IBM XIV Storage System
IBM Hyper-Scale Manager
Installation as application
Version 1.4

User Guide

IBM

Management Tools Notices

This edition applies to Management Tools version 4, release 3, modification 0 of IBM XIV Storage System and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Figures

About this guide

This Management Tools set of documents describe how to install and use the IBM XIV Management Tools 4.3.

This set of documents includes:
1. IBM® Hyper-Scale Manager Installation guides
    - Installation guide for Virtual Appliance
    - Installation guide for installation as an application
2. IBM Hyper-Scale Manager Operations guide

Who should use this guide

This document is for storage administrators that 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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  - Exact publication title and version
  - Publication form number (for example, GA32-0770-00)
  - Page, table, or illustration numbers that you are commenting on
  - A detailed description of any information that needs to be changed

Chapter 1. Introduction

IBM XIV Management Tools introduce 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.
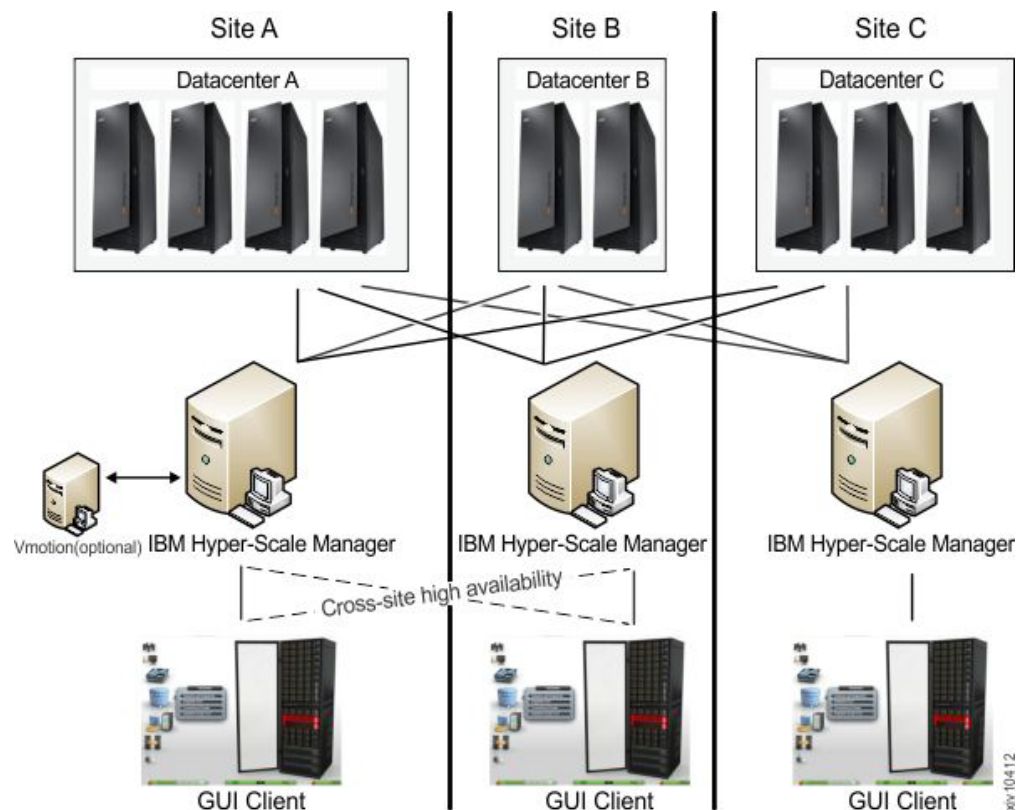

Figure 1. IBM Hyper-Scale Manager

Management Tools documentation set

As of release 4.3, the IBM XIV Management Tools documentation set includes the following publications:

- User guide and quick start guide
  - Installation as virtual appliance
  - Installation as application
- Operations and administration guide

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
An XIV user that monitors all XIV systems in the IBM Hyper-Scale Manager inventory. This user authenticates into all XIV systems in order to poll configuration data only.
- This user does not change the configuration
- This user's name is hardcoded: *xiv_msms*
- 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 27.

