procedure backs up the following configurations:
- IBM Hyper-Scale Manager inventory
- Users workspaces - where information about users and the systems they work on is saved
- RMI ports
- Trusted certificate
- SMTP configuration

The backup process does not backup other configurations and data, such as:
- Network and NTP
- System Machine Account password (See "Changing the System Machine Account password" on page 28).
- Manager Access Code (See "Changing the Manager access code" on page 31).
- IBM Hyper-Scale Manager certificate (see here: "Replacing the IBM Hyper-Scale Manager certificate" on page 31)
- IBM Hyper-Scale Manager logs

In order to configure these not-to-be-saved configurations, please refer to the relevant sections on this user guide.

Procedure
1. SSH using the *root* user to the Server and `su - msms`. alternately, login with *msms* if SSH is enable for this user.
2. Run `~/msms/msms_management.sh`. A symbolic link resides within the *msms* home directory, so this command can be run from anywhere.
3. Select 4 on the management menu. The `Backup and Restore Menu` is displayed on screen.

```
Backup and Restore Menu
-----------------------

1) Backup
2) Restore
3) Schedule Daily Backup
4) Remove Scheduled Backup
5) Exit
Your Selection>
```

4. Select 1 to back up the database. The backup process takes place:

```
Your Selection>1
Backing up...
Backup completed successfully
Press any key to continue
```

The backup is stored in the `files/backup` directory under the `/hyperscale` directory in the installation path.

5. Press any key to return to the `Backup and Restore Menu`.
6. Export the backup to an external device.

Restoring the IBM Hyper-Scale Manager

This section describes how to restore the inventory configuration and preferences of the IBM Hyper-Scale Manager from a backup.

About this task

All of the backup and restore options are accessible from the *Management* menu in the RHEL OS shell. This section describes the best practice.

The backup file is version-specific. It can be restored into a IBM Hyper-Scale Manager of the same version. Whenever you upgrade the IBM Hyper-Scale Manager to a new version, create a new backup file.

The restore procedure restores the following configurations:
- IBM Hyper-Scale Manager inventory
- Users workspaces - where information about users and the systems they work on is saved
- RMI ports
- Trusted certificate
- SMTP configuration

The restore process does not restore other configurations and data, such as:
- Network and NTP
- System Machine Account password (See "Changing the System Machine Account password" on page 28).
- Manager Access Code (See "Changing the Manager access code" on page 31).
- IBM Hyper-Scale Manager certificate (see here: "Replacing the IBM Hyper-Scale Manager certificate" on page 31)

In order to configure these not-restored configurations, please refer to the relevant sections on this user guide.

Procedure

1. FTP the backup file to the `files/backup` folder under the `/hyperscale` directory in the installation path.
2. SSH using *root* to the Server.
3. Restore the IBM Hyper-Scale Manager database to the target Manager. On the menu of the target IBM Hyper-Scale Manager, click 2 to restore the database.

```
Backup and Restore Menu
-----------------------

1) Backup
2) Restore
3) Schedule Daily Backup
4) Remove Scheduled Backup
5) Exit
Your Selection>
```

a. Select a file to restore from:

```
Your Selection>2
Backup files to restore (the first is most recent):
-----------------------
1) BACKUP_20150519_162219.tar.gz   3) BACKUP_20150519_162156.tar.gz
2) BACKUP_20150519_162211.tar.gz

Enter a number (from 1 to 3) to select a file or 'q' to quit >1

Are you sure that you want to restore BACKUP_20150519_162219.tar.gz? [Y/N] >y
```

b. Click Y to confirm.

c. Confirm again:

```
Restore DB is going to override your current configuration.
It is recommended to run a backup prior restoring.
Do you want to run backup of the current configuration before restoring? [Y/N] >y
```

d. The restore takes place:

```
Backing up...
Backup completed successfully
Backup archive is in: /home/msms/hyperscale/files/backup/BACKUP_20150519_162717.tar.gz
xivms v1.7.0.74 has stopped

Restoring from BACKUP_20150519_162219.tar.gz...
The restore is successfully completed.

Note: The following configurations were not restored ( the previous configurations were kept ):
 - System Machine Account password
 - Manager Access Code
 - Manager Certificate
If you wish to set them, please refer to the user guide for further explanations.

xivms v1.7.0.74 is starting...
```

e. When the restore is complete, press any key to return to the **Backup and Restore** menu.

