

*IBM Z Software Asset Management
Container V9.1 Administration and User
Guide*



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Chapter 1. Administration and User Guide

IBM Z Software Asset Management V9.1 can quickly assess and identify software inventory and operations. This product recognizes more than 23,000 mainframe software products and features and can be used to:

- Create an accurate inventory of assets for mainframe systems.
- Determine which assets are used on the mainframe, their usage frequencies and users using them.

In addition, several reports are supplied which aid in identifying deployed assets that are approaching or past end-of-support. These assets may require recommissioning thus keeping you in control of your software asset management.

Advantages

- The application can be accessed using a modern web interface.
- Provides reports such as: Assets, Discovery, and License verification reports.
- Reports can be filtered and sorted. Some offer drill down detail reports.
- All reports are available for local download in CSV format.
- Upload and process zip datasets generated by the z/OS collectors.
- Supports LKB Database import using z/OS Batch Tagger.
 - LKU Database support not currently available.
- Can perform Repository maintenance using Administrator functions.
- Easy maintenance and upgrades using replacement docker images.
- Simple, one-click, GKB Database update process.
- All import and Database report generation can exploit available mainframe IFLs (or zIIPs for z/CX) saving CP consumption.
- Locally scalable based upon Administrator settings and number of users required.
- Standard REST API access available with industry standard JSON output provided.

Workflow Summary

- Run Inquisitor (IQ) scans and (optionally) start Usage Monitor (UM) collectors on your z/OS host systems.
- Transfer the IQ scan and (optionally) UM collector zip data dataset from your z/OS system(s) to a local workstation. Alternatively, transfer z/OS collector zip dataset to docker instance directly using the API service interface (ie via Curl).
- Access the UI (user interface) web-page and login using your credentials.
- Create, or set as your default, an Administrator created repository.
- Navigate to the **Perform Import Processing** page.
 - Import → Perform Import Processing.
- If not using the API to transfer collector zip datasets, upload all the appropriate IQ and (optionally) UM zip datasets using the **Upload** button from your workstation.
- Start importing the previously transferred IQ and (optionally) UM zip datasets using the **Start Processing Uploaded Files** button.
- Once import processing is completed successfully, all the available reports (or API) can be used to view various analysis reports (Assets, Discovery etc) on the z/OS system(s) imported data.

Note: Viewing the available usage reports will require usage monitor (UM) data to have been collected successfully imported and the Aggregator executed.

Chapter 2. Logging In

In this section, we will discuss the detail process to login.

Login as User

An administrator is responsible for creating users. After your credentials are created, the administrator will share your Username and the Password along with the URL to access the web-interface. You will be redirected to force reset password page on first time login. The initial access URL is reported during the installation procedures.

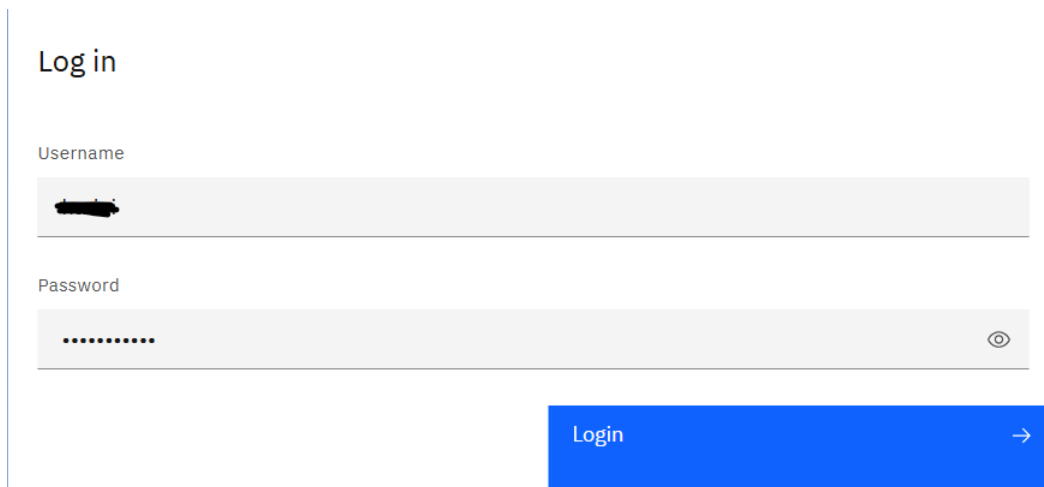
To log into the application, follow the steps given below:

1. Enter the URL provided by your administrator into your web browser and press Enter.

Example: URL: **system.yourdomain.com:yourport**


You are directed to the **Login** page:

Figure 1. Login page



The screenshot shows a login form with the following elements:

- Log in** header
- Username** label above a text input field containing a redacted username.
- Password** label above a password input field containing redacted characters and a visibility icon (an eye) on the right side.
- A blue **Login** button with a right-pointing arrow.

2. Enter a valid username in the **Username** field. Enter a valid password in the **Password** field.
3. To view the password entered by you, click icon  in the **Password** field.
4. To navigate to the external IBM Z Software Asset Management documentation website, click the **question mark** icon shown at the top right of the Login page.
5. If you click the information icon, you will be shown a brief overview about the application and the current environment information, which includes docker version, hostname, and other backend related service level information. Support personnel may request this information for problem analysis.
6. If you click the Japanese language icon in Login page, you can switch the application language to **Japanese** from the drop-down based on your preference:

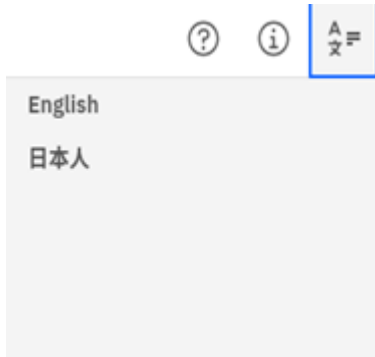


Figure 2. Login Language Selection

7. Click **Login**.

Note: If you click the Login button with a blank username or password, an informational message will be displayed:

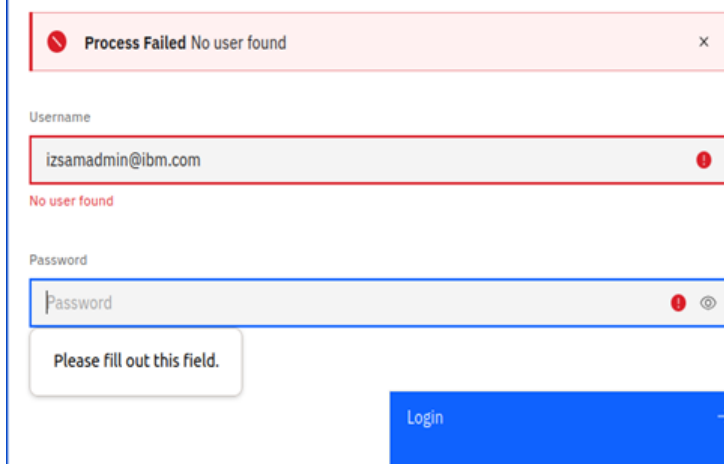


Figure 3. Login Page Missing Password Message

Note: If you enter an invalid Username or Password, a warning message appears as shown:

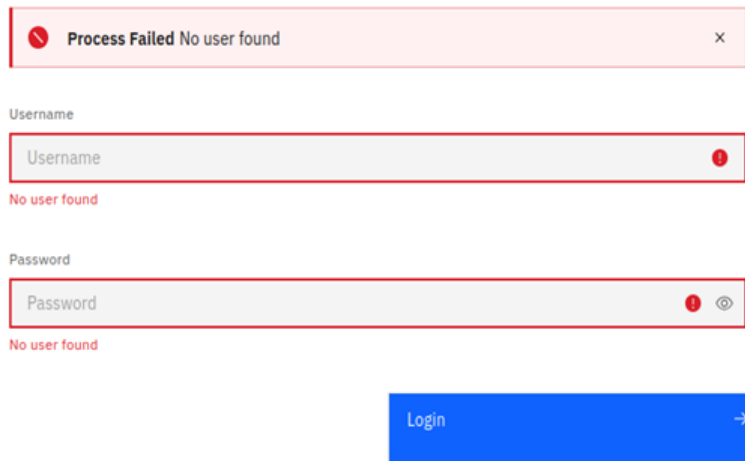
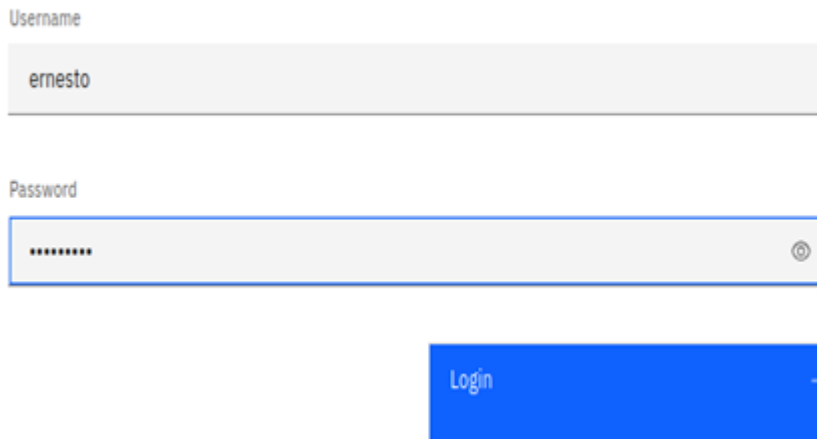


Figure 4. Invalid Credentials Warning Message

Force Reset Password (Admin)

1. If Administrator selects **Force Reset Password** checkbox while creating a new user, then the user will be redirected to **Reset** password page on first time login.

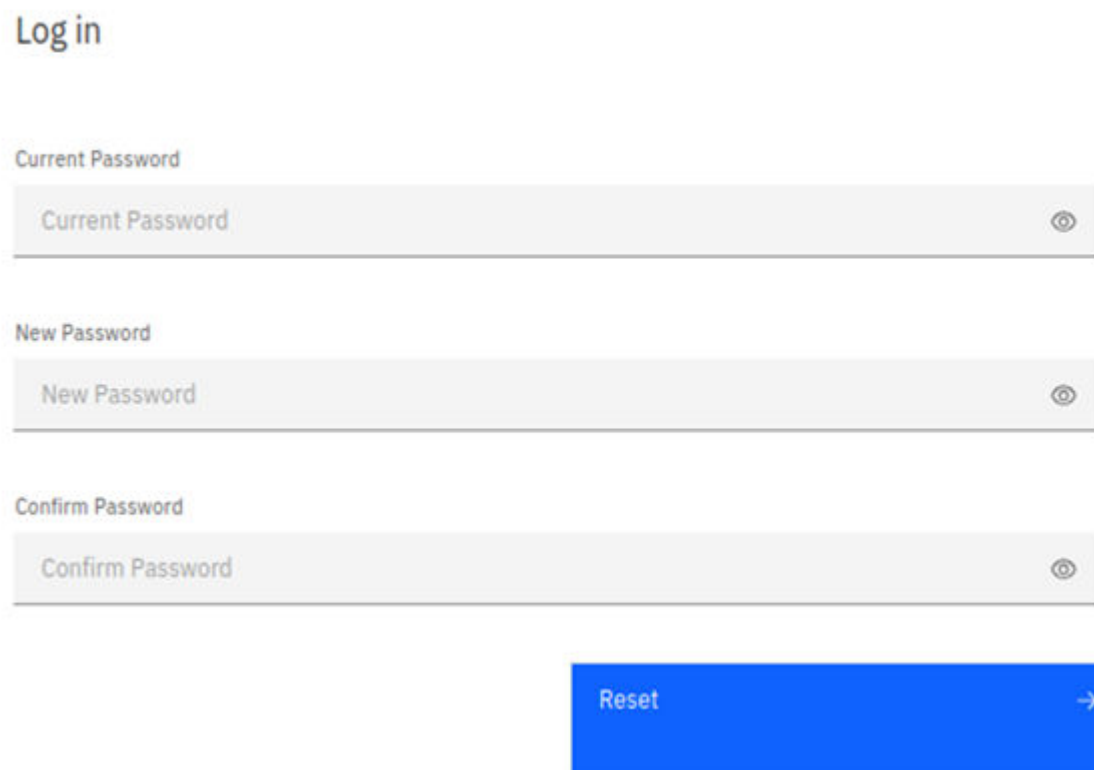
2. You should then log in as usual by entering the credentials provided by the Administrator.



A user login form with two input fields and a button. The first field is labeled "Username" and contains the text "ernesto". The second field is labeled "Password" and contains a series of asterisks. To the right of the password field is a small circular icon with an eye. Below the fields is a blue button labeled "Login" with a right-pointing arrow.

Figure 5. User login As Administrator

3. You are redirected to **Reset** password page.
4. Reset password page has three fields for entering old password and new password of your choice which must meet password rules. Refer to the [“Add New User”](#) on page 33 section for a description of the accepted password rules.
5. Enter a valid **Current Password, New Password** in the respective fields. To view the password entered by you, click icon in the Passwords field.



A "Reset Password" page with a title "Log in" at the top. Below the title are three input fields, each with a label and a placeholder text: "Current Password", "New Password", and "Confirm Password". Each field has a small circular icon with an eye to its right. At the bottom right of the form is a blue button labeled "Reset" with a right-pointing arrow.

Figure 6. Reset Password Page

6. After entering, if you select **Reset**, then you will be redirect back to login page to login with the updated password.

Once you have successfully logged into the application with your valid credentials, the home page screen displays.

Access Home Page

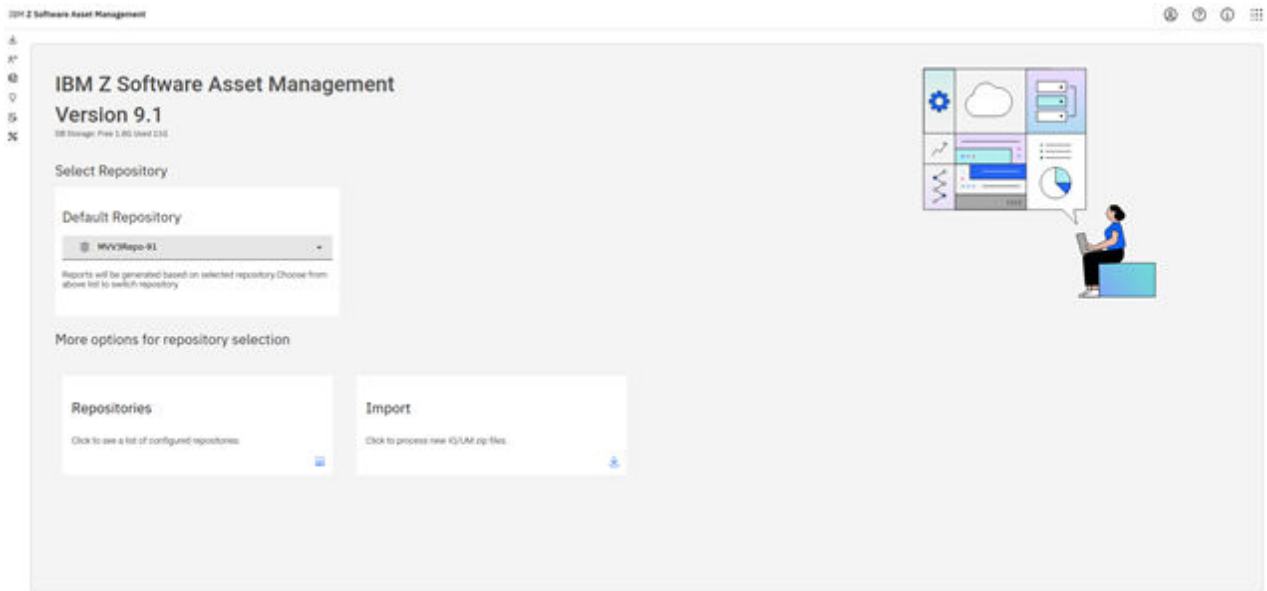


Figure 7. Home page

When you log in for the first time and if your administrator has not set a default repository, you will need to set a default repository from any of the existing repositories available on the homepage. Contact your Administrator to have a repository created if required.

The homepage can be directly accessed from anywhere by using either the **Homepage** link or from the **IBM Z Software Asset Management** top left-hand title link.

To logout from the product, click the **profile** icon on the top right-hand side, then click **sign out**. Your session will now be terminated.