Management Tools specifications

Specifications for the Management Tools deployment are available on the IBM Hyper-Scale Manager and GUI Release Notes:

- Specifications for the IBM Hyper-Scale Manager are available in the IBM XIV Storage System IBM Hyper-Scale Manager 1.4 Release Notes
- Specifications for the IBM XIV GUI - both direct and manager modes - are available in the IBM XIV Storage System GUI and XCLI 4.3 Release Notes

Both Release Notes documents are available in the IBM XIV Information Center: http://publib.boulder.ibm.com/infocenter/ibmxiv/r2/index.jsp.

Chapter 2. Installing the 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 chapter guides you how to work in Manager mode.

The IBM Hyper-Scale Manager can be installed in two ways:

Virtual appliance
Deploying a Virtual Machine image on a Hypervisor.

This installation is covered on the User Guide for Virtual Appliance.

As an application
Installing the IBM Hyper-Scale Manager using standard package managers (such as Rational Portfolio Manager) on a preinstalled RHEL Linux Server.

This installation is covered in this user guide.

The installation of the 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 13
2. "Backing up the IBM Hyper-Scale Manager" on page 17

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 13.

Installing the IBM Hyper-Scale Manager as an application

The purpose of this task is to install the IBM Hyper-Scale Manager Standalone application.

Before you begin

Download the installation file from FixCentral. The name of the installation file is: `IBM-Hyper-Scale-Manager_1.4.0-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 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 must 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 is adding a new user, named *msms*, for running the application. You can either let it create this user automatically, or create it beforehand under a group called *msmsgroup*. This way, the user can be administered by the organization's LDAP.
6. In case the host name can't be resolved to an IP address, the installation will fail.

About this task

This task installs the 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 directory to the directory containing the installation package file.
   d. Make sure that run permissions are set. Run this command:

```
$ chmod +x IBM-Hyper-Scale-Manager_1.4.0-x.bin
```