4. Redefine the following:

The System Machine Account

See a definition to the System Machine Account here: "Definitions" on page 1.

You can configure it either from the GUI or on the IBM Hyper-Scale Manager menu.

On the GUI

Follow the instructions on step 4 of the "Initializing the inventory" on page 8 section.

From the IBM Hyper-Scale Manager menu

Go to: "Changing the System Machine Account password" on page 28.

The Manager Access Code

See a definition to the Manager Access Code here: "Definitions" on page 1.

You can configure it either from the GUI or on the IBM Hyper-Scale Manager menu.

On the GUI

Follow the instructions on step 4 of the "Initializing the inventory" on page 8 section.

From the IBM Hyper-Scale Manager menu

Go to: "Changing the Manager access code" on page 31.

Chapter 5. Migrating data to IBM Hyper-Scale Manager as an Application

Starting with IBM XIV Management Tools version 4.6, IBM Hyper-Scale Manager is provided only as a Red Hat Enterprise Linux application. Upgrading IBM Hyper-Scale Manager as a Virtual Appliance requires migrating your data to IBM Hyper-Scale Manager as an Application.

This section explains how to migrate data from IBM Hyper-Scale Manager as a Virtual Appliance to IBM Hyper-Scale Manager as an Application.

Backing up and restoring data from the IBM Hyper-Scale Manager Virtual Appliance

This task explains how to backup and restore data from the IBM Hyper-Scale Manager Virtual Appliance to IBM Hyper-Scale Manager as an Application.

Before you begin

Make sure that IBM Hyper-Scale Manager version 1.7 is installed on the target RHEL application server.

Procedure

1. Log in to the IBM Hyper-Scale Manager Virtual Appliance via SSH as a Super User.
2. Select `Backup/Restore Options` from the menu:

```
Super User Menu
----------------------
IBM Hyper-Scale Manager is running

1) Server Configuration Options
2) Gather Manager Logs
3) Show Audit Log
4) Show Upgrade Logs
5) Manager Inventory Options
6) Backup/Restore Options
7) Change 'root' Password
8) Change 'maintenance' Password
9) Change Manager Access Code
10) Start/Stop Hyper-Scale Manager Service
11) Replace Hyper-Scale Manager Certificate
12) Change XIV GUI Communication Ports
13) Change RESTful Interface Port
14) Upgrade Hyper-Scale Manager
15) Reboot
16) Shutdown
17) Exit
Your Selection>6
```

3. From the `Backup and Restore Menu`, select `Backup`:

```
Backup and Restore Menu
-----------------------

1) Backup
2) Restore
3) Schedule Daily Backup
4) Remove Scheduled Backup
5) Back to previous menu
Your Selection>1
Backing up...
Backup completed successfully
SFTP using maintenance account and get the file:
/files/backup/BACKUP_20150511_133109.tar.gz
Press any key to continue
```

4. Establish an SFTP connection (as a `msms` user) between the IBM Hyper-Scale Manager Virtual Appliance and the target IBM Hyper-Scale Manager Application server.

5. Using SFTP, copy the backup file (tar.gz) from the IBM Hyper-Scale Manager Virtual Appliance server to `<defined_hyperscale_path>/files/backup` directory on the IBM Hyper-Scale Manager Application server.

6. On the IBM Hyper-Scale Manager Application server, run the Hyper-Scale Manager management menu:

```
User Menu
-----------------------
IBM Hyper-Scale Manager is running

1) IBM Hyper-Scale Manager Inventory Options
2) Show Audit Log
3) Gather IBM Hyper-Scale Manager Logs
4) Backup/Restore Options
5) Change Manager Access Code
6) Replace Hyper-Scale Manager Certificate
7) Change Network Settings
8) SMTP Configuration
9) Start/Stop Hyper-Scale Manager Service
10) Exit
Your Selection>4
```

7. Select `Backup/Restore Options`.

8. From the `Backup and Restore Menu` menu, select `Restore`. All of the relevant backup files appear numbered. The IBM Hyper-Scale Manager Virtual Appliance backup file should also appear and should be used to complete the migration.

9. Enter the number corresponding to the migration file and accept the terms. All of the data and configurations are successfully migrated from IBM Hyper-Scale Manager Virtual Appliance to the IBM Hyper-Scale Manager Application.

What to do next

When the procedure is complete, the following configurations are not restored:
- System Machine Account password
- Manager Access code
- Manager Certificate

Continue with "Restoring the IBM Hyper-Scale Manager" on page 20.