Steps to access home page:

1. Select a desired repository from the list:

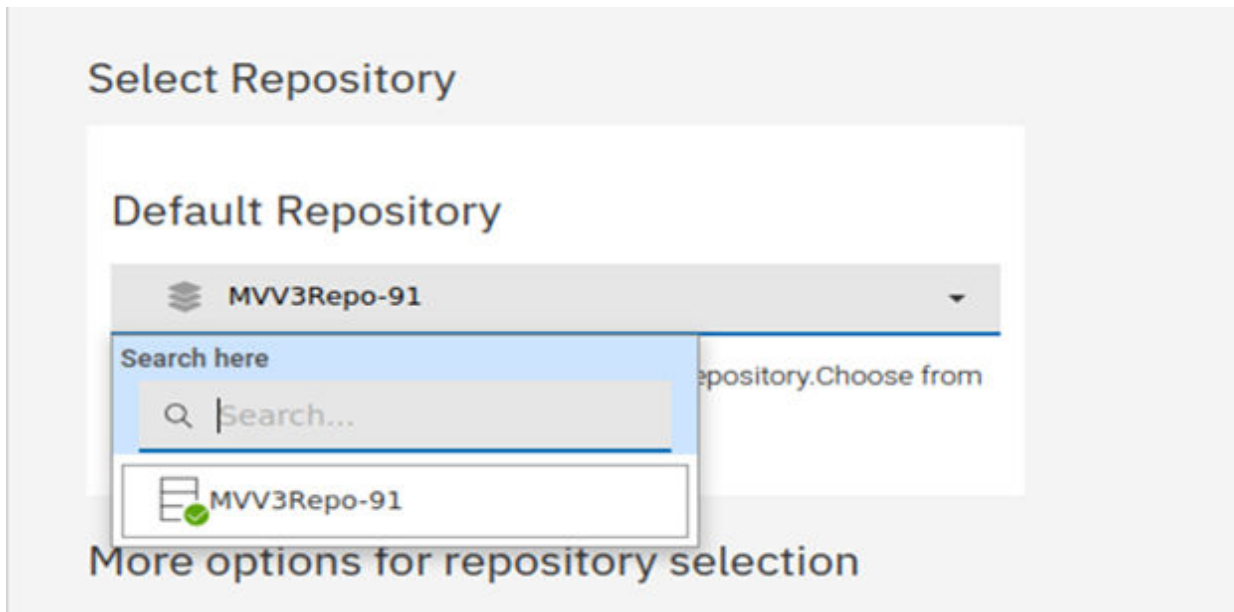


Figure 8. Default Repository Selection

- Depending upon the role assigned by your Administrator, you will be able to access reports, import new Inquisitor (IQ) or Usage Monitor (UM) z/OS files, perform repository utilities and update your profile preferences.

Note: The User profile icon at the top right corner of the Home page can be used for Profile options, to Sign Out and set Language preferences.

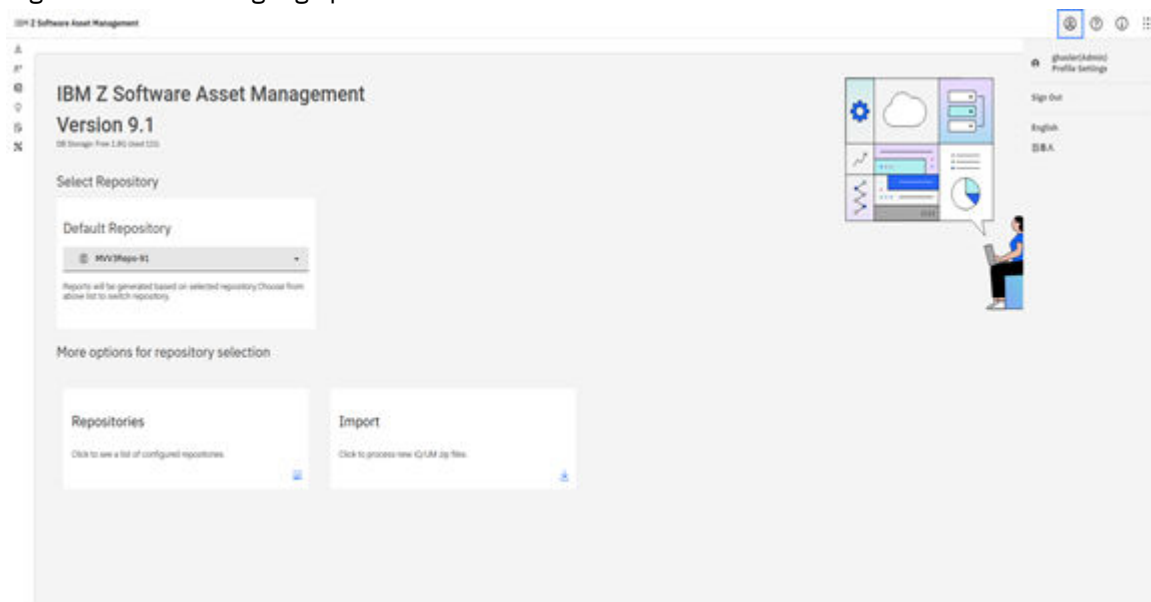


Figure 9. Home page - Profile & Language Preference

The Home page has the following features or User Interface (UI) elements:

- To view the available repositories, select the **Repositories** card.
- To perform an upload and import of z/OS Inquisitor or Usage Monitor data zip datasets, select the **Import** card.
- To change the default repository, select the drop down under the **Default Repository**.
- To select a report section, hover the mouse over a menu icon on the left-hand side panel and the menu will expand. Click the required menu to display the corresponding sub-menus.

- The selected available sub-menus items will then be displayed allowing for import processing, administration reports, asset report viewing, discovery report viewing and repository utilities.
- Information under the version details on the top left shows :
 - The current host systems total docker volume file-system space availability (Free) and consumption (Used).

See the following table for all the available menu and sub-menu options.

Note: Report data is displayed based on the default Repository selected. Unless this is changed to another loaded repository database from the repository selection drop-down, which is available on most reports.

The Home page menus and their corresponding sub reports are listed in the following table:

Menu	Reports
Repositories	<ul style="list-style-type: none"> • Repositories
Import	<ul style="list-style-type: none"> • Perform SCRT (and Tailor Fit pricing) Import • Perform ImportProcessing (IQ/UM) • Running/Completed
Admin Reports	<ul style="list-style-type: none"> • IQ ImportHistory • Usage ImportHistory • Aggregator Logs • Physical Delete Logs • Usage Delete Logs • Libraries with Unknown Modules • LKB Management • LKB Summary • Preprocessed Reports Summary • LPAR Delete Logs

Menu	Reports
Assets	<ul style="list-style-type: none"> • MachineInventory • ProductInventory • Product Suites • Product AuditTrail • Product Usage byMachine • Product bySystem • Product by Sysplex • Product Usage byMonth • Product Usage by Vendor • Product Use by Machine MSU • Product Use by Trend • SCRT Tailored fit Pricing • Product Use by Machine and IBM Value Units • Search by PID • Product Use Search • Storage Subsystem Hardware • Machine Resources • Registered Products • Registered Products Usage • Product by System Group

Menu	Reports
Discovery	<ul style="list-style-type: none"> • z/OS GKBSummary • USS GKBSummary • Discovered ProductDetail • Discovered Product bySystem • Discovered Product by Sysplex • Discovered ProductSummary • Discovered Product AuditTrail • Discovered Product Use byMonth • End of ServiceProducts • ModuleCompilers • Product Libraries • Volumes by System • Search by Product FMID • Search Modules • Search Libraries • Product Library Usage • Product Change Report • Usage Monitor File Detail • Deleted Libraries • Libraries by System • Job Use By Product Library • Dataset HLQs By System • Discovered Product by System Group • Discovered Product by Repository • Product Categories
Custom	<ul style="list-style-type: none"> • Usage Data Summary • User Application Code Product Usage

Menu	Reports
Utilities	<ul style="list-style-type: none"> • SystemDeletion • UsageDeletion • Physical Deletion • Exclude Product Suites • Define Annotations • Define Alternate Product Names • Define Alternate Vendor Names • Product Owner & ID • EOS and GA Date • Define System Group • Define VUE Product • Define Library Classifications • Assign Library Classifications • Delete Obsolete Hardware • Mark LPARs as Deleted
User Profile Menu	<ul style="list-style-type: none"> • Profile Settings • SignOut • English • Japanese
Navigation Menu	<ul style="list-style-type: none"> • Repositories • (Administrator Only) Backup/Restore • (Administrator Only) Admin Tools

Importing New Files into a Repository

In this section, we will discuss about the process of importing new files into a repository.

Local Workstation Transfers

First, transfer any Inquisitor (IQ) or Usage Monitor (UM) files created on your z/OS system to your workstation. Ensure you transfer these z/OS datasets in **binary** format and note the folder/directory they are transferred/saved into.

Note: IBM Z Software Asset Management only supports zipped z/OS IQ or UM datasets for importing.

API Service Transfers

If you have tools, such as **curl**, available on z/OS, you can alternatively transfer the Inquisitor (IQ) and/or Usage Monitor (UM) zip file datasets directly to the docker environment using an active API service. Review the provided **Swagger API** documentation available at the API service URL (see your product Administrator) for details. For uploads, review the **/api/v9.1/uploads** API end-point for curl examples.

Note: For uploads, review the **/api/v9.1/uploads** API endpoint for curl examples.

Local Knowledge Database Updates

Inquisitor (IQ) zip datasets containing z/OS tagged data for local knowledge database (LKB) updates are supported. Currently, LKU data is not supported.

An LKB database is automatically prepared for each repository created by an Administrator.

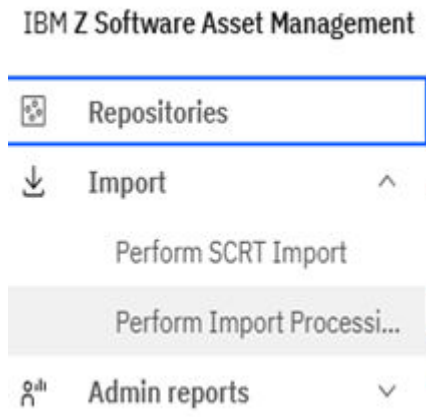
After uploading and importing IQ zip data files that include tagged data, imported LKB data can be viewed in the **LKB Summary** report, available under the **Admin Reports** menu.

Refer to the IBM Z Software Asset Management 9.1 Administration Guide and Reference for more information on configuring and running the z/OS Batch tagger.

Import IQ/UM Files Process

To import a new single or multiple inquisitor (IQ) or usage monitor (UM) zipped (raw data is not supported) z/OS datasets into a repository from your local workstation or that have been transferred using the API service, follow these steps:

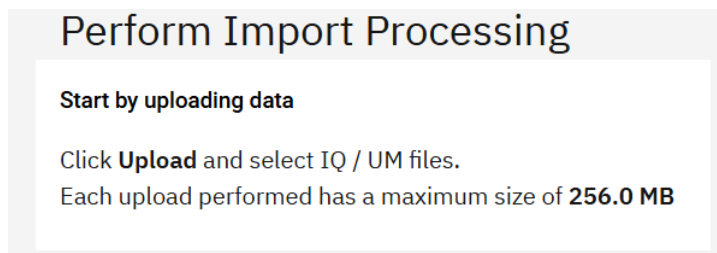
1. On the home page, click the **Import** card title. Otherwise you can move the cursor to the **Import** menu, click **Perform Import Processing**:



The **Perform Import Processing** page is displayed as follows:

Figure 11. Perform Import Processing Page


Figure 10. Perform Import Processing



2. To upload a zip file, click **Upload** and select one or multiple files that have been previously downloaded to your workstation from z/OS, such as **IQ/UM** zip files. If you transferred your IQ or UM datasets using the API and are logged into the same user account that is used with the API connection, they will appear on this page.

Note: While the upload is processing on your workstation, do not navigate away from the **Upload** page before the process is completed, to avoid terminating the Upload process. The total selected file(s) upload size must not be larger than 256 MB for each individual upload request.

Note: The uploaded files list is displayed on the same page after uploading has been completed successfully.

3. If you wish to delete a file, click the delete  icon next to the file.
4. If you wish to delete all the files which were uploaded, click **Delete All**.

- To import the uploaded files into a database repository, click the **Start Processing Uploaded Files** button.
- If you upload files other than supported IQ/UM z/OS collector zip files, an error message will appear as follows during the upload process:

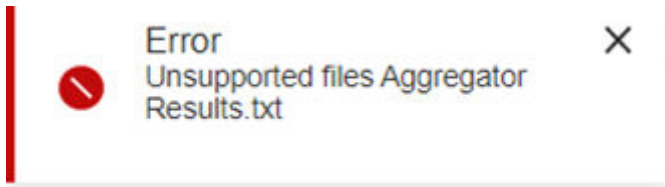


Figure 12. Unsupported File Upload - Error Message

- Select your target repository. To change from your default, click the drop-down menu under **Repository**, and select the desired target repository from the list of repositories.

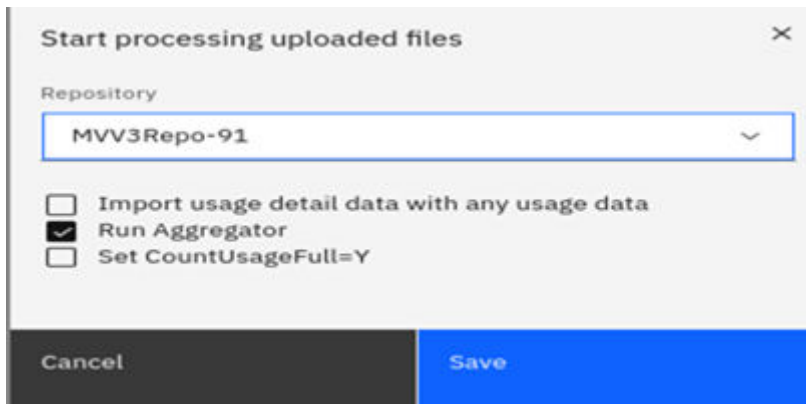


Figure 13. Process Uploaded Files

- If you leave the **Run Aggregator** checkbox checked, the Aggregator will merge data from the repository **Discovery** tables and add it to the repository **Asset** tables. This option is only applicable if importing only **Inquisitor (IQ)** collection files (from z/OS). If **Usage Monitor (UM)** collection files are also uploaded for importing, Aggregator will automatically be executed irrespective of this checkbox setting to ensure all usage data is merged correctly into the appropriate repository tables.
- If you check the **Set CountUsageFull=Y** **Set CountUsageFull=Y** checkbox, aggregator execution is implied and usage count data aggregation will be performed. It is recommended to set this option at least once for a repository following a GKB update being performed.
- If the **Include Product Suite processing** checkbox is selected, any product suites matched in the import data will be added to the repository DB selected.
- If you check the **Import usage detail data with any usage data** checkbox, during the usage import stage, any usage detail data found from usage monitor (UM) files will also be loaded into the repository. You can use the **Physical Delete** utility to delete any obsolete or unused usage detail data.

Note: Usage detail data can be huge. Ensure you have sufficient DASD, memory, and CPU resource capacity to load, store, and (if enabled) pre-process huge amounts of detail usage data. System stability, response, CPU utilization, paging, and DASD usage may increase substantially if you select this option depending upon the amount of usage data being imported.
- If you hover over each checkbox, a brief description about each option will be shown, as follows:

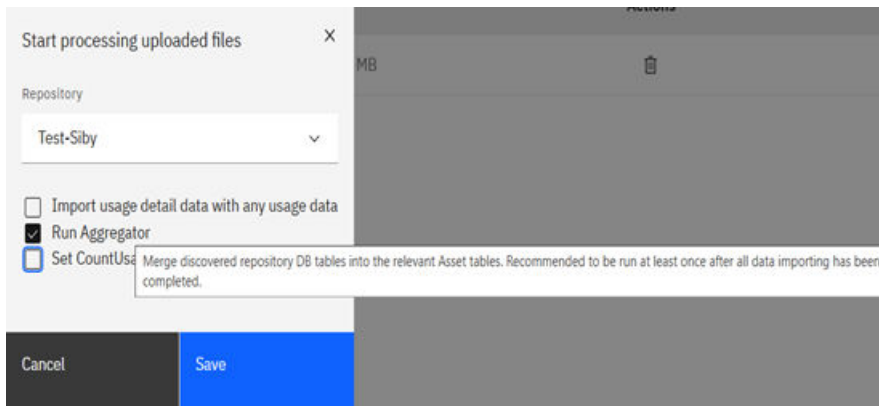
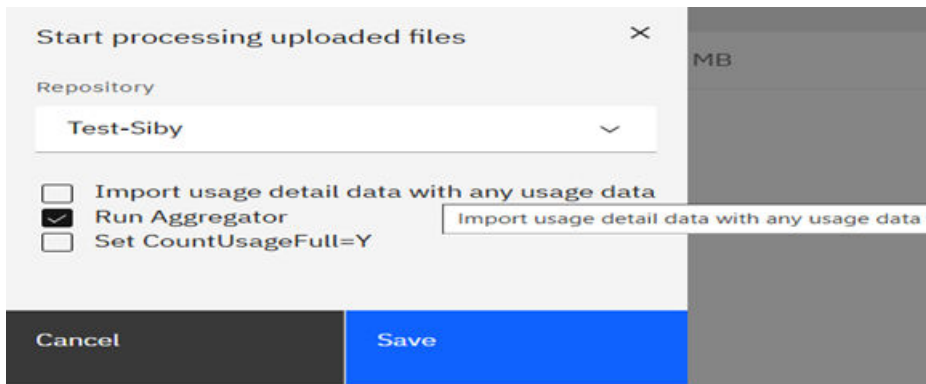


Figure 15. Import Options Tooltip Content – Run Aggregator

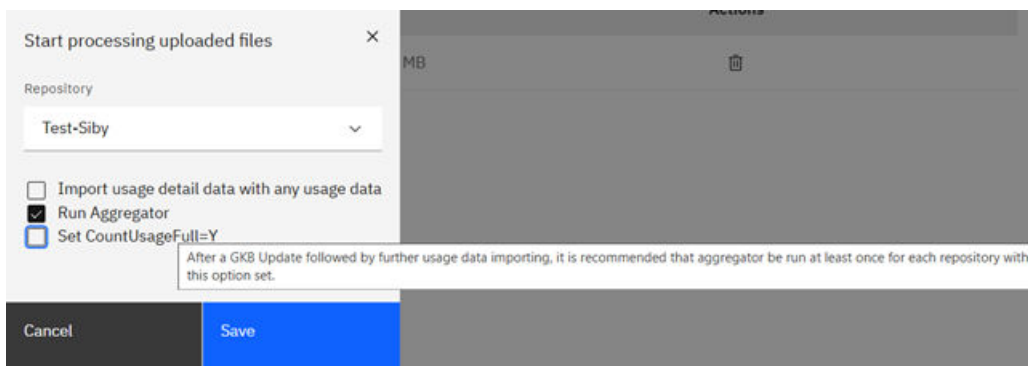


Figure 16. Import Options Tooltip Content - Count Usage Full

Figure 14. Import Options Tooltip Content – Import Usage Detail Data

13. Select **Save**.

Once the Import process is initiated, the progress will be displayed in the status page as displayed:

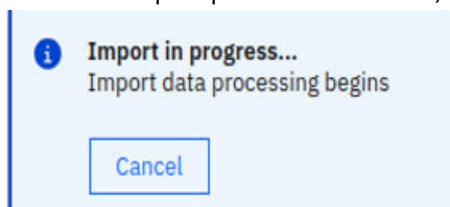


Figure 17. Import Processing Status Window

Note: Once started, the import processing step will begin and data will be added to the target repository database. During this time, the repository is busy and cannot be accessed until the process is completed. Once completed, access to the repository will be restored.