2. Run:

```
IBM-Hyper-Scale-Manager_1.4.0-x.bin
```

The following screen opens:

```
--------------------------------------------------------------------------------
---------     IBM Hyper-Scale Manager 1.4.0.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 1.4.0.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 v1.4.0.x is starting...
IBM Hyper-Scale
Manager 1.4.0.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 - 1199-1209
  - 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."

Uninstalling the IBM Hyper-Scale Manager
>Always use the **Uninstall** menu option.

>**Note:** Do not delete the installation directory manually.

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

The IBM Hyper-Scale Manager server defaults to use `eth0` network interface, in case of multiple network interfaces.

About this task

This task takes place after the installation. If no file is configured, the default is `eth0`.

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 interfaces.

Initializing the inventory

Install the XIV GUI and set it to work with the 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=4.2&platform=All&function=all.

About this task

This task guides you through:
- Installing the XIV GUI and setting 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. Fill the **Primary Management Server** field and click **OK**.
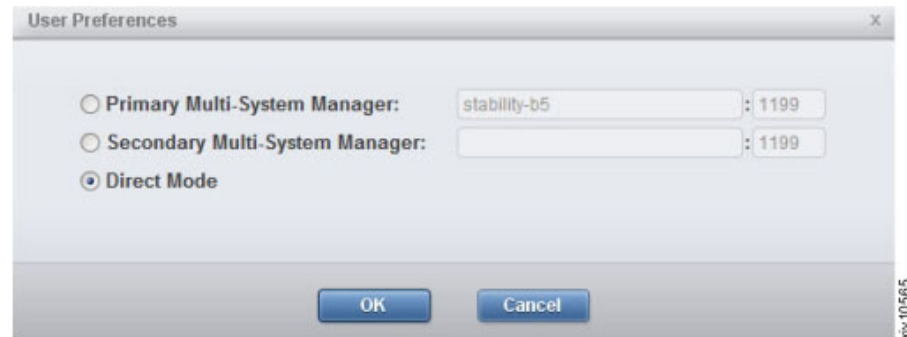
Figure 2. IBM Hyper-Scale ManagerPrimary Management Server