Chapter 6. IBM Hyper-Scale Manager menu options

This section describes the IBM Hyper-Scale Manager menu options.

Before you begin

Access this menu by logging in as a root or *msms* user and run the
~msms/management_menu.sh script.

About this task

The IBM Hyper-Scale Manager menu provides access to systems management
operations.

Procedure

Run ~msms/management_menu.sh. The following menu is displayed:

```
-----------------------------------------------------------------
------------- IBM XIV Hyper-Scale Manager v1.7.0.x ---------------
-----------------------------------------------------------------

User Menu
---------------
IBM XIV Hyper-Scale Manager is running

 1) IBM XIV Hyper-Scale Manager Inventory Options
 2) Show Audit Log
 3) Gather IBM XIV Hyper-Scale Manager Logs
 4) Backup/Restore Options
 5) Change Manager Access Code
 6) Replace IBM XIV Hyper-Scale Manager Certificate
 7) Change Network Settings
 8) SMTP Configuration
 9) Start/Stop Hyper-Scale Manager Service
10) Exit
Your Selection>
```

What to do next

The following sections explain how to perform the operations from this menu.

Managing inventory options

The inventory options allow for adding, modifying and removing XIV systems
from being managed by the IBM Hyper-Scale Manager.

About this task

This menu lists all inventory management options.

Procedure

Select 1 on the menu. The Manager Inventory Configuration menu is displayed on
screen.

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

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) Manage Capacity Planning Data
11) Back to previous menu
Your Selection>
```

What to do next

The following sections explain how to carry out inventory-related operations.

The following menu items are documented on the Operations Guide:
- Manage system certificates
- Manage capacity planning data

System inventory list

The system inventory list displays the XIV Systems monitored by IBM Hyper-Scale Manager and their status.

About this task

This task allows you to view the inventory list.

Procedure

1. Select 1 on the `Manager Inventory Configuration` menu. The `System Inventory List` opens on screen. For each system, the list displays its name, address, status and ID.

```
Your Selection>1
---------------------------------------------------------------
Name            Addresses                     Status              Id

---------------------------------------------------------------
Gen3p1-04       Gen3p1-04                     Authentication Failure  Gen3p1-0
4::null:null
qa16            qa16                          Authentication Failure  qa16::nu
```

2. Press any key to return to the `Manager Inventory Configuration` menu.

Adding a system to the inventory

This menu option adds an XIV System to the inventory.

Procedure

1. Select 2 on the `Manager Inventory Configuration` menu. You are asked to enter the new system.

```
Your Selection>2
Enter new system addresses in the following format: address1 [address2] [address3]>
```

2. Enter the address of the new system.

Results

The system is added to the inventory and can be viewed from the system inventory list.

Modifying an XIV system in the inventory

This menu option modifies an XIV System to the inventory.

Procedure

1. Select 3 on the `Manager Inventory Configuration` menu. The following message is displayed on screen:

```
Your Selection>3
Enter a system address/ID to modify >
```

2. Enter the system's address or ID and then enter the new system addresses:

```
Your Selection>3
Enter a system address/ID to modify >qa16
Enter new addresses in the following format: address1 [address2] [address3]>
```

The system is now modified.

Removing a system from the inventory

This menu option removes an XIV System in the inventory.

Procedure

1. Select 4 on the `Manager Inventory Configuration` menu. A message is displayed on screen:

```
Your Selection>4
Enter a system address/ID to remove (--all for all systems) >
```

2. Enter an address or ID in order to remove a single system. Alternately, enter `--all` in order to remove all of the systems.

Suspending a system from monitoring

This menu option suspends an XIV System from being monitored by the IBM Hyper-Scale Manager.

Procedure

1. Select 5 on the `Manager Inventory Configuration` menu. A message is displayed on screen:

```
Your Selection>5
Enter a system address/ID to suspend (--all for all systems) >
```

2. Enter an address or ID in order to suspend a single system. Alternately, enter `--all` in order to suspend all of the systems.

Resuming the monitoring of a suspended XIV System

This menu option resumes the monitoring of a suspended XIV System.

Procedure

1. Select 6 on the `Manager Inventory Configuration` menu. A message is displayed on screen:

```
Your Selection>6
Enter a system address/ID to resume (--all for all systems) >
```

2. Enter an address or ID in order to resume a single suspended system. Alternately, enter `--all` in order to resume all of the suspended systems.

Re-authenticating users

This menu option re-authenticates the users across all of the XIV systems that are managed by the IBM Hyper-Scale Manager.

Procedure

1. Select 7 on the `Manager Inventory Configuration` menu. A message is displayed on screen:

```
Your Selection>7
This option will force re-authentication of all logged-in users. Are you sure? [Y/N] >
```

2. Press Y to continue. A message is displayed on screen:

```
Are you sure? [Y/N] >y
Invalidating all authentication records.
Logged in users will be re-authenticated automatically.
Press any key to continue
```

3. Press any key to perform the user authentication.

Changing the System Machine Account password

This menu option changes the System Machine Account password.

About this task

See a definition of the System Machine Account here: "Definitions" on page 1.

The password can be changed either from the `Manager Inventory Configuration` menu or via the GUI.

In addition, the password needs to be changed on all systems.

Procedure

Select whether to use the `Manager Inventory Configuration` menu or the GUI:

On the administrator menu
See here: "Managing inventory options" on page 25.

On the GUI
1. Login to the GUI using the manager access code (see here: "Initializing the inventory" on page 8).

2. Go to menu: **Systems > Manager Configuration > Credentials**. Fill in the System Machine Account password and click **Update**.

3. Re-authenticate the systems according to the new password: open **Systems > Manager Configuration> Inventory**. Wait until the systems arrive to the status of `Authentication Error`, select all those systems (using the CTRL or SHIFT keys), right-click and select **Diagnose/Fix Authentication error** from the context menu. Read more on the diagnose and fix process on the "Definitions" on page 1 topic.

Displaying the audit log

This menu option displays a log of IBM Hyper-Scale Manager configuration activities.

About this task

The audit log displays the following Server Admin activities:
- Adding a system to the inventory
- Modifying the system address
- Removing a system from the inventory
- Suspending the monitoring of a system
- Suspending the monitoring of all of the systems
- Resuming the monitoring of a system
- Resume the monitoring of all of the systems
- Removing all of the systems from the inventory
- Setting the System Machine Account credentials
- Invalidating the user authentication
- Adding a System Machine Account user to a specific system
- Importing the system certificate
- Accepting the system certificate
- Removing the system certificate

The audit log is stored into a file that can be collected. See "Gathering the server logs."

Procedure

1. Click 2 on the management menu. A log is collected and is displayed on screen.

```
Your Selection>2
18:05:13,924 admin    Remove all systems from the inventory.        [Success]
11:32:38,964 admin    Remove system 9.151.133.239 from the inventory [Success]
11:32:48,423 admin    Add system [mn00010:7778] to the inventory     [Success]
11:33:07,202 admin    Robot user credentials change
                      [Failed: Password was not changed]
11:34:39,320 admin    Robot user credentials change                 [Success]
```

2. Pressing any key returns you to the `Super User` menu.

Gathering the server logs

The Gather Server Logs menu option allows you to gather logs of the server activity.

About this task

This task allows you to gather server logs.

Procedure

1. Select 2 on the management menu. A log is collected and the file name is
   displayed on screen.

```
Your Selection>2
Gathering IBM Hyper-Scale Manager logs...
Gather logs completed successfully
You can FTP the archive file that contains all the logs from the
hyperscale/files/logs folder
Press any key to continue
```

2. Pressing any key returns you to the management menu.

Backing up the server database

The Backup/Restore menu options allow you to backup the server database and to
restore this database from a backup.

About this task

The information stored on the IBM Hyper-Scale Manager database can be backed
up and restored from this menu. This database contains the inventory
configuration. Backing it up helps you to recover from a disaster in order to
maintain service continuity by restoring the inventory. It can also be used for
copying the inventory configuration from one IBM Hyper-Scale Manager to
another.

Procedure

Select 4 on the management menu. The Backup and Restore Menu is displayed on
screen.