A sample repository selection list showing a busy indicator as displayed:




Repository	Description
  MVV3Repo-91	MVV3 z/OS z/VM Guest System Repo
 PartialDemoRepo-91	Partial Demo DB data repository
 OMUxRepo-91	U-Plex Systems Repo

Figure 18. Repository Busy

14. If you wish to stop the import process before completion, click the **Cancel** button.
15. In the pop-up window that follows, click **STOP** to confirm or **Cancel** to not proceed.

Note: Canceling an import process will result in the repository database becoming unusable. A Repository 'reset' (losing all data) will be required to make the repository eligible again to receive import data.



Figure 19. Import Cancel Confirmation Message

The importing process is canceled and the import **Status** page displays as follows:



Figure 20. Canceled Status Page

Note: When a successful import is complete, depending upon the kind of files you have uploaded, the respective log files will be displayed in the appropriate tabbed section.

For instance, if you uploaded zip files related to Inquisitor, the log file name(s) are displayed in the (default) Inquisitor Import Logs tab. To view usage monitor or Aggregator log files, select the related tab to see the available log files as displayed:

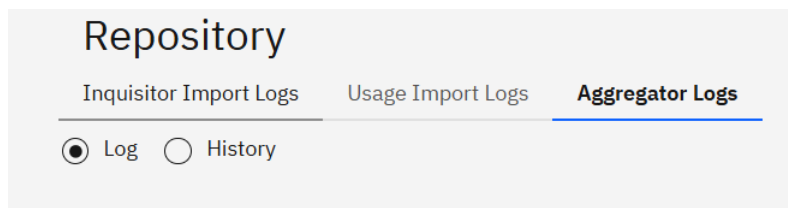


Figure 21. Display Log Files

16. Click on a log file to view the file or click on the download icon to save the file to your local system. The file is downloaded to your system only in standard text format.
17. A **GKB expired** warning message may appear after the import processing is finished if the installed GKB database is out of date. To resolve the issue, contact your administrator to schedule a GKB update. Import processing completion is not impacted.

18. To see all the previous logs, navigate to the **Repository** Page, select the applicable repository to view the most recently available logs. Use the **History** toggle to view older log files.

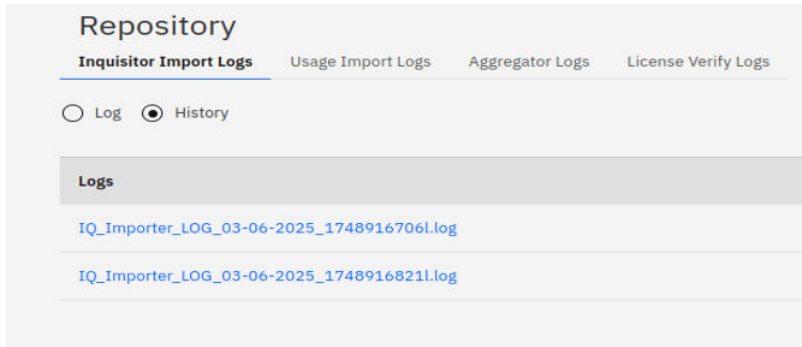


Figure 22. History Log Files

19. If you wish to delete a single file, click the delete  icon. If you wish to delete all the archived log files of the viewed type, select **Delete All**.

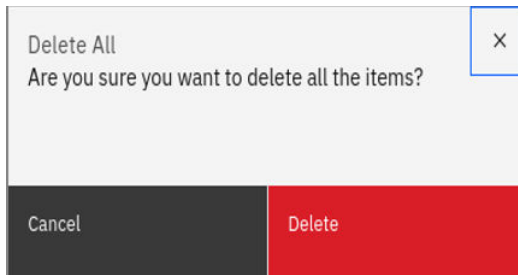


Figure 23. Delete All Archived Log Files

20. To go back to a previous screen, click on the respective tab.
21. If you wish to go to the Home page, click the **Homepage** link at the top left-hand side.

Depending on the data that was successfully imported, the available analysis reports can now be used to view the imported repository data.

Importing SCRT files to a Repository

IBM Z Software Asset Management supports the importing of z/OS SCRT generated CSV data files. Support is also available for TFP (tailored fit pricing) SCRT CSV data files.

Download the appropriate dataset from your z/OS host system in ASCII format to your local workstation environment.

Alternatively, you can use the API end-points **/api/v9.1/scrt-import** to upload and import, then API end-point **/api/v9.1/scrt-import/progress** to monitor the import processing progress from the z/OS host if the relevant tools are available on the z/OS system.

To import the z/OS IBM SCRT CSV file from your workstation, follow the steps given below:

1. Click on the **Import** menu, select **Perform SCRT Import**.

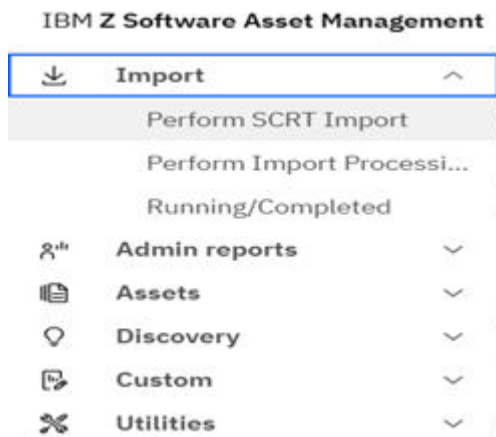


Figure 24. Perform SCRT Import

The **SCRT Import** page is displayed.

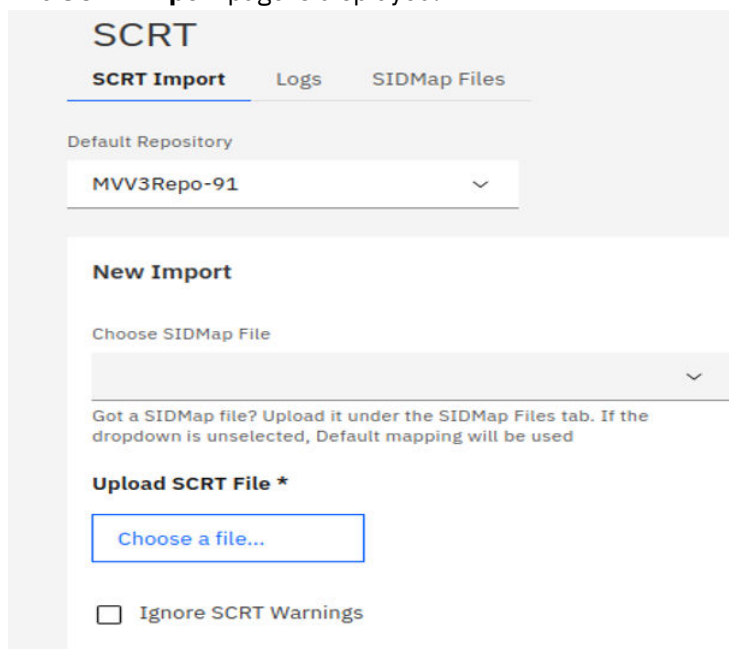


Figure 25. SCRT Upload/Import page

2. If you wish to select a different repository from that shown, select the drop-down menu under Default Repository, and select the required repository from the list of repositories.
3. If you have a previously uploaded **SIDMap** file that you wish to use for this import, choose from the drop-down menu next to **Choose SIDMap** file, and select either none or one of the previously uploaded files.

Note: Refer to for details on creating and uploading SIDMap files for use. If no files are shown in the drop-down, there are no SIDMap files are available to choose.

4. Select **Choose a file** and select the previously downloaded z/OS IBM SCRT CSV file from your workstation.

Note: If an invalid file format or non-IBM SCRT CSV file is uploaded, the import process will report an error with the SCRT import processing not being performed.

5. If you wish for the SCRT import process to ignore any warnings generated, check the **Ignore SCRT warnings** check-box.
6. To begin importing the uploaded SCRT file, select **Start Import** on the right-side of the screen.

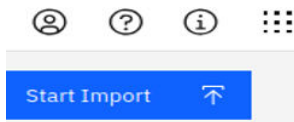


Figure 26. Start Import

The Progress of the Upload and Import process can be seen on the screen as displayed:

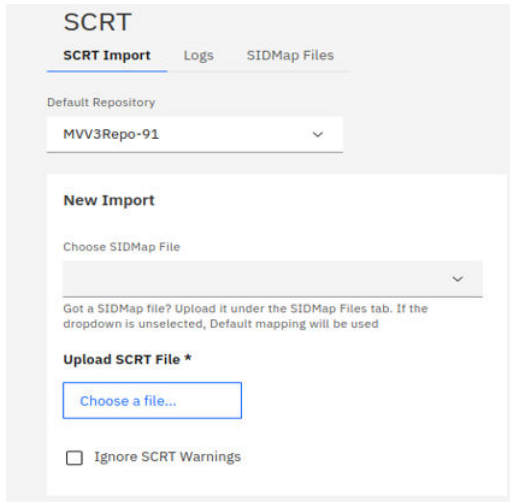


Figure 27. SCRT Import Started

7. You can view the latest log file by clicking **Logs** tab.
8. Select the **Logs** tab, to see any of the previous SCRT import processing log files.
9. To view any of the log files under the **Logs** tab, click on the Log file name.

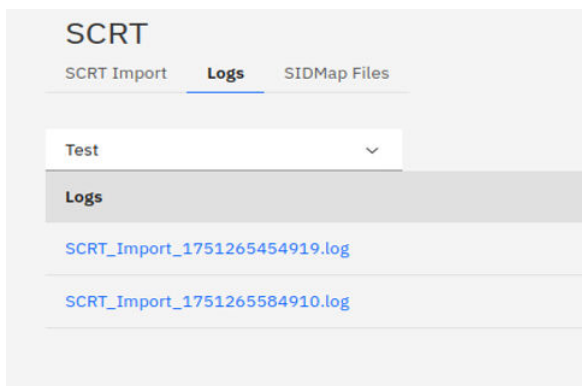


Figure 28. SCRT Import Log Files

10. To delete a single file, select the delete icon located next to the log file you wish to delete.
11. To delete all the log files, select the delete icon next to the **Delete All** label.

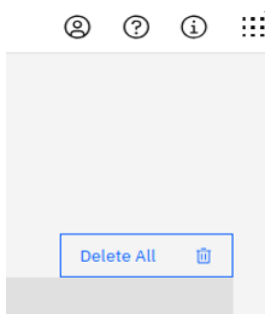


Figure 29. Delete All SCRT Import Log Files

Creating a SIDMap file

In this section, we will discuss the process of uploading the SIDMap file.

The SIDMap file data is used when users have a different SMF ID in their SCRT data than the one used in the target Repository. In order to match the data the user can substitute the same SMF id in the Repository, with the one in the SCRT import data, as it's being imported.

For example, in the Repository we have SMF ID **QIP1** but lets say the SCRT data has a different SMF ID of **IPO1**. In order for this SCRT data to be imported into **QIP1** repository and be matched successfully, the user would create a SIDMAP01.txt (text file) to assign **IPO1** to be **QIP1**, so when the SCRT data is imported the data is matched.

An example sidmap.txt contains the following:

- 11111-IPO1=QIP1
- 11111-IPO2=QIP2

When the SCRT importer is processing data for machine serial 11111 and SMF id IPO1, assign a SID value of QIP1 instead to match with existing SID data already present in the target repository.

To upload a SIDMAP file:

1. Select the **SIDMap Files** tab and then click the **Upload** button and select the file previously created such as **sidmap01.txt**.

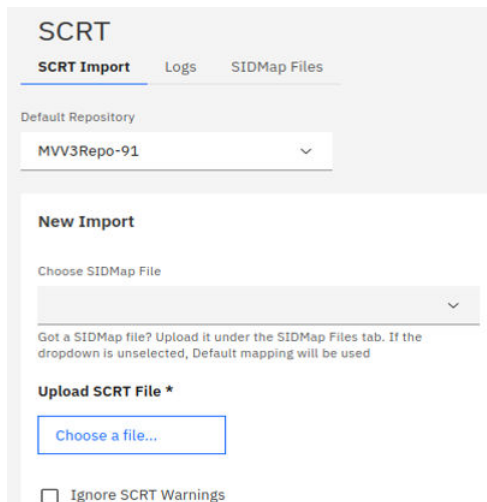


Figure 30. SIDMap Files Upload Screen

The Progress of the Upload process will then be displayed.

Note: When the file is being uploaded to the SIDMap page, do not navigate away from the **Upload** page before the process is complete to avoid terminating the Upload process.

2. You can upload either single or multiple files after clicking Upload by using the **shift** key to select multiple files.

Note: Once completed, the list of available SIDMap files is displayed.

3. If you wish to delete an uploaded SIDMap file, click the delete icon next to the file as shown below.
4. If you wish to delete all the SIDMap files which were uploaded, click the **Delete All** button.


SCRT		
SCRT Import	Logs	SIDMap Files
Uploaded Files	Size	Actions
SidMap01.txt	32 Bytes	

Figure 31. Delete All SIDMap Files

Repositories

You can select and view all the available repositories from a list in two ways.

1. On the **Homepage**, select the **Repositories** tile card or select the **Repositories** menu on the home page.

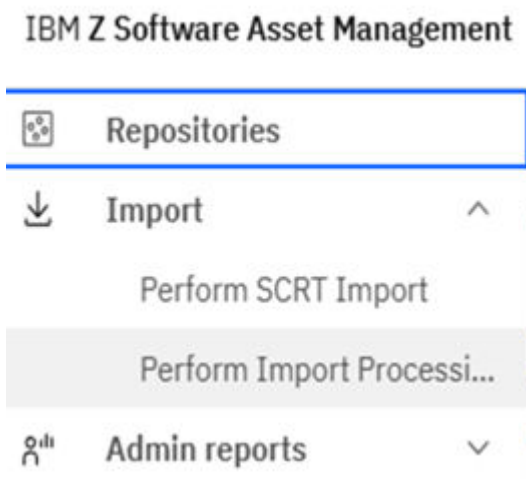


Figure 32. Repositories Menu

The **Repository list** page is displayed:




Repositories				
	Repository	Description	Disk Usage ↕	Created ↕
	MVV3Repo-91	MVV3 z/OS z/VM Guest System Repo	160.6 MB	2025-05-01 10:35:09
	PartialDemoRepo-91	Partial Demo DB data repository	844.0 KB	2025-05-19 11:45:44
	OMUxRepo-91	U-Plex Systems Repo	202.3 MB	2025-05-30 10:15:01

Figure 33. Repositories List Selection

Each repository has the following action menu options (under 'More Info').

- Set as default
- Viewlogs
- ViewStatistics
- Run Aggregator
- Reorg
- Administrator Only Functions:
 - Edit Repository Name

- Backup Repository
- Export Repository
- Delete Repository
- Reset Repository

To view the options, move the cursor to the three dots icon under the **More Info** column on the right-side of the screen.