   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

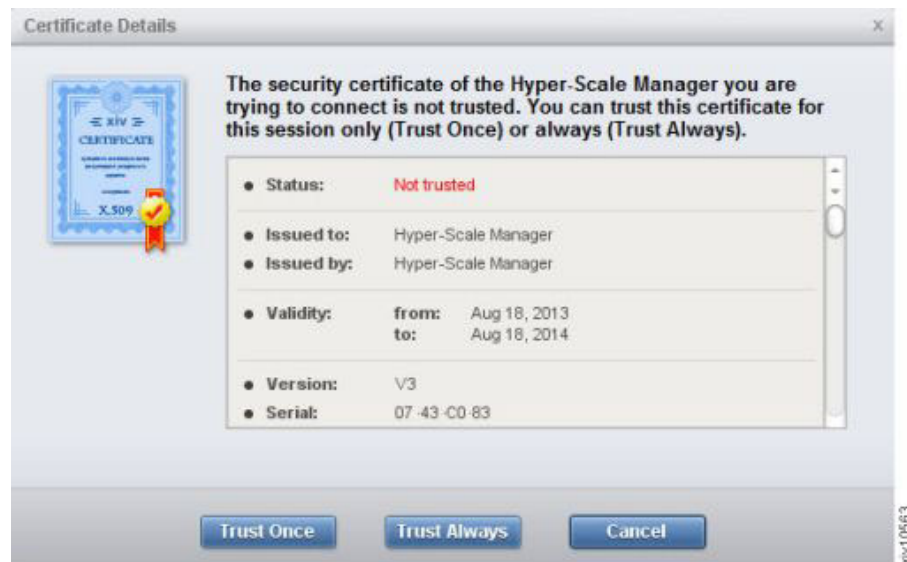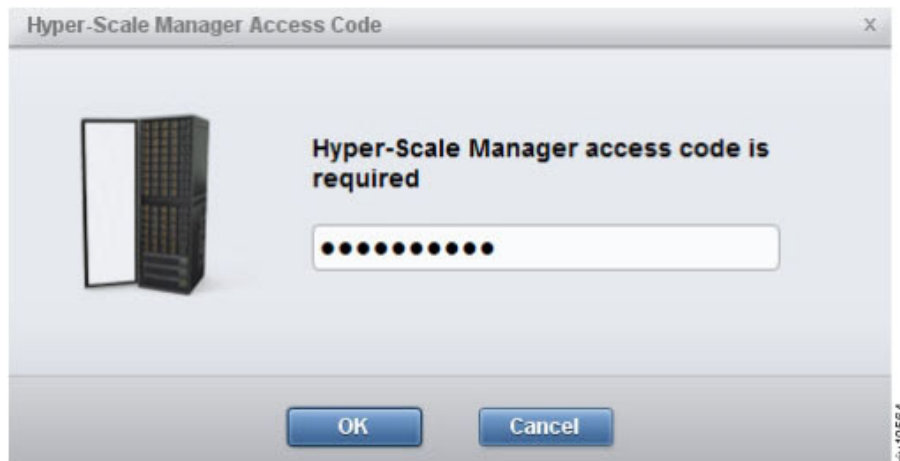In case the Manager Access code was not defined yet, the default is *adminadmin*. Read more about the Manager Access code on the "Definitions" on page 2 section.

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.
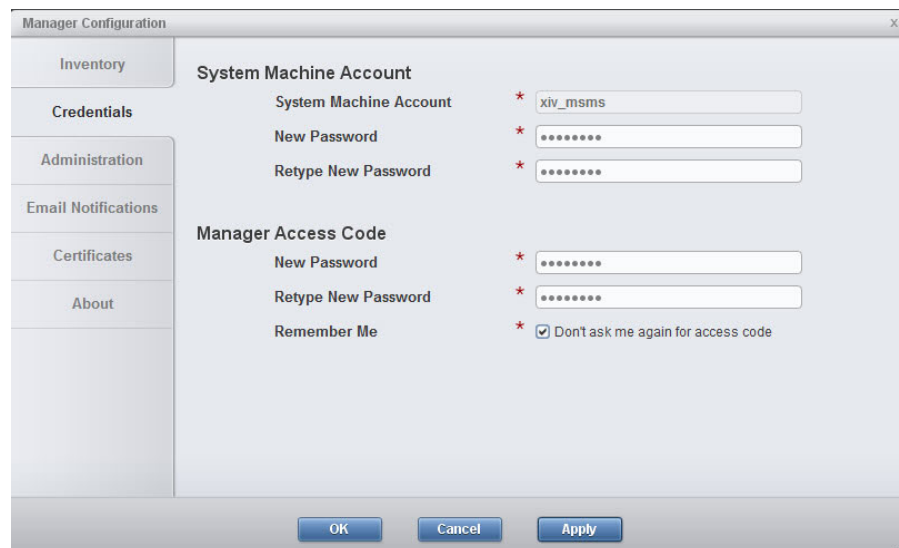
Figure 5. The Remember Me checkbox

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**.
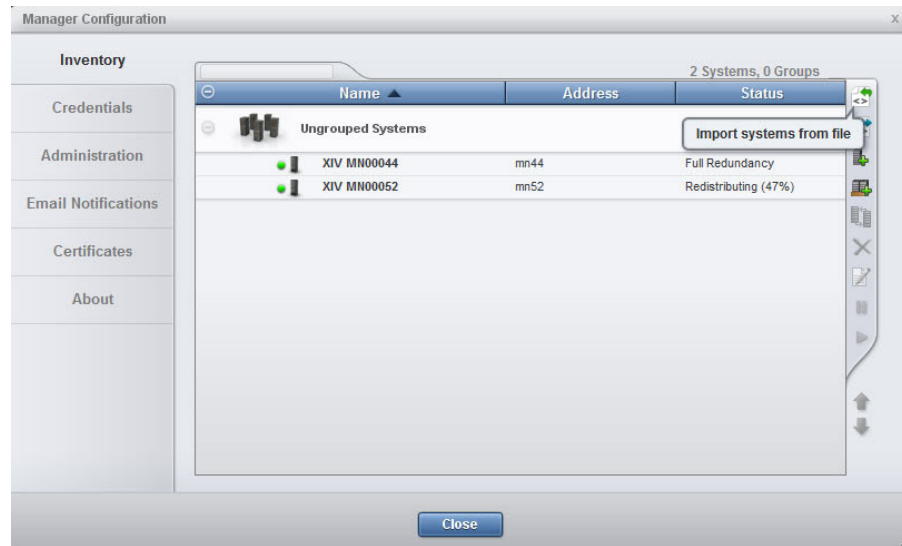
Systems are added to the screen.

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 2 topic.

Installing another IBM Hyper-Scale Manager

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.
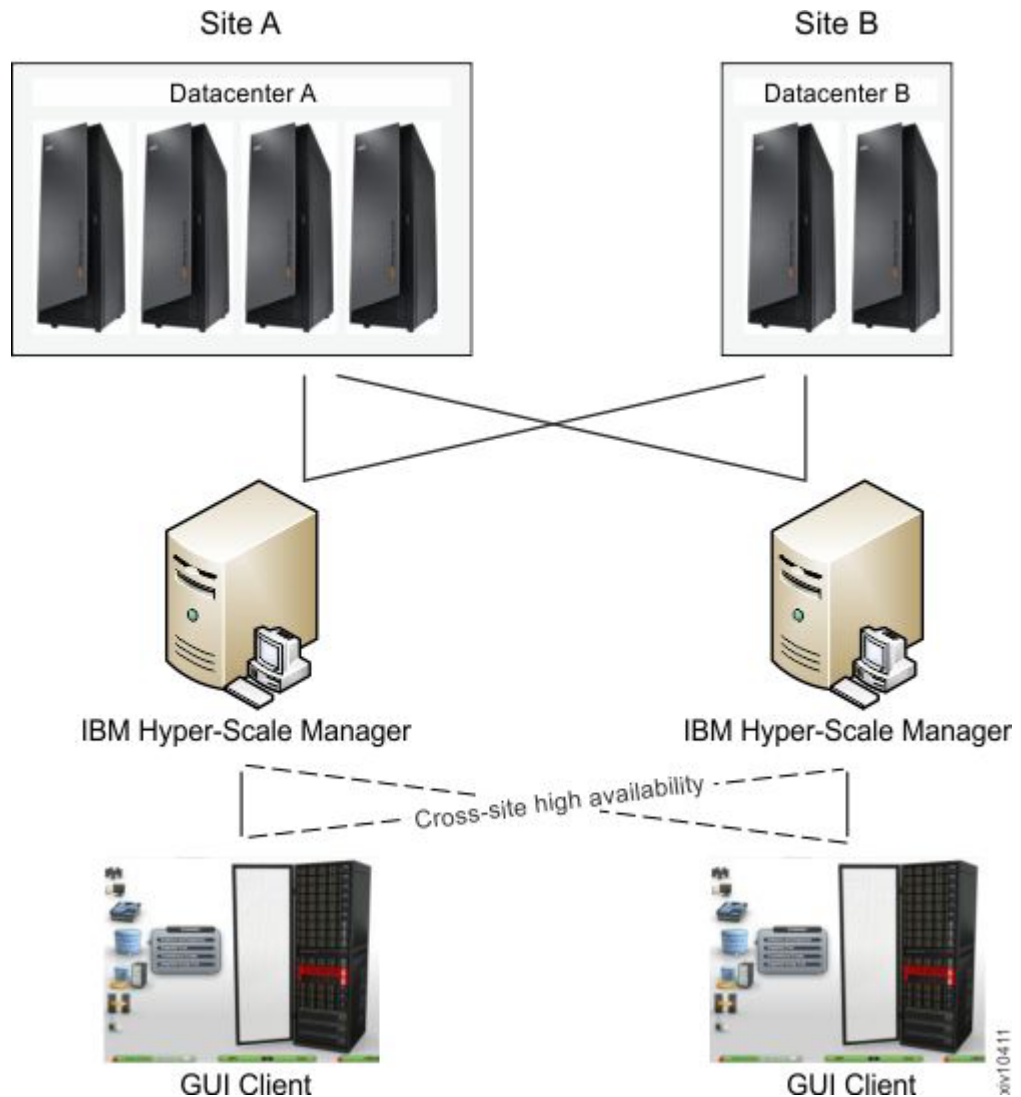
Figure 6. Cross site high availability

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.

Chapter 3. Upgrading the IBM Hyper-Scale Manager

This chapter discusses how to upgrade the IBM Hyper-Scale Manager to the most recent version available and how to roll-back an upgrade.

Upgrading the IBM Hyper-Scale Manager

Upgrading 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 17.

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 17. For the purpose of this task, follow the instructions below.

   a. Click 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. Click 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_1.4.0-x.bin
```