```
Backup and Restore Menu
-----------------------

1) Backup
2) Restore
3) Schedule Daily Backup
4) Remove Scheduled Backup
5) Exit
Your Selection>
```

What to do next

Backup and restore
>   A detailed instructions set for backup and restore is available on this
>   section: Chapter 4, "Backing up and restoring the Manager," on page 19.

Scheduling - and removing a schedule for - a daily backup
>   See the next sections.

See the next sections for detailed instructions about each menu option.

Scheduling a daily backup

The Schedule Daily Backup menu item allows you to schedule a daily backup job. The default daily backup runs at 23:30.

Procedure

1. Select 3 to schedule a back up. The current daily backup schedule is also displayed on screen:

   ```
   Your Selection>3
   Select time (HH:MM) to run backup every day [23:30]? >
   ```

2. Select a new backup time in an HH:MM format.

   ```
   Your Selection>3
   Select time (HH:MM) to run backup every day [23:30]? >15:00
   Scheduled daily backup at 15:00
   Press any key to continue
   ```

3. Press any key to return to the Backup and Restore menu.

Removing a scheduled backup

The Remove Scheduled Backup menu item allows you to clear the daily backup job.

Procedure

1. Select 4 to remove a schedule.

   ```
   Your Selection>4
   Removed scheduled backup
   Press any key to continue
   ```

   The schedule is cleared.

2. Press any key to return to the Backup and Restore menu.

Changing the Manager access code

This section describes how to change the Manager access code.

Procedure

1. From the Management menu, select 5) Change Manager Access Code.
2. Enter a new access code.

Replacing the IBM Hyper-Scale Manager certificate

This task guides you through replacing the default IBM Hyper-Scale Manager certificate with your organization's certificate.

Before you begin

- Prepare a certificate file in PKCS12 format.
- FTP the file to the *hyperscale/files/upload* folder.

About this task

The IBM Hyper-Scale Manager is shipped with a default certificate. This task guides you through replacing the default certificate with your organization's certificate.

Procedure

1. Select 6 on the management menu.

```
Your Selection>6

This operation requires IBM Hyper-Scale Manager restart. Are you sure you want to
continue? [y/N] y
This script installs a new certificate.
You need to prepare a certificate file in PKCS#12 format.
Place the file to '/home/msms/hyperscale/files/upload' folder.

Press any key to see the certificate files found under the
'/home/msms/hyperscale/files/upload' folder
```

2. The available certificates that are on the *upload* folder are displayed on screen.

```
Certificate files found under the '/home/msms/hyperscale/files/upload' folder:
--------------------------------------------------
Test-ErezCert_03_4096-cert.p12

Please enter a certificate file name [] >
```

3. Enter a certificate file name and the key password.

```
Please enter a certificate file name [] >Test-ErezCert_03_4096-cert.p12
Enter the certificate key password >
The new certificate is successfully installed.
The Hyper-Scale Manager service needs to be restarted so the changes will take effect.
Restart now? [Y/N] >
```

4. Approve restarting the IBM Hyper-Scale Manager service.

Results

The server certificate is now replaced. You are returned to the User Menu.

What to do next

The next time the GUI connects to the server, it will have to approve (trust) the new certificate.

Changing the XIV GUI communication ports

This task allows you to change the ports through which the IBM Hyper-Scale Manager connects with the IBM XIV Storage Management GUI.

About this task

The IBM Hyper-Scale Manager connects to the XIV GUI via 6 reserved, consecutive ports, starting with port 1199.

Procedure

1. From the Management menu, select 7) Network Settings Options. The Network Settings Options menu is displayed:

```
Network Settings Options
------------------------
1) Select Network Adapter
2) Change XIV GUI Communication Ports
3) Change RESTful Interface Port
4) Back to previous menu
Your Selection>
```

2. Select 2) Change XIV GUI Communication Ports. The following output is displayed:

```
This operation requires IBM Hyper-Scale Manager restart and firewall configuration. Are you sure you want
```

3. Type y to continue. The number of the first port among the consecutive six is displayed on screen, for example, 1199.

```
The communication between XIV GUI and the IBM Hyper-Scale Manager
is done via 6 consecutive, reserved ports.

Please enter a new starting port number higher than 1024 [1199] >
```

4. Enter a new port number that is higher than 1024. In this example, the entered port number is 1340.

```
Please enter a new starting port number [1199] >1340
```

The new sequence of six port numbers, 1340 to 1345, is also displayed on screen.