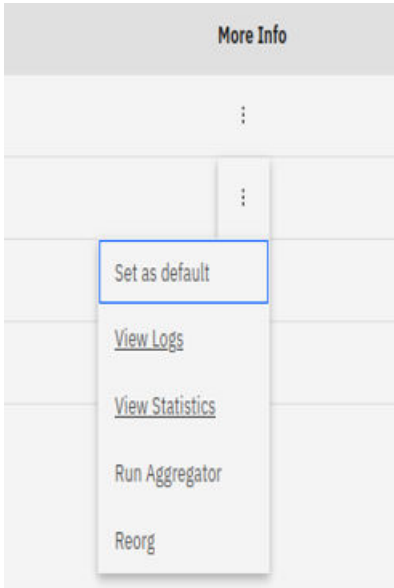


Figure 34. Repository User Options

Set Repository Defaults

When you select **Set as default**, the selected repository will be set as your default repository (marked with a green tick) as following:

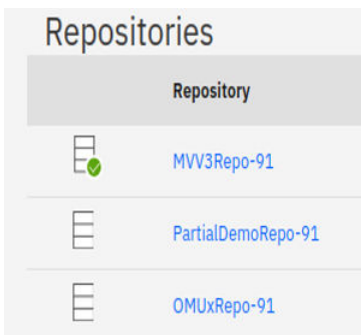


Figure 35. Set As Default

View Logs

When you select **View Logs** or click on a repository, the last process status is shown. If any current Inquisitor Import logs are available, they are shown by default. To view usage import or Aggregator log files, select the appropriate tab. The history (previous) logs related to the repository are available by selecting the **History** radio button. They will then be displayed as shown :

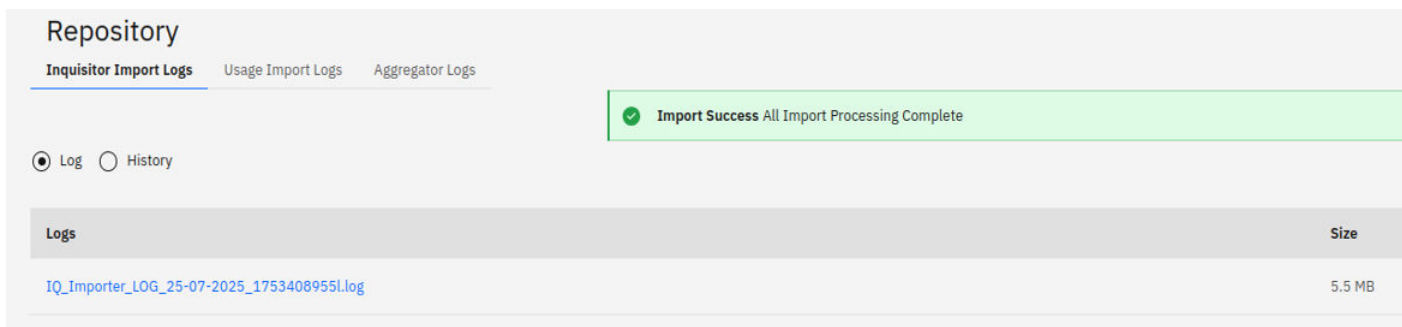


Figure 36. View Logs

View Statistics

When you click on View Statistics option, the selected SQLite Repository Database statistics are displayed as displayed in the following image:

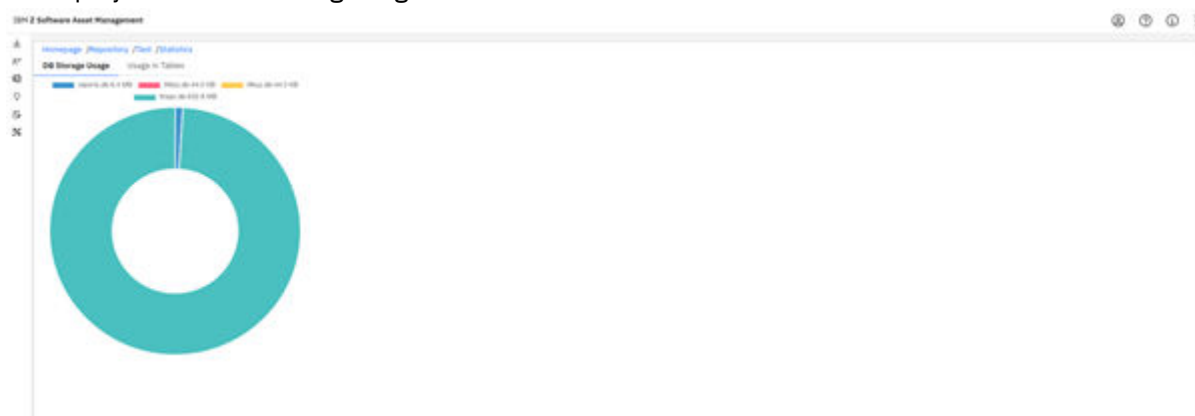


Figure 37. Database Statistic Graphical View

Initially, a graphical view of the repository databases' DASD/Disk space consumption is shown. You can exclude/include specific databases from the view by clicking on the specific database filename next to the color key shown.

Note: The **tfrepz.db** filename is the main repository database. The **reports.db** is the pre-process reports database. The ***lkb** and ***lku** files are the relevant LKB/LKU database files.

Selecting the **Usage in Tables** tab will show each tables page consumption for just the main repository database alone as displayed:

Name
TMODULE
IMODULE3
TUSEMTD
PKMODULE
IMODULE2
IMODULE1
IMODULE4
IUSEMTD1
IUSEMTD3
IUSEMTD5

Figure 38. Database statistics – Tables Usage

Note: This report may take some time to generate for larger repositories.

Run Aggregator

Aggregator will merge data from the repository Discovery tables and add or update the repository Asset tables as required. During the process, the aggregator processing page will be displayed. Use an Aggregator run to also refresh any pre-processed reports if your administrator has enabled this feature.

To execute the aggregator:

1. Select **Run Aggregator** and you will generate the following pop-up for option setting:

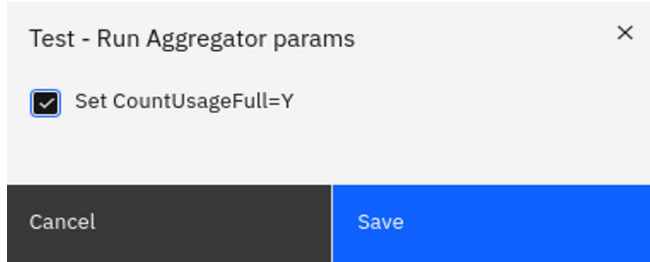


Figure 39. Aggregator Parameter Options

2. Select the **CountUsageFull=Y** setting as required by selecting or deselecting the provided checkbox.
3. Select **Save**

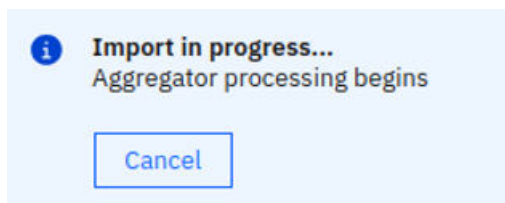


Figure 40. Run Aggregator

After successful completion of the Aggregator, the results screen is displayed.

4. To view the log file for the aggregator execution, select the **Aggregator Logs** tab as displayed:

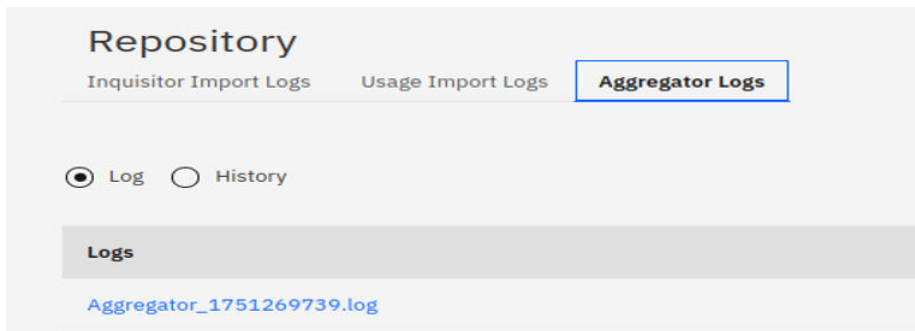


Figure 41. Run Aggregator Completion Showing Logs

Reorg

When you select Reorg, database optimization (SQLite Vacuum) takes place.

Reorganization is only possible if sufficient free DASD/disk space is available. As a rule, there needs to be at least twice the amount of free disk space available compared to the repositories total disk space consumption. See the home page for docker DASD Used and Free (available DASD) storage information.

When the reorganization begins, the following pop-up displays:

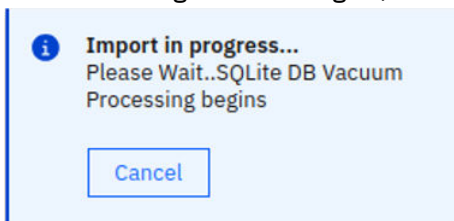


Figure 42. Reorg

Once a reorg request has started, a message is displayed in the auto-updating status card. If there is insufficient free DASD available to perform the database optimization, the reorg request will be terminated. Instead, an SQLite **incremental vacuum** is attempted.

If there is a failure during the process, a failure screen will be displayed.

Click on the **View Details** button and the failure error message will be shown.

Contact your linux or z/OS (for z/CX) host system administrator if you require assistance to resolve an insufficient DASD failure.

After a successful execution of the reorg process, the results page is displayed as follows:

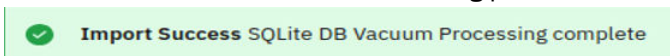


Figure 43. Successful Reorg

Note: There are no output log files provided for the Reorg process. See the docker container log output on the host of the last **import** execution for details if desired.

Administrator Reports

In this section, we will discuss Admin Reports in detail.

Under the **Admin Reports** menu, the following sub menus available:

IBM Z Software Asset Management

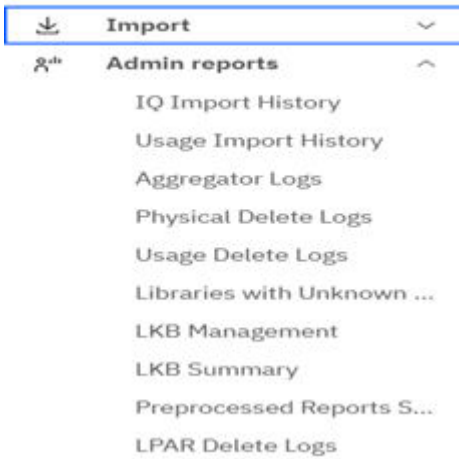


Figure 44. Admin Reports

- **IQ Import History:** The log records which are created by importing IQ files are shown in the IQ Import History reports.

OMUxRepo-... ▾ System IQ Scan Date

System	Operating System	IQ Scan Date	Date Imported	Sysplex	Full Rematch	Product Only	PLX	GKB Version
OMU2	UNIX	2021-06-09 09:44:30.000	2025-07-04 10:27:44.000	SYSPLEXU	Y	N	N	250627
OMU2	z/OS	2021-06-09 09:44:59.000	2025-07-04 10:18:06.000	SYSPLEXU	Y	N	N	250627
OMU3	UNIX	2025-05-27 06:52:11.000	2025-07-03 17:11:56.000	SYSPLEXU	Y	N	N	250627
OMU3	z/OS	2017-04-11 13:17:58.000	2025-07-03 17:10:00.000	SYSPLEXU	Y	N	N	250627

Figure 45. IQ Import History Log

- **Usage Import History:** The log records which are created by importing UM files are shown in the Usage Import History reports.

OMUxRepo-... ▾ System Usage Monitor Date

System	Usage Monitor Date	Date Imported	Sysplex	IZAM Version
OMU2	2023-05-09 00:00:03.000	2025-07-04 10:28:42.000	SYSPLEXU	8.3.0
OMU2	2023-05-08 00:00:01.000	2025-07-04 10:28:38.000	SYSPLEXU	8.3.0
OMU2	2023-05-07 00:00:01.000	2025-07-04 10:28:35.000	SYSPLEXU	8.3.0
OMU2	2023-05-06 00:00:00.000	2025-07-04 10:28:31.000	SYSPLEXU	8.3.0
OMU2	2023-05-05 00:00:01.000	2025-07-04 10:28:27.000	SYSPLEXU	8.3.0

Figure 46. Usage Import History Log

- **Aggregator Logs:** Aggregator execution log records can be found in the Aggregator logs report.

OMUxRepo-91	Date	
Aggregator Date	Countusage	APAR
2025-07-23 15:34:51.587	Y	OAGARel-ZS808

Figure 47. Aggregator Log History

- **Physical and Usage Deletion:** Execution log records can be found in the respective reports.
- **Libraries with Unknown Modules Report:** Libraries with unidentified modules can be viewed using this report.
- **LKB Management:** LKB Database entries hierarchical associations can be viewed and modified using this report.
- **LKB Summary:** You can also view (and delete) individual LKB database entries using this report.
- **Preprocessed Reports Summary:** If this report is enabled for the repository that you select, then you can view the summary of which reports support and are available for use .
- **LPAR Delete Logs:** Log records created due to any LPAR deletion requests can be viewed using this report.

Each of the remaining utility log record administration reports is similar to the previous reports displayed, other than their relevant data.

The IQ (Inquisitor) and UM (Usage Monitor) history reports show details on the imported data files used to load the selected repository data. Scan and import dates, along with other system-related, GKB version/ date, and IQ or UM collector parameters/filters are displayed.

Sample LKB Summary Report

The LKB summary report shows a summary of any IQ-tagged data found and added to your repositories' local knowledge database (LKB). This local product information is used during further IQ import matching processing. Relevant reports will include LKB matched data details as appropriate.

The LKB summary report can be used to delete specific entries from the LKB if required:

1. Under the **Actions** column, select **Delete** icon next to all the entries you wish to delete on the page.
2. Select **Submit**.

A **pop-up** appears to confirm your deletion request.

3. Select **Cancel** to exit the delete request or click **Delete** to execute your deletion selection.

The update of the LKB and if enabled, any pre-processed reports rebuild, will now execute.

4. To delete further entries on other pages, repeat the above process until all the required entries get deleted.

Vendor	Discovery Release Name	Discovery Release Option	Releases	PID
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3
NIFTY S/W INC	NIFTY PLUS	BASE	3.2.1	NIFTY-3

Figure 48. LKB Summary Example

Report Features

In this section, we shall discuss the report features in detail.

Multiple Repository Reporting

Some reports in both the Asset and Discovery sections provide support for generating report data from multiple repositories rather than just the default repository. The current default repository will always need to be one source of input. In contrast, one or more repositories that have been loaded with data can also be used as input to the report query.

Data generated from multiple repositories is viewed as data generated at the point in time the report was accessed. Report data will not be dynamically updated should another user change one of the selected input repositories. If you need to view an updated multi-repository report, you can either disable and then re-enable the multi-repository report option or view another report and then return to the desired report and re-generate the report data using multiple repositories.

Report Download

Each report has a download icon (next to the **SQL** icon at the top right of each report) available for downloading the displayed report in CSV format. You can download a CSV-formatted report by applying filters of your choice up to a maximum of 100 million rows of data.

Report Performance

To provide a responsive user experience and to reduce the load on the UI docker container and the client browser when viewing reports that contain large amounts of data, import processing can perform a **pre-processing** step automatically, for specific supported reports, at the end of any action that may result in changed repository database contents.

For this feature to be enabled, the product administrator must enable **Report Pre-processing** in the Admin Tools→AppSettings menu option. Then, each account (of any authority) that wants to utilize the pre-processed reports feature must next enable the **Show pre-processed report** option in their respective **Profile Settings** menu selection. As shown in the following figure:

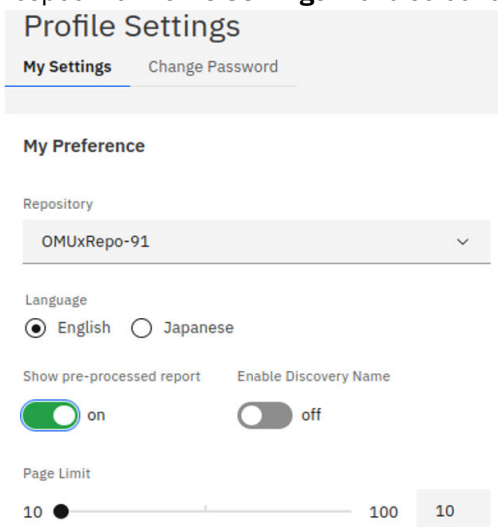


Figure 49. User Profile Settings

Once the product administrator has enabled the report pre-processing feature, any subsequent repository updates using any of the available repository utilities, import or Aggregator executions, will automatically perform any related report pre-processing actions on supported reports. To ensure all supported reports are loaded for pre-processing with current data after the Administrator activates the pre-processing feature, an Aggregator execution should be performed on each repository currently loaded with data.

Actions, such as importing usage detail data with usage period data or importing large amounts of usage period data into a repository, can result in very large amounts of DASD storage being required for pre-processed report database storage.

Depending upon how much data is resident in the repository database, this step may take a few seconds to complete through to a number of minutes. The reports that are available for use as pre-processed reports, their status and data load information are available in the **Admin report Preprocessed Reports Summary**. Each report that is available for each category is shown with a support status and a loaded data status. Not all reports are supported for use with pre-processing.

If you tend to load IQ data separately from usage period data, you may notice that a number of supported pre-processed reports are not loaded with data. As some reports require usage data, these will be unavailable until usage data is loaded into the repository.