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

```
IBM-Hyper-Scale-Manager_1.4.0-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 15.

Upgrading the IBM Hyper-Scale Manager 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, you are asked to approve upgrading it.

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 GUI screen pops up, click **Upgrade Manager**.

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

2. Accept the Software License Agreement. The IBM Hyper-Scale Manager is upgraded.

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

In case the upgrade does not end well, 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 17.

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 18.

Chapter 4. Backing up and restoring the Manager

Backing up the inventory configuration of the IBM Hyper-Scale Manager

This chapter describes how to back up the IBM Hyper-Scale Manager and how to restore it.

Backing up the IBM Hyper-Scale Manager

Backing up the inventory configuration of the IBM Hyper-Scale Manager

About this task

This section describes how to backup the inventory configuration of the IBM Hyper-Scale Manager. 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 (See "Configuring SMTP settings" on page 30).
- System Machine Account password (See "Changing the System Machine Account password" on page 24).
- Manager Access Code (See "Changing the manager access code" on page 27).
- IBM Hyper-Scale Manager certificate (see here: "Replacing the IBM Hyper-Scale Manager certificate" on page 27)
- 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. Click 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. Click 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

Restoring the inventory configuration and preferences of the IBM Hyper-Scale Manager from a backup

About this task

This section describes how to restore the inventory configuration of the IBM Hyper-Scale Manager from a backup. 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:
- System Machine Account password (See "Changing the System Machine Account password" on page 24).
- Manager Access Code (See "Changing the manager access code" on page 27).

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:
------------------------
BACKUP_20120815_085300.tar.gz
BACKUP_20120814_085000.tar.gz

Please select a backup file to restore >
BACKUP_20120815_085300.tar.gz
```