```
You are going to change the reserved ports from 1199-1204
to 1340-1345. Are you sure? [Y/N] >y
```

5. Type Y to change the ports.

What to do next

When the operation is finished, follow the next steps to complete this change:

1. Make sure the ports are open in any firewall between the XIV GUI and the IBM Hyper-Scale Manager.
2. Restart the IBM Hyper-Scale Manager service from the User Menu.
3. Restart the iptables service by running: service iptables restart and press any key to continue.
4. Change the communication ports that connect the GUI to the IBM Hyper-Scale Manager through the **System > Preferences** menu.
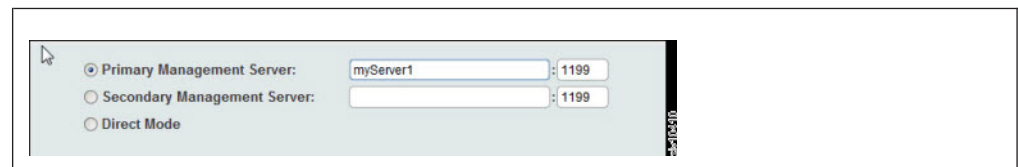
Changing the RESTful Interface ports

This task allows you to change the ports through which the IBM Hyper-Scale Manager connects with the RESTful Interface.

About this task

The IBM Hyper-Scale Manager connects to the XIV GUI via a reserved port.

Procedure

1. From the `Management` menu, select `7) Network Settings Options`. The `Network Settings Options` menu is displayed:

```
Network Settings Options
------------------------
1) Select Network Adapter
2) Change XIV GUI Communication Ports
3) Change RESTful Interface Port
4) Back to previous menu
Your Selection>
```

2. From the `Network Settings Options` menu, select `3) Change RESTful Interface Port`. The following is displayed:

```
This operation requires IBM Hyper-Scale Manager restart and firewall configuration. Are you sure you want to
```

3. Type `y` to continue. The following is displayed:

```
Please enter a new RESTful interface port number [8443] >
```

4. Enter a new port number. In this example, the entered port number is 8441.

```
You are going to change the reserved ports from 8443 to 8441. Are you sure? [Y/N] >y
```

5. Type `Y` to approve the change.

What to do next

When the operation is finished, follow the next steps to complete this change:

1. Make sure this port is open in any firewall between the REST API client and the IBM Hyper-Scale Manager.
2. Restart the IBM Hyper-Scale Manager service from the User Menu.
3. Restart the `iptables` service by running: `service iptables restart` and press any key to continue.

Configuring SMTP settings

This task allows you to configure the SMTP settings through which the IBM Hyper-Scale Manager sends notifications.

About this task

SMTP configuration is utilized for enabling sending email messages to any recipient you configure in case of a service failure. The available SMTP email messages are:

Server is up
> Subject: `<hostname> Service xivms is up and running properly.`

> Body: `Component: Main process was started successfully and is up and running.`

Server is down

Subject: <hostname> `Attention: service xivms stopped functioning properly.`

Body: `Component: Main process stopped.`

Server has low disk space

Subject:<hostname> `Attention: low disk space.`

Body: `Disk space passed the configured threshold max% and its usage now is: used%.`

System Machine Account is not authenticated

Subject: <hostname> System Machine Account alert.

Body: `The System Machine Account (user: xiv_msms) is not authenticated to work with the following systems:` `<system name>`

Procedure

1. From the Management menu, select 8) `SMTP Configuration`. The `SMTP Configuration` menu is displayed.

```
SMTP Configuration
-----------------

#-----------------------------------
# Active SMTP configuration
# ----------------------------------
# SMTP status          DISABLED


1) Enable SMTP configuration
2) Exit
Setup/SMTP>
```

2. Select 1 to enable SMTP configuration. Enter the SMTP server address and sender email:

```
SMTP Configuration
-----------------

#-----------------------------------
# Active SMTP configuration
# ----------------------------------
# SMTP status          DISABLED


#-----------------------------------
# New SMTP configuration
#-----------------------------------
# SMTP status          ACTIVE
# SMTP server          9.9.9.9
# SMTP port            25
# Email for authorization  msms@ibm.com
# Destinations


Configure SMTP destinations

1) Add Destination
2) Remove Destination
3) Remove All Destinations
4) Send Confirmation E-Mail
5) Apply SMTP settings
6) Return Without Saving
Setup/SMTP/Destinations>
```

3. Configure SMTP destination menu opens on screen:

Add destination
>Add a recipient address to SMTP notifications.

Remove destination
>Remove the last entered destination.

Remove all destinations
>Remove all of the entered destinations.

Send confirmation email
>Send a confirmation email from the SMTP server to the defined destination.

Apply SMTP settings
>Save your settings.

>You will be asked to confirm restarting the application. Then, you will be taken back to the `management` menu.

Return without saving
>Do not save your settings.

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