Pre-processing, when activated by an administrator, can provide a more responsive report viewing time for large repositories compared to a report that is loaded directly from the repository database. By eliminating a lot of the real-time data analysis that is performed on the repository data directly as it is being viewed, a pre-processed report can load faster and be more responsive when paging backward or forwards through the data interactively.

The trade-off here is that in exchange for reduced immediate CPU, memory requirements, and a more responsive browser experience, more DASD storage is required to store the pre-processed reports that will be ready for viewing when required. The **Usage Monitor File Detail** report is one such report that can significantly increase DASD storage requirements if large amounts of usage detail data is loaded during usage import processing (selected when initiating import processing).

Should DASD usage become too excessive, the administrator can deactivate the pre-processing support. To return the used pre-processing DASD back to the system for use, an **aggregator** execution on each of the affected repositories needs to be run after pre-processing deactivation is performed. Once this is completed, the database DASD consumed for pre-processing will be returned to the host system. However, report viewing performance may be degraded.

If pre-processed reports have been enabled by your product administrator and you select a pre-processed report to view with loaded data, but the data is still not viewed using the pre-processed database (the lightning bolt icon is absent), ensure your account profile has the **Show from Pre-processed report** option set to **On**. If the lightning bolt icon on the shown report is red, this indicates a loading issue, and hovering the mouse pointer over the red icon will show information on the cause.

If the lightning icon changes to a **red** outline, this indicates the report is eligible for pre-processing and this feature is enabled, but the data loading process has either not completed or failed to complete successfully. You can hover your mouse pointer over the thunderbolt icon to see details on the pre-processing status.

Pre-processed Reports Summary

You can select a pre-processed report summary in two steps.

To select the report, follow these steps:

1. In the **Homepage**, under IBM Z Software Asset Management, select the **Admin Reports** and further select **Pre-processed Reports Summary**.





Figure 50. Home Page

The **Pre-processed reports Summary** page is displayed as follows:

Name	Support Status
Machine Inventory	 Not Supported
Product Inventory	 Supported
Product Suites	 Not Supported
Product Audit Trail	 Not Supported

Figure 51. Pre-processed Reports Summary Page

The  icon represents **Not loaded** when under the **Loaded** column and **Not Supported** as a pre-processed report if shown under the **Support Status** column.

The  icon represents **Successfully Loaded** as a pre-processed report when shown under the **Loaded** column and as **Supported** when shown under the **Support Status** column.

This page summarizes all the available reports and indicates which are supported and available to be loaded from the reports pre-processed database. The **Support Status** column shows whether the report is currently a supported pre-processed report or not. The **Loaded** column indicates if report data is available in the pre-processed reports database.

Pre-processed reports offer a performance enhancement for some reports that can be slower to load, especially when large amounts of repository data have been loaded. The pre-process report generation occurs automatically after the aggregator step has completed during an import process or immediately after any of the repository DB utilities have been executed. To refresh any of the pre-processed reports for a specific repository you can select an aggregator execution against that repository.

You can select one of the two tabs available on the right-hand side to switch between report categories.

You can use the report name on the left-hand side to directly transfer to the selected report to view relevant data from your current default repository.

If pre-processed reports have been enabled by your product administrator and you select a pre-processed report to view with loaded data but the data is still not viewed from the pre-processed database (the lightning bolt icon is absent), ensure your account profile has the **Show from Pre-processed report** option set to **On**. See the **Report Features** section for more details.

Chapter 3. Logging In as Administrator

All the functionalities which are enabled for a normal user are also applicable to the Admin user with some additional functions and privileges.

Additional functionalities available for administrator are:

- Admin tools menu is enabled for Admin users.
- Admin can backup, restore, reset, create and delete repositories.
- Admin can create and delete user accounts.

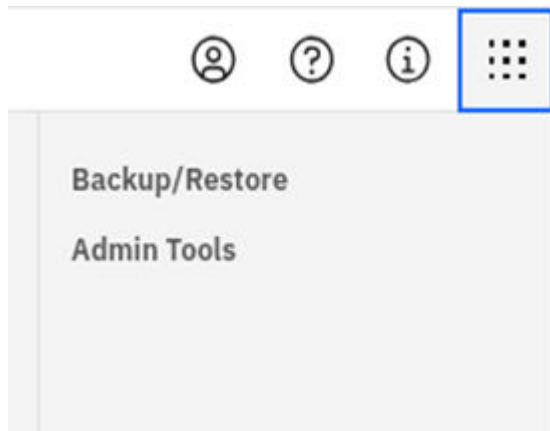


Figure 52. Admin Tools

Administrator Tools

Admin tools is only available for those users who have Admin role. Follow the steps given below to access Admin tools.

1. Login to the IBM Z Software Asset Management V9.1 application.
2. On the **Homepage**, select the grid on the top right-hand side. Select **Admin Tools** from the menu.

The **Admin Tools** page is displayed by default at the **Licenses** tab.

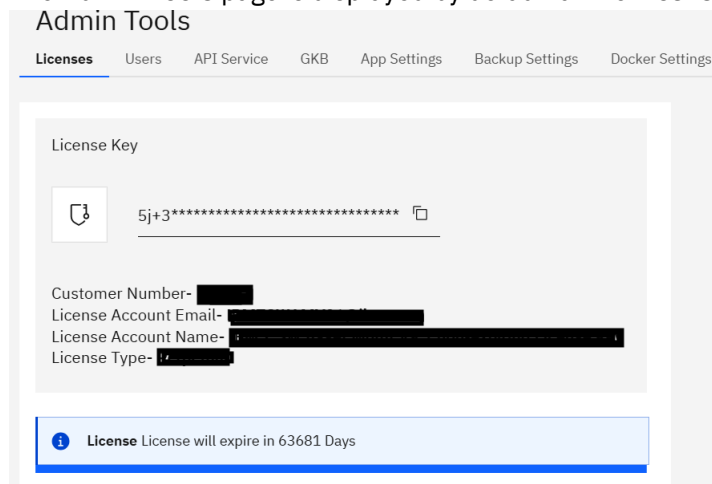


Figure 53. Admin Tools Page

Admin Tools includes six different tabs for performing application maintenance activities.

- **Licenses** - Your IBM Product License Key details and update option.

- **Users** - Perform User account Maintenance Tasks.
- **API Service** - Define, remove, start and stop API service containers.
- **GKB** - Update the installed Global Knowledge Base (GKB) Databases.
- **App Settings** - Change Global Application settings.
- **Backup Settings** – Configure additional external storage locations for backup/restore media.
- **Docker settings** – review host docker engine connection and type. Update docker TLS files if using secure docker engine access.

Product License Key

As an admin, you can view and perform below tasks in **Licenses** tab:

- Check/review the existing product licensedetails such as your license type. The product license key will display the first four characters and remaining characters are shown as asterisks (*) to protect the key.
- Copy your product license key and paste it in other places, such as the provided Swagger UI API authorization page or share with developers to authenticate with the API service.
 - View the remaining days before the existing product license is to expire. This simply refers to a non-expiring date.
- You can update the product license key by clicking the **New License** button.
 - This may be required if you, for example, upgrade to a newer version/release. Following is a screenshot of the License Key window:

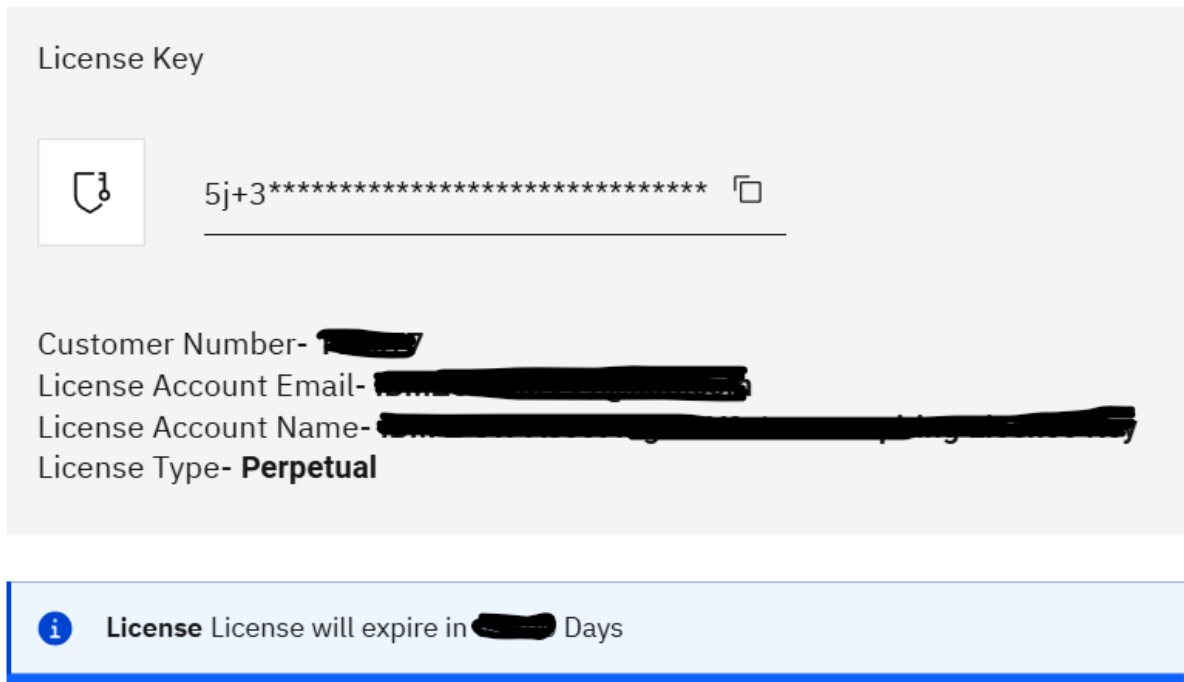


Figure 54. License Key Page

Add or Update Product License Key

Following are the steps to add/update the product license key:

1. From **Admin Tools**, under **Licenses** tab, select **NewLicense**.

The **Add New** pop-up appears.

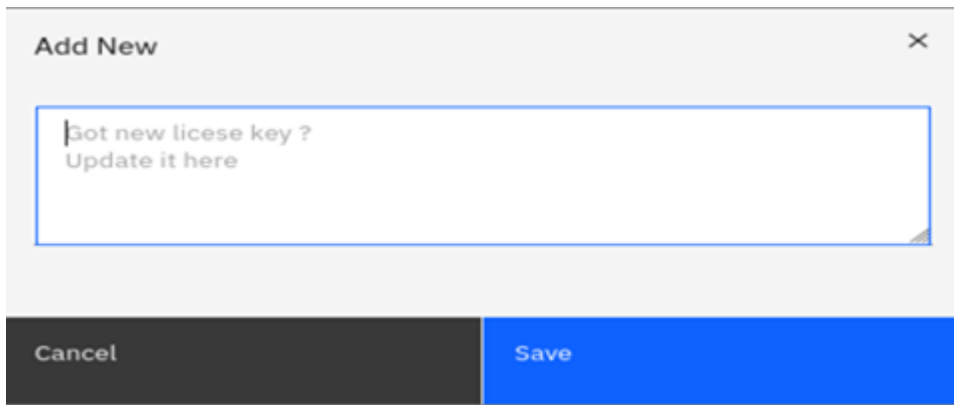


Figure 55. Updating Product License

2. Enter new key.

Note: If the license key is changed/updated, a re-validation is performed.

3. Select **Save**.

Once the new or updated product license key has been validated, the new license details will be reflected in the license key information tab.


Contact your IBM Z Software Asset Management product support representative to request a new license key if a product upgrade results in a new one being required.

User Administration

As an admin, you can view and perform the following functions under the **Users** tab:

- Check the existing user details.
- View a displayed list of all current users along with their roles.

Note: The currently logged in user details are excluded from the list.

- You can delete a user by clicking the  button.
- You can add a new user by clicking the **New User** button.

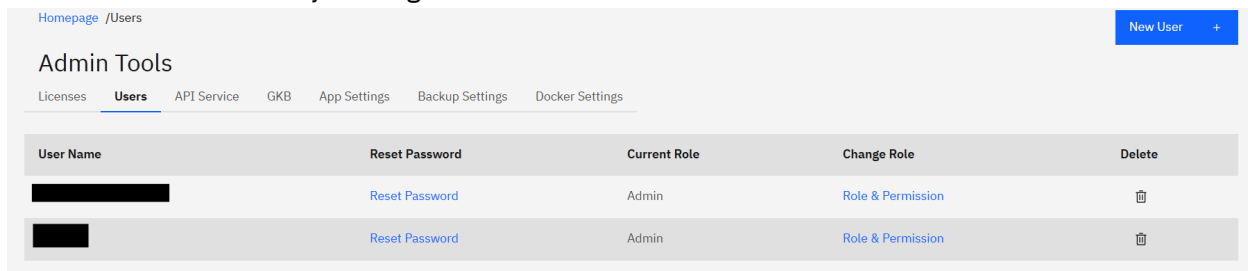


Figure 56. Users Tab Report

Add New User

Following are the steps to add a new user:

1. On the **User** page, select **New User**.

The **Add New User** pop-up displays:

Figure 57. Add New User

2. Provide Username, Password, Default Repository, and Role for the new user creation. The default role is **User**.
 - The role can be either **Admin**, **Auditor**, or **User** based on preferences.
 - When selecting the **Admin** role, you will have the same authority as the Admin, and the **User Permissions** section will be disabled as an Admin user has full authority enabled.
 - Selecting an **Auditor** will enable a predefined set of read-only report and activity access permissions.
 - For the **User** role, the **Permissions** section is enabled. Select the desired report access and repository database update actions for the user from the selections available.
 - All account roles password rules are:
 - Password must be min 8 characters long
 - Password must contain at least one digit
 - Password must contain at least one uppercase letter
 - Password must contain at least one lowercase letter
 - Password must contain at least one special character
 - Password must not contain any whitespace
3. Select **Save**.

Change User Role

Follow these steps to change user roles:

1. From the **Admin Tools > User** page, click on **Role & Permission** link that is listed under the **Change Role** column.

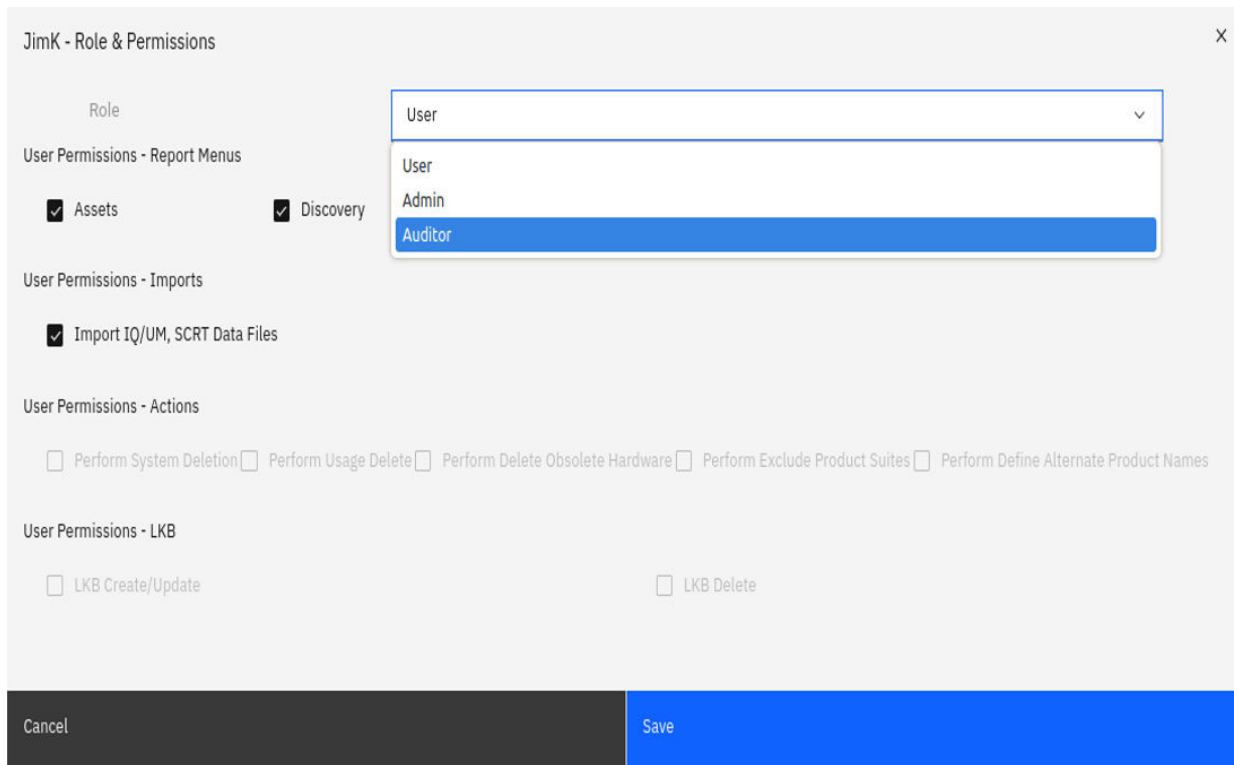


Figure 58. Changing Role

2. Select the applicable role across the **Role** drop-down menu.
3. Select **Save**.

API Service

As an admin, you can view and perform below tasks using the **API Service** page. You can:

- View the available list of API's instances that are created and running.
- Create new API instances by clicking the **New API Instance +** button.
- Check the API instances listening port.
- Start and stop existing API service instances.
- Delete an API instance by clicking the delete icon.
- Edit an API service port number by clicking the edit button.
- Start an API service container by clicking the start button.