   b. Click Y to confirm.
   c. Confirm again:

```
Are you sure you want to restore BACKUP_20120815_085300.tar.gz? [Y/N] : y

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] :
```

   d. The restore takes place:

```
Backup files to restore:
-----------------------
BACKUP_20120827_112834.tar.gz
BACKUP_20120827_112511.tar.gz
BACKUP_20120814_122049.tar.gz

Please select a backup file to restore >BACKUP_20120814_122049.tar.gz

Are you sure you want to restore BACKUP_20120814_122049.tar.gz? [Y/N] : y

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

Backing up...
Backup completed successfully
xivms v1.4.0.x is stopped

Restoring BACKUP_20120814_122049.tar.gz...
Restore completed successfully

Note: The following configurations were not restored
(the pre-restore 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 v1.4.0.x is starting...
```

e. Press any key to return to the **Backup and Restore** menu.

4. Once the restore is complete, you need to redefine the following:

The System Machine Account

See a definition to the System Machine Account here: "Definitions" on page 2.

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 24.

The Manager Access Code

See a definition to the Manager Access Code here: "Definitions" on page 2.

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 27.

Chapter 5. IBM Hyper-Scale Manager menu options

Before you begin

Accessing this menu is done by logging in as root or *msms* user and running the ~msms/management_menu.sh script.

About this task

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

Procedure

Running ~msms/management_menu.sh, the following menu opens on screen:

```
-----------------------------------------------------------------
------------- IBM XIV Hyper-Scale Manager v1.4.0.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 XIV GUI Communication Ports
 8) Change RESTful Interface Port
 9) SMTP Configuration
10) Start/Stop Hyper-Scale Manager Service
11) Exit
Your Selection>
```

What to do next

The following sections explain how to carry out this menu operations.

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

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

```
--------------- IBM Hyper-Scale Manager v1.4.0.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) Exit
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. Click 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. Click 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. Click 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. Click 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. Click 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. Click 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. Click 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 2.

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 21.

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 2 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. Click 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

Click 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 17.

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. Click 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]? >14:00
Scheduled daily backup at 14:00
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. Click 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. Click 5 on the menu.
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. Click 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 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. Click 7 on the management menu. The number of the first port among the consecutive six is displayed on screen, for example, 1199.

```
Your Selection>7

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] >
```

2. 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 1199-1205
to 1340-1346. Are you sure? [Y/N] >y
```

3. Click Y to approve the replacement. You are asked to restart the service.

```
You need to restart IBM Hyper-Scale Manager service in order for the changes
to take effect.
Do you want to restart service now? [Y/N] >
```

4. Click Y to restart the IBM Hyper-Scale Manager service. Upon success, the following message is displayed on screen:

```
Change was completed successfully.
Point XIV GUI to connect to the new starting communication port.
```

If you select not to restart the service right now, the following notification will be displayed on screen:

```
Change was not completed yet. Remember to restart the IBM Hyper-Scale Manager service.
```

Results

As the service is up again, the ports have changed.

What to do next

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. Depending on the IBM Hyper-Scale Manager flavor:
   - On the installation as an application: click 8 on the management menu.
   - On the virtual appliance: click 13 on the super user menu.

   The number of the port is displayed on screen. Here, this number is 8443.

   ```
   Your Selection>8
   Please enter a new RESTful interface port number [8443].
   The port number should be greater than 1024 and less than 65536 >
   ```

2. Enter a new port number that is higher than 1024. In this example, the entered port number is 1025.

   ```
   The port number should be greater than 1024 and less than 65536 >1025
   You are going to change the reserved ports from 8443 to 1025. Are you sure? [Y/N] >
   ```

3. Enter Y to approve the replacement. You are asked to configure the firewall and restart the service.

   ```
   Change was not completed yet. Remember to configure firewall and restart
   IBM Hyper-Scale Manager service.
   Press any key to continue
   ```

4. Click Y to restart the IBM Hyper-Scale Manager service. Upon success, the following message is displayed on screen:

   ```
   Change was completed successfully.
   ```

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. Click 9 on the menu. SMTP menu opens.

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

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


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

2. Click 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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