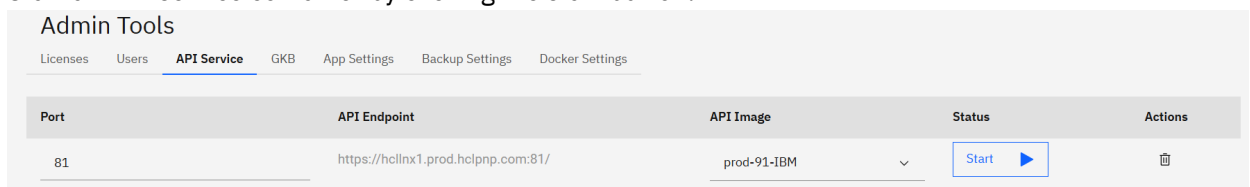


Figure 59. Start API Service

- Only API images that are matching and that are supported by the UI version will be available for selection.
- Once the API Service starts, the **API Service** page enables the URL at which the API service is available for connections.

Admin Tools						
Licenses	Users	API Service	GKB	App Settings	Backup Settings	Docker Settings
Port	API Endpoint	API Image	Status	Actions		
81	https://hclinx1.prod.hclpnp.com:81/	prod-91-IBM	Stop <input type="checkbox"/>			

Figure 60. API service URL and API Service Stop Button

- To stop the API service, select the **Stop** button.
- Click the shown API Endpoint/hyperlink to access and use the API Swagger UI.
 - Refer to the [External Swagger Documentation](#).
 - Once an API instance is activated, the API service is available with a basic **Swagger UI**. This allows users to interact with the API without needing to have any of the implementation logic in place.
 - The Swagger UI enables users to interact with the available API end-points and view loaded repository report results data in an interactive way after completing authentication.

Add New API Instance

Follow these steps to add a new API Instance:

1. On the API Services tab, select **New API Instance +** button.

The **New API Instance-Configuration** page is displayed as follows:

Figure 61. New API Instance

2. You can see the **Port** text box is pre-filled with the next port number in the sequence from where the last API instance was defined.
3. Select the **Port** field, use the **+** or **-** buttons to increase and decrease the port number, or enter a port number of your choice.

Note: The API Image Tag will be pre-filled with the currently matching version API image tag. This should not require change unless directed by technical support personnel.

4. Select the **Start** checkbox if you want the API instance to start immediately.
5. Select **Save**.

The API instance is created, and the API list page refreshed.

The API Instance that you selected will now start.

Swagger UI Use - Authorization

Viewing all the available API endpoints and information on their required input and/or parameters does not require authorization. But if you wish to try out any of the available API requests using the Swagger UI, you must first authenticate yourself to the API service. This requires you to provide the current product license key and a valid UI account username and password.

Note: Administrator credentials are not required to interact with the API. However, an administrator will need to start an API instance. Administrator also needs to provide the API developer with the URL, port, user credentials, and product license key so they can complete authentication and interact with the API using the Swagger UI or programming tools.

1. In the available API instances that are currently running, select an active API instance like the one that is displayed in the following image:

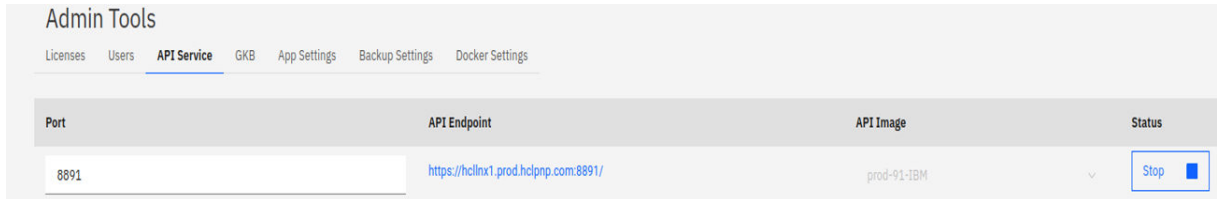


Figure 62. API Saved List

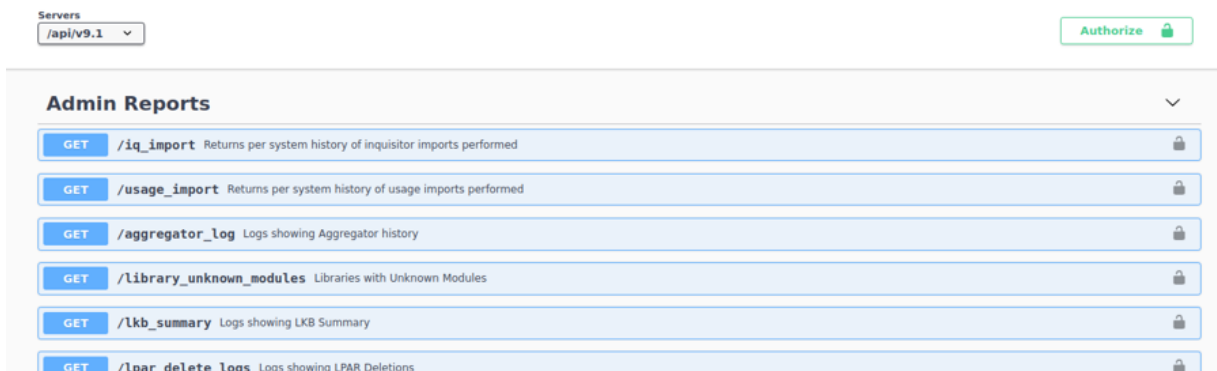


Figure 63. API Swagger Authorization Access

2. To authenticate, select **Authorize**.

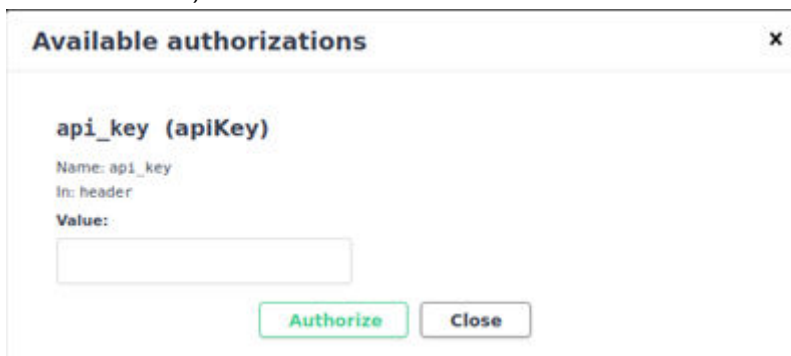


Figure 64. Swagger API Access Authorization Window

3. Enter your product license key in the **api_key (apiKey)** field.
4. Select **Authorize** to confirm the license.

Note: The **Authorize** button will change to **Logout** once entered.

Note: The **api_key_parm** field is currently not used or supported in the V9.1 release.

5. In the **basicauth** section, enter a valid username and password.

Note: Username and password must be the same that is used for accessing the V9.1 Web UI.

The image shows a dialog box titled "basicauth (http, Basic)". It has two input fields: "Username:" and "Password:". Below the fields are two buttons: "Authorize" (highlighted in green) and "Close".

Figure 65. Authorize Using User Credentials

6. Select **Authorize**.

If the credentials you entered have been verified successfully, the **Authorize** button will change to **Logout**.

7. Select **X** or the Close button to close the Authorization request window.

If the authentication has been entered successfully, all the reports and utilities shown in the Swagger UI including the Custom SQL post capability will now be available to the user.

8. To execute a report available under the **Asset** reports section, select the **GET** button next to your selected report (eg: /productinventory) to expand the report parameters and query section.

9. Select the **Try It Out** button on the right-hand side.

The image shows the Swagger UI interface for the "Asset" section. It lists several API endpoints with their methods and descriptions:

- GET /ibmvalueunits: Return Array of product use by machine and IBM value units
- GET /productsuites: Return array of product suites
- GET /productbysystem: Return array of product per system
- GET /productinventory: Returns array of product inventory by system

 At the bottom right, there is a "Try it out" button. The "Parameters" section is partially visible below the endpoints.

Figure 66. Swagger UI Try-It-Out

10. In the **Repository** section, enter the name of a loaded repository you wish to execute the report against. Optionally enter any of the available filters, such as **System**, **Vendor**, or **Product**, to limit output results.

11. Next, select the **Execute** button to perform the query.

12. Under the **Responses** heading will be three sections.

- **Curl** – this is mainly useful for your API developer(s) as it provides the option to remotely execute the report request from outside of Swagger (i.e., from z/OS)
- **Request URL** – this is the URL with the API endpoint and parameters used for the report request.
- **Server response** – this provides the API server’s response to the user. A valid response code is **200**, and the details will contain the JSON-formatted data results of the report.

Some of the other possible server non-successful response codes are also displayed in the following image for reference.

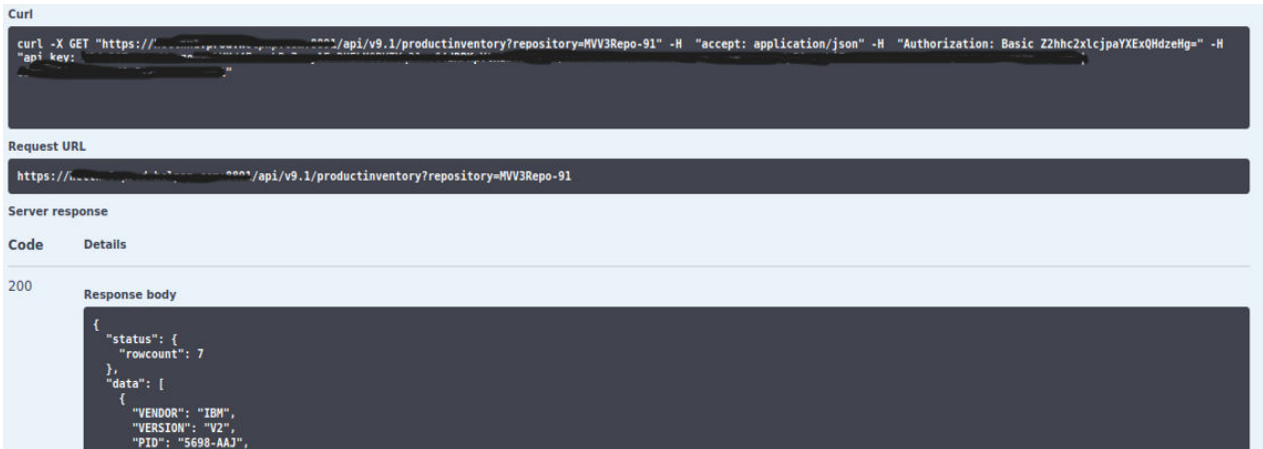


Figure 67. Swagger UI API Response

The same process can be repeated for any of the other Swagger API endpoints that are available. Some require more parameters for the report to be executed. These input parameters will be shown in the **Parameters** section. Fields marked as *** required** and must be provided while other parameters that are optional can be set or left empty.

GKB Maintenance

As an admin, you are authorized to update the product's internal GKB database. A GKB update file can be downloaded from your IBM **Fix Central** account portal.

1. On the **GKB** page, select **Choose a file** option to select the previously downloaded GKB update package file.

Eg: GKB_ymmmdd-s390x-V9.1.tar.gz.encrypt, where the **yymmdd** is the build/version date of the GKB database.

2. Select **Choose a file** and navigate to where you downloaded the GKB update package file and select this file.
3. Once you can select your file from the **Choose a file** option, select the **Update GKB** button to execute the upload and GKB update process.

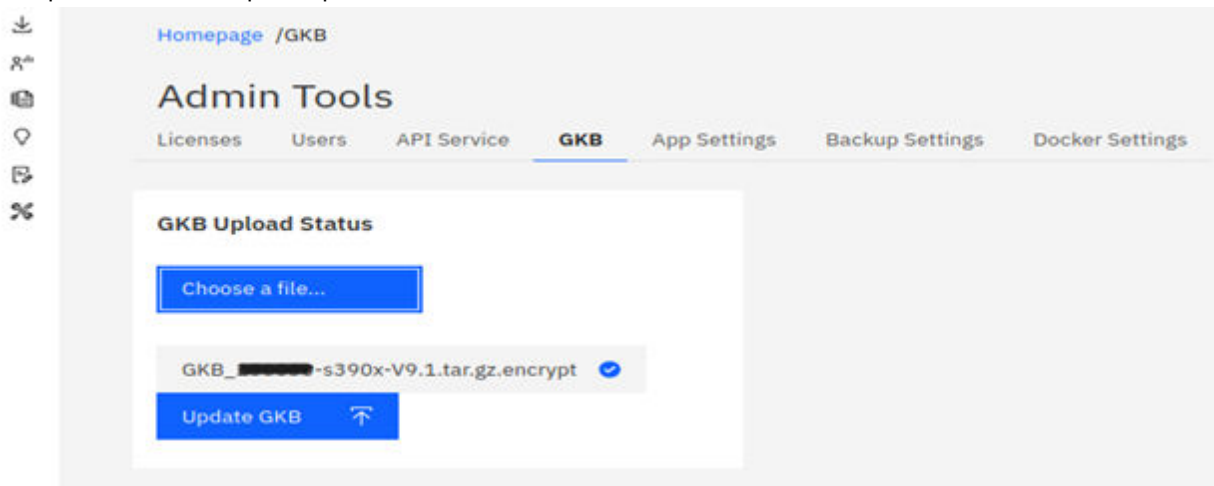


Figure 68. Process GKB Update File

Note: While the file is being uploaded to the GKB update page, do not navigate away from the **Upload** page before the process is complete. Otherwise the GKB update gets cancelled.

This will now perform the required back-end GKB Databases update processing. The Upload Status of the update file is displayed during processing.

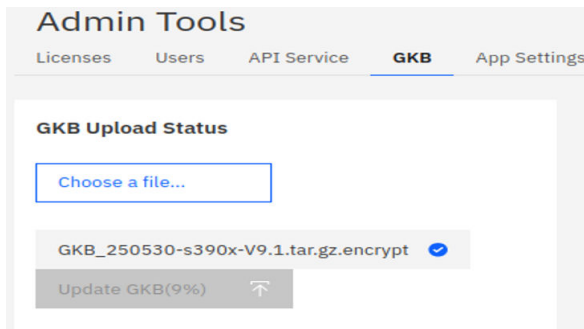


Figure 69. GKB Upload Progress Window

Once the GKB upload process completes, the update processing will begin automatically.

After the update processing is over, you will see the GKB successfully updated message as follows:

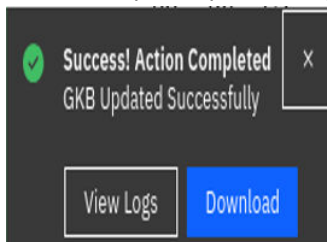


Figure 70. GKB Successful Status Update

4. If you click on the **View Logs** button, the GKB update process output log details will be displayed as follows:

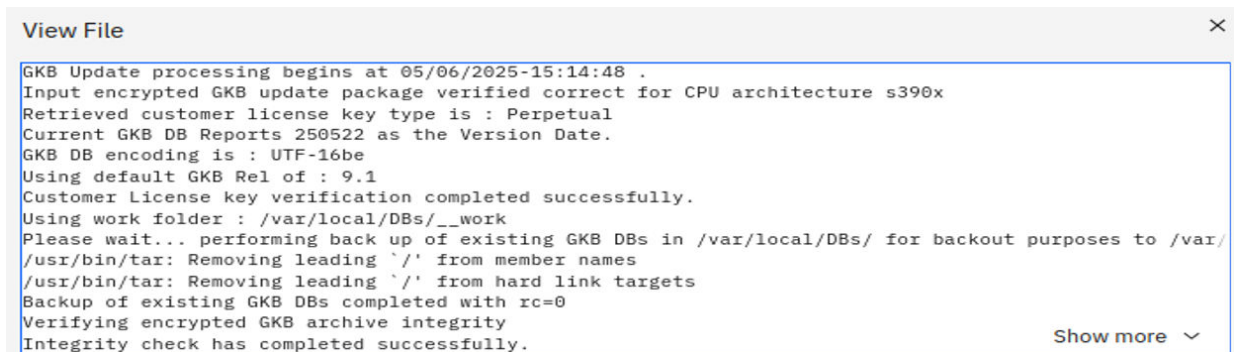


Figure 71. GKB Successful Update Status Logs

5. Select the **Show more** expander to see more of the log file in the viewer window.
6. If the GKB update is not successful, then a GKB failed message will appear as follows:

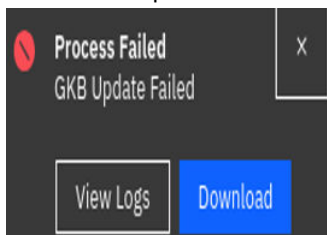


Figure 72. GKB Update Failure Message

7. View the error logs by selecting **View Logs** option.

Once the cause of the failure is resolved, you can upload the GKB update file again and re-initiate the GKB update processing.

8. If the GKB update is successful, you can download or view the GKB Changes file. To download through your browser, use the **Download** button.

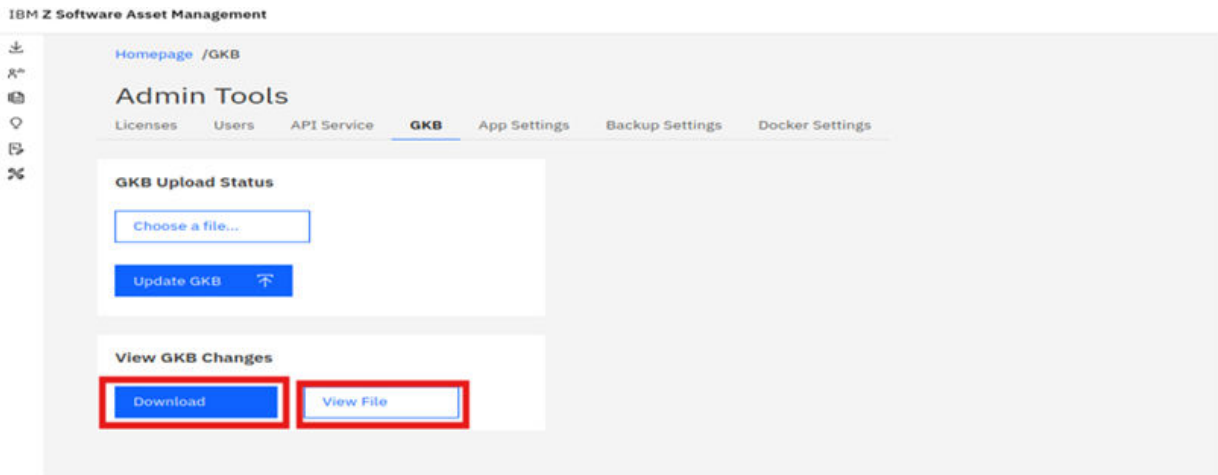


Figure 73. GKB Updates - File Download Option

9. To just view the GKB changes file without downloading to your local machine, use the **'View File'** button.

Application Settings

As an Admin, you can perform the following activities on the App Settings page.

- Debugging options – **use only if directed by technical support**
- Report Preprocessing
- Enable **remember me** at login
- Auto Session Timeout
- Max API Instances allowed
- Update TLS/SSL browser connection files

Administrators are authorized to enable the application's Debugging options when requested by technical support personnel. Administrators are authorized to enable the **Remember Me** feature. By default the following is disabled:

- Remember Me
- Report Pre-processing
- Auto session timeout
- Debugging

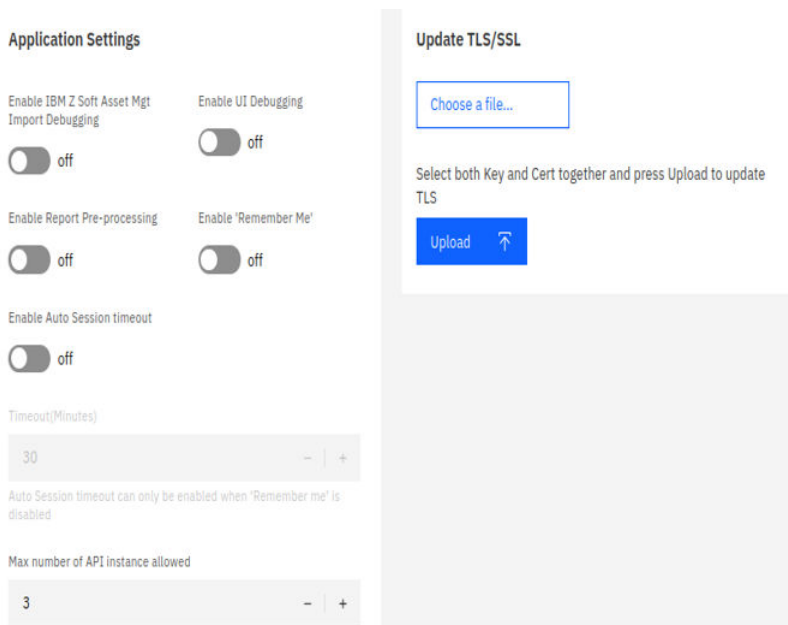


Figure 74. Application Settings

1. To enable the report performance feature for affected reports, set the **Enable Report Pre-processing** option to **On**.

A warning flash message will appear. Please read this information carefully, as it will relate to the increase in DASD utilization based upon the use of this feature.

Note: See the **Report Performance** section for more information.

2. If the **Enable Remember Me** option is set to **On**:
 - **The Remember Me** checkbox will appear on the User login screen.
 - Users can check or uncheck the **Remember Me** option, based on their preference during login.
 - If **Remember Me** was checked, the login details are saved for a month. Otherwise, the token will expire when the user closes their browser session.
 - If the **Enable Auto Session Timeout** option is enabled, then the user session token will expire based on the timeout value provided by the administrator.

Log in

Username

Password




Remember Me

Login



Figure 75. User Login Page with Remember Me Option

3. **Enable Debugging** mode should only be activated on **direction from technical support staff**. Significant processing performance degradation and logging overhead may occur when this option is enabled. When the Enable Debugging option is activated:

- Debugger logging functionality and data collection will be enabled for all selected component processing. Large log and data collection files may be generated.
- The debugging icon  will appear at the top right corner of the page.
- All user processing will be performed in debug mode until this option is deactivated.

Note: This option is not recommended for normal use. It should only be enabled under the direction of a technical support engineer to assist with the gathering of problem analysis information.

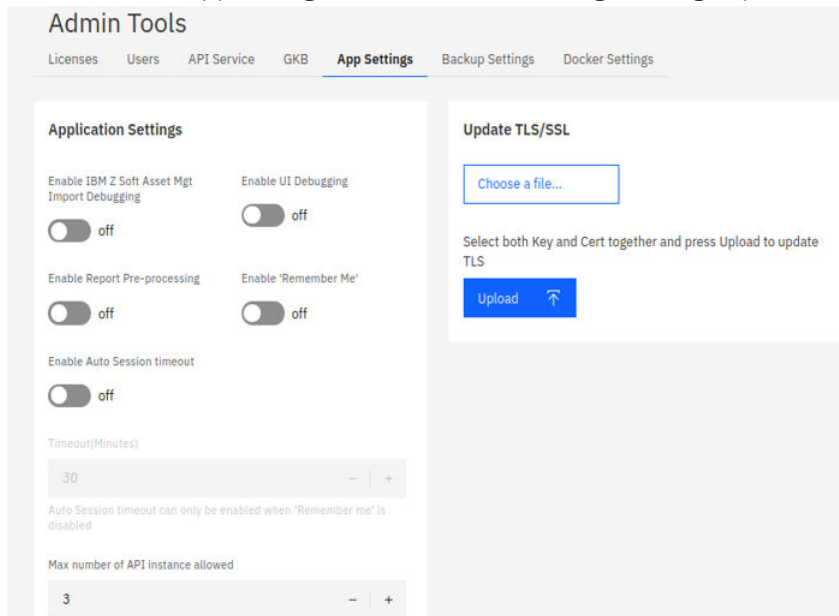


Figure 76. Enable Debugging

The debug logging options are split into two sections:

- UI (web) debug logging
- Import (back-end) debug logging

The debug icon will appear half red if only one debug logger is activated, or fully red if both debug loggers are activated.

Note: Your technical support engineer will direct you as to which debug loggers are to be activated if needed.

Auto Session Timeout

If, **Enable Auto Session** option is set to **On**, you will need to provide a **Timeout** value in minutes. Then any user web browser session will remain available during times of inactivity until the timeout value has elapsed. At this point, you need to log in again using their credentials.

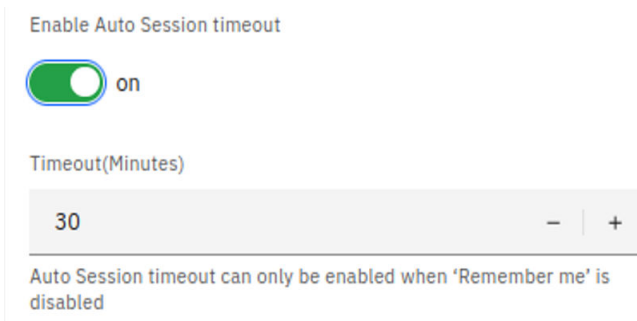


Figure 77. Auto Session Timeout

If auto session option is set to **Off**, then no automatic session timeout will occur.

API Management

If the API service container has been installed, you can set this option to the maximum number of API service container instances you wish to allow to be created and started. The supplied default maximum is 3.

Max number of API instance allowed

Figure 78. API Instances Limit

TLS/SSL

If the existing TLS/SSL certificate needs updating or is expiring, then an admin can upload replacement versions here.

Update TLS/SSL

Select both Key and Cert together and press Upload to update TLS

Figure 79. TLS/SSL cert.pem & key.pem Update

The admin should upload both the **key** and the **cert** (*.pem type files only are supported) files together by:

1. Selecting the **Choose a file** button (hold the shift button to enable multiple entry selection).
2. Selecting **Upload**.

The TLS/SSL upload card section available on the app settings page is as displayed in the following image:

Update TLS/SSL

Choose a file...

key.pem	✓
cert.pem	✓

Select both Key and Cert together and press Upload to update TLS


Upload 

Figure 80. TLS/SSL Certificate Upload

After completion of SSL/TLS upload process, the results message will be displayed as follows:

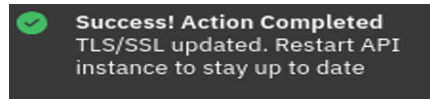


Figure 81. TLS/SSL Update Success Message

Note: After the TLS/SSL update is complete, all users should reload the active page or re-login to the application to begin using the updated TLS/SSL certificate. Any API service instances also running should be restarted.

Backup Settings

Externally mounted backup/restore media locations can be configured here.

Only local host mount-points/locations are supported. Though these mount-points can be remotely attached (eg: NFS, etc.). Backup/restore performance may be impacted when using network-attached/remote-accessed storage locations, depending upon the network bandwidth available.

Admin Tools

Licenses Users API Service GKB App Settings **Backup Settings** Docker Settings

Backup - Mount path

Storage 1

Storage 2

Download App Settings

Download Restore

Figure 82. Backup External Media configuration

Note: Any changes made to external backup media may not be reflected in the Backup/Restore history pages and may also result in file verification scanning being performed on the new or changed storage media location. Which, depending upon the size of the backup media and the location, may take some

time to complete. Access to the backup/restore file lists and media will be temporarily disabled until this verification scan is completed.

Application Settings Backup

You can back up the current application configuration and user settings to your local system through your browser using the **Download** button. Should an application settings recovery be required, the downloaded file can then be used for the restore process by using the **Restore** button and by selecting a previously downloaded application settings backup file.

The downloaded file is not useful for any purposes other than recovering the product's Admin application and configuration settings.

Download App Settings



Figure 83. Application Configuration Backup

Docker Settings

From the **Admin Tools** page, select the **Docker Settings** tab, and you will see a page that shows the docker engine connection status, the type of connection being used, and a section available for updating any docker client TLS connection files to the host's docker engine.

Note: Docker host socket connections do not require any TLS connection files.

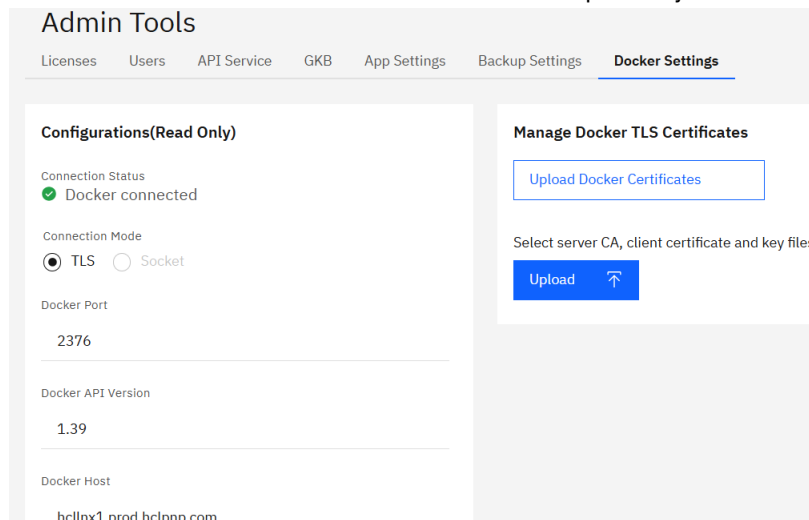


Figure 84. Docker Settings

Before updating the TLS connection files, it is recommended that you first move the following three required files to a separate folder on your local system to make selecting them all at the same time easier:

- Docker server CA
- Client certificate
- Key files

They all must be of type **pem** to be accepted.

It is recommended that you ensure all users are logged off from the product, that all processing tasks are completed, and any API service instances are stopped before installing any new host docker TLS access files.

Ensure you perform the product docker TLS access file update process for IBM Z Software Asset Management immediately after updating the host's secure docker engine TLS files and before any users, processing tasks, or API services are used.

Note: It is NOT recommended to shut down the IBM Z Software Asset Management UI docker container before or during the updating of the host's secure docker engine TLS data files, as you will need the Web UI available to upload your new secure docker client TLS files.

After successfully updating your host's secure docker engine TLS files, to perform the product's docker TLS access update, do the following:

1. Select **Upload Docker Certificates**.

A dialog box will appear.

2. Navigate to the folder where the three required TLS files are stored, select one of them, then press and hold the shift key on your keyboard while selecting the other two files at the same time.

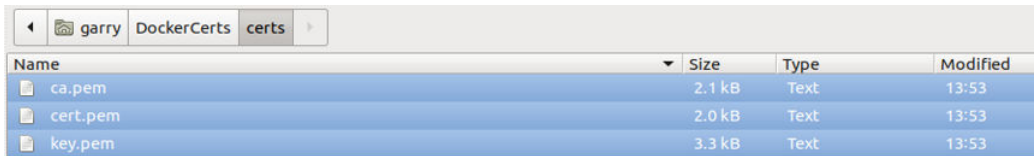


Figure 85. Select Multiple Docker TLS Client Files

3. Select **Open** to identify the files selected.
4. Select **Upload** button to start the file replacement processing.

The update process will begin, and a status message will be displayed reporting on the result once the update processing has been completed.

Note: If you regenerate the host's secure docker client and server TLS files and then update the host's docker engine to use them, while the IBM Z Software Asset Management docker TLS access files are also updated, then all interactions with the host's docker environment by the product will be unavailable. This will result in various UI interactions that show information such as available repositories being unavailable, Administration functions, and Import and utility functions failing to initiate or be available for use.

Repository - Creation, Deletion & Reset

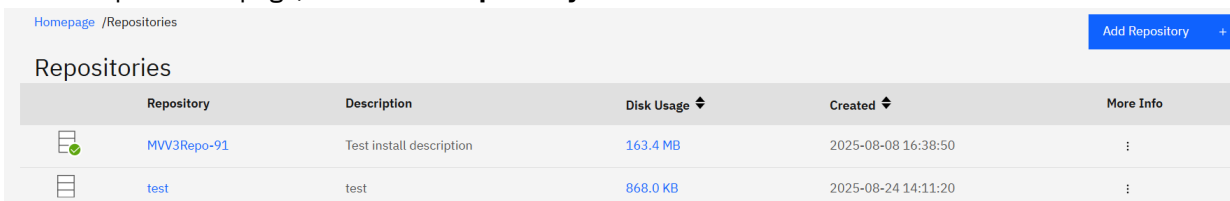
Besides Admin tools functionality, The administrator also has authority to:

- Add Repository
- Delete Repository
- Reset Repository
- Edit Repository Description

Add Repository

Follow the steps given below to add a new repository:

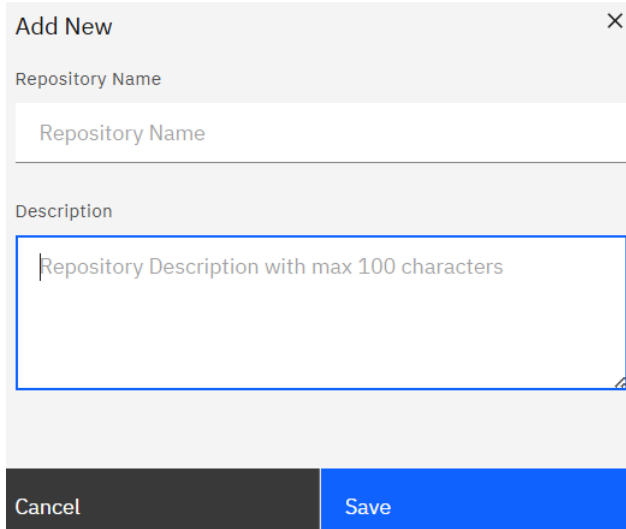
1. On the repositories page, select **Add Repository +**.



The **Add New** pop-up displays.

Figure 86. Create Repositories

2. Enter repository name in the **Repository Name** field and optionally enter a description in the **Description** box.



The image shows a modal dialog box titled "Add New" with a close button (X) in the top right corner. Below the title bar, there are two sections. The first section is labeled "Repository Name" and contains a text input field with the placeholder text "Repository Name". The second section is labeled "Description" and contains a larger text area with the placeholder text "Repository Description with max 100 characters". At the bottom of the dialog, there are two buttons: "Cancel" on the left and "Save" on the right.

Figure 87. Add New Repository

Note: Only the repository description can be changed after creation.

3. Select **Save**.

The new repository is created along with all the required databases, folders, and supporting files.

A status message will be shown after the repository creation processing has been completed.

If successful, the new repository will appear in the repositories list and be available for import processing.

Delete Repository

As an admin, you have the authority to delete a repository.

Follow these steps to delete an existing repository:

1. On the **Repositories** page, locate the repository you wish to delete.
2. Select the three dots menu icon under the **More Info** column.
3. Select **Delete** from the drop-down menu.

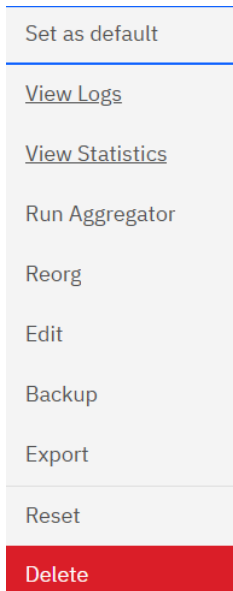


Figure 88. Delete Repository

If the repository is deleted successfully, all disk/dasd space occupied by the repository will be returned to the available disk space. The deleted repository is no longer available for use.

Note: This process is **permanent and irreversible** without a repository restore file available.

Note: Your default repository cannot be deleted. Change the default repository first if you wish to delete your current default repository.

Reset Repository

When you perform a repository Reset, the repository (all database data) gets deleted first, followed by a new repository database, all associated folders, and supporting files that are re-created and initialized.

Note: This process is **permanent and irreversible** without a restore file.

Follow these steps to reset the repository:

1. On the **Repositories** page, locate the repository you wish to reset.
2. Select the three dots menu icon under the **More Info** column that is located next to the target repository.
3. Select the **Reset** option from the drop-down menu.

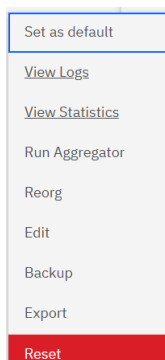


Figure 89. Reset Repository

The following pop-up will appear:

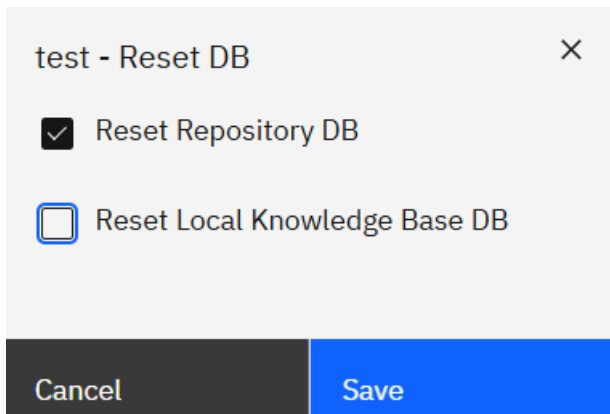


Figure 90. Repository Reset Pop-up

4. Select the appropriate options and then select **Save**.

The results of the repository database reset request is as displayed:

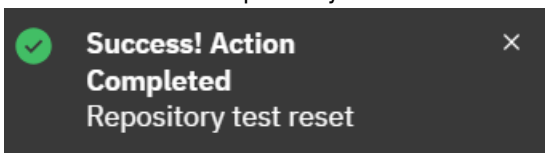


Figure 91. Repository Reset Success Message

The repository is now ready to accept import data.

Edit Repository Description

The IBM Z Software Asset Management admin has the authority to edit any previously created repository description.

Note: It is not possible to edit/rename a repository.

To edit the repositories description:

1. Select the **More Info** menu next to the target repository.
2. Select **Edit** option.

A pop-up window appears containing the original repository description:

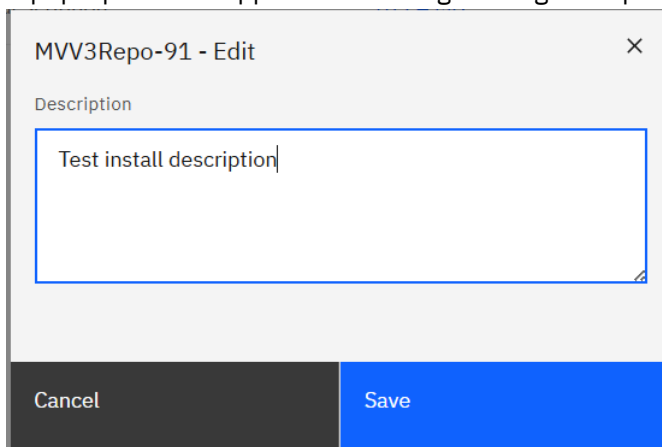


Figure 92. Repository Description Editing Pop-up

3. Make the required changes and select **Save**.

The new description will reflect in the **Repositories** page.

Message Section

In this section, we shall discuss the different types of messages.

Import Processing Messages

Message Number: HSIC083I

Description: GKB schema: tfgkuz of version date: yyyy-mm-dd is out of date. It is more than 3 months old.

Explanation: The current GKB (Global Knowledge Base) installed on your IBM Z Software Asset Management V9.1 environment is now more than 3 months old.

Action: This is a warning and will not impact import execution. It is recommended that you download a GKB update package file from your IBM FixCentral portal and perform the GKB update process using the Admin Tools-> GKB menu option.

Message Number: HSIC035E

Description: The repository is in use by the <application>

Explanation: A previous execution of <application> did not complete successfully. The current processing request is terminated.

Action: Re-run the failed processing request. This issue will have been resolved by the previous executions' exception handler.

Product License Key Messages

Message Number: HSIL001E

Description: ERROR! Invalid or empty DB Schema provided with associated license key

Explanation: An internal error has occurred with processing the provided license key.

Action: Please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL002E

Description: ERROR! Unable to open for read <filename> License key file.

Explanation: The expected filename containing the license key is unavailable for reading.

Action: Please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL003E

Description: ERROR! Unsupported or unknown license key has been provided

Explanation: Validation of the provided license key has failed.

Action: Please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL004E

Description: ERROR! Unable to allocate SQL ODBC Environment Handle. Rc=??

Explanation: Allocation of the ODBC Environment handle control block has failed.

Action: Ensure there is sufficient available RAM and/or Swap space for the number of import containers required to run. Alternatively, contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL005E

Description: ERROR! Unable to allocate SQL ODBC Connection Handle. Rc=??

Explanation: Allocation of the ODBC DB connection handle control block has failed.

Action: Ensure there is sufficient available RAM and/or Swap space for the number of import containers required to run. Alternatively, contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL006E

Description: ERROR! DB Connection failed with retcode ??

Explanation: The connection request to the installed GKB database has failed with the shown return code.

Action: Ensure sufficient RAM and/or free swap space is available to run more import container instances. Alternatively, contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL007E

Description: ERROR! Unable to allocate SQL ODBC statement handle for DB. Rc=??

Explanation: An attempt to allocate the ODBC statement handle control block has failed with the shown return code.

Action: Ensure sufficient RAM and/or free swap space is available to run more import container instances. Alternatively, contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL010S

Description: License Key DB processing failed to complete successfully

Explanation: License Key decryption processing has failed due to previous errors.

Action: Review any previous error messages. Contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL011E

Description: ERROR! Invalid length detected. Invalid License Key provided

Explanation: The provided license key is an invalid or unsupported length.

Action: Ensure you have cut/pasted/copied the complete license key data string provided to you. If problems continue, please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL012E

Description: ERROR! Unable to decrypt license key provided. Rc=<rc>

Explanation: The provided license key has failed the decryption process.

Action: Please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL013S

Description: License Key decryption processing failed to complete successfully

Explanation: The provided license key has failed decryption validation and processing.

Action: See previous messages for further details. Please contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL022S

Description: License key validation failed.

Explanation: The provided license key has failed validation. Review previous messages for further details.

Action: Contact IBM Z Software Asset Management technical support for assistance.

Message Number: HSIL024E

Description: ERROR! License key does not provide authorization for execution of <product> version V<version> (<current version>)

Explanation: The license key provided has been generated for <product> <version>. Yet the product version being executed is <current version>.

Action: The license key is not activated. Contact your IBM Z Software Asset Management Technical Support for assistance.

Message Number: HSIL025E

Description: ERROR! Product version information missing from license key.

Explanation: The license key provided does not contain the expected product version information. Ensure the complete license key string has been entered.

Action: The license key is not activated. Contact your IBM Z Software Asset Management Technical Support for assistance.

Message Number: HSIL028E

Description: A License Key Verification Error has occurred. Response Code = <rc>

Explanation: The provided license key has failed verification processing against the installation host system.

Action: The license key is not activated. Contact your IBM Z Software Asset Management Technical Support for assistance

Repository Actions by Administrator

In this section, we shall look at the repository actions that can be performed only by the administrator.

Backup - Administrator Only

An Administrator can perform backup functions on any available repository:

1. Select either from the administrator menu option **Backup/Restore** or from the **Actions** menu available on each repository from the Repositories List page.
2. Select **Backup** from the repository actions menu.
The repository gets selected based upon the selected action menu repository name.
3. Continue from **Backup Storage Media**.
4. If you selected **Backup/Restore** from the navigation menu, when you click on the **Backup** button, a pop-up displays with three selection options as depicted in the following image.

Note: Firstly, you need to choose the repository that you wish to back-up.

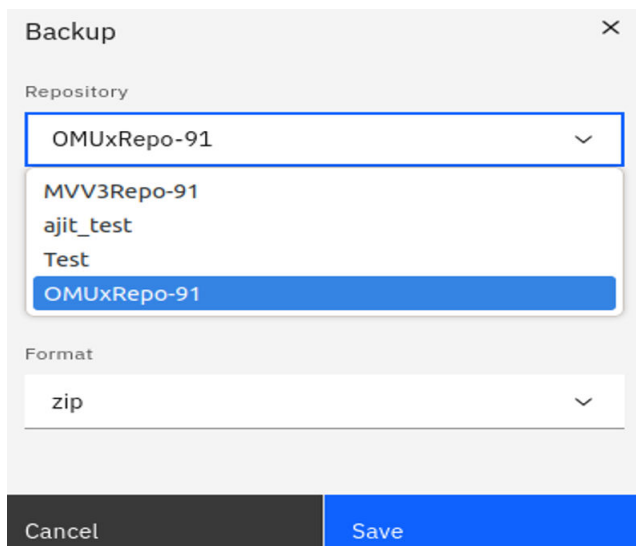


Figure 93. Repository Backup Selection

Backup Storage Media

You need to select a backup storage media . By default, the docker volume **DASD_BACKUP** is available for use. This is a local DASD-based docker volume (docker volume name: zswam_backup-91-IBM) created during the installation process. If you have configured external backup storage media locations, you can select one of the available locations that is configured. Any external backup storage media that has not been configured or is not available will not be selectable.

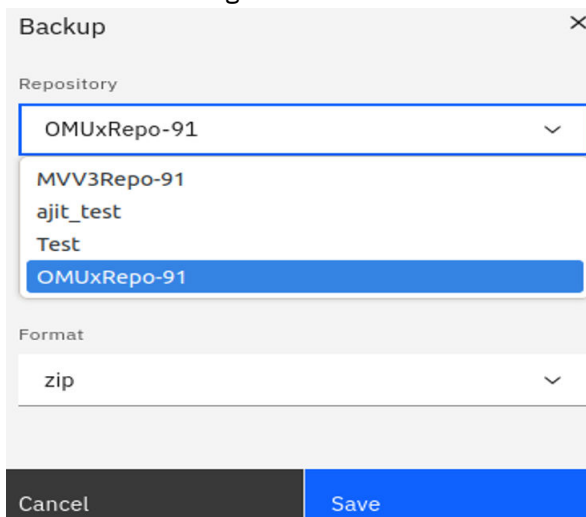


Figure 94. Repository Backup Target Storage Medium Selection

Backup Compression Method

Finally, select the compression method that is required. The default is **zip** and will be the fastest option but may not offer the best disk space utilization.

1. If you wish to have better compression at the expense of CPU/execution time, then select **bzip2** from the drop-down menu:

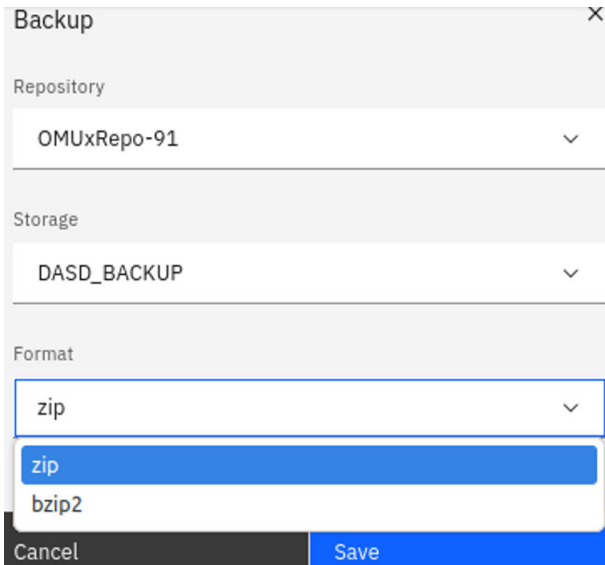


Figure 95. Repo Backup Compression Method Selection

2. Select **Save**.

The backup process starts.

A new entry in the backup history display is added at the top.

3. You can select the highlighted **ID** number for your backup to monitor the docker log progress displayed as follows:

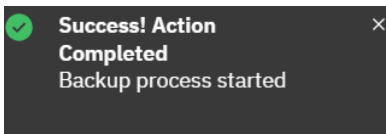


Figure 96. Backup Progress Page

4. Use the **Actions** menu to manage the backup history and viewing of the logs.

The **Restore** action is enabled once the backup process is completed successfully and if the backup-media used is still available.

Export - Administrator Only

An Admin can perform export functions on any available repository. Export differs from a backup by performing a database **dump** in SQL allowing for importation into other SQL-compliant external databases or products. This media format is **not supported** for restore processing.

As exports are intended for external use only, it is recommended the backup media selected be one of the configured externally available mediums STORAGE1 or STORAGE2.

1. From the **Backup/Restore** menu page select the **Export** tab.

A pop-up appears:

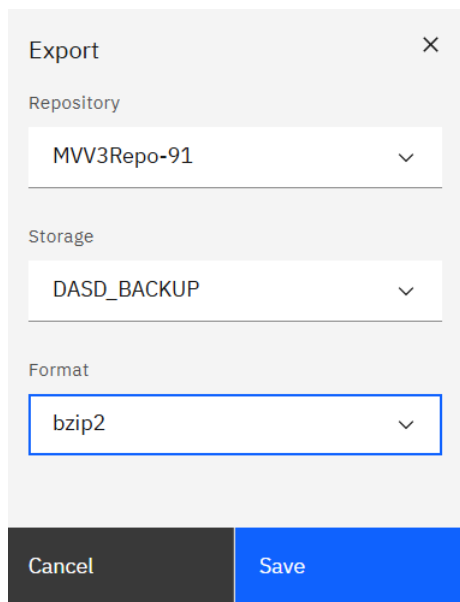


Figure 97. New Export

2. Select your desired repository under the **Repository** drop-down menu.
3. Select the export storage media to use under the **Storage** drop-down menu.

Note: By default DASD_BACKUP docker volume is available for use though for export processing it is recommended to have configured external storage media locations (Storage1 and/or Storage2) and to select one of those. Any external backup storage media that is not configured or available will not be enabled.

4. Select the compression method required under the **Format** drop-down menu.

The default is **zip** and will be the fastest option but may not offer the best disk space utilization. If you wish to have better compression at the expense of CPU/execution time, select **bzip2** from the drop-down menu.

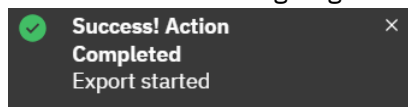
5. Select **Save**.

The exported is now initiated.

6. If you start the export from the repositories **Action** menu, the repositories page gets updated and it shows that the selected repository is in use.
7. Select the **i** icon next to the repository being exported to view the export progress as below.
8. If you select the export process from the **Backup/Restore** administrator menu, you are directed to the export progress page.

A new entry in the export history display will be added at the top.

9. You can click on the high-lighted **ID** number for your export to monitor the progress as displayed:



The **Actions** menu allows for management of the export history and log viewing.

Figure 98. Export History Page

10. Using the Files tab, you can download an export created file from the selected backup medium.
11. Navigating to your desired export file.
12. Select the file name.

The export file will be downloaded through your browser.

Note: If you used externally configured data storage, the export file(s) are also available directly on the host system at the configured location.

Note: To see more details and information on performing a repository backup, export and restore, please refer to **Login as Admin** section of this manual.

Backup/Restore Files Tab – Administrator Only

To view the available files in each of the configured storage areas:

1. Navigate to **Homepage > Backup/Restore**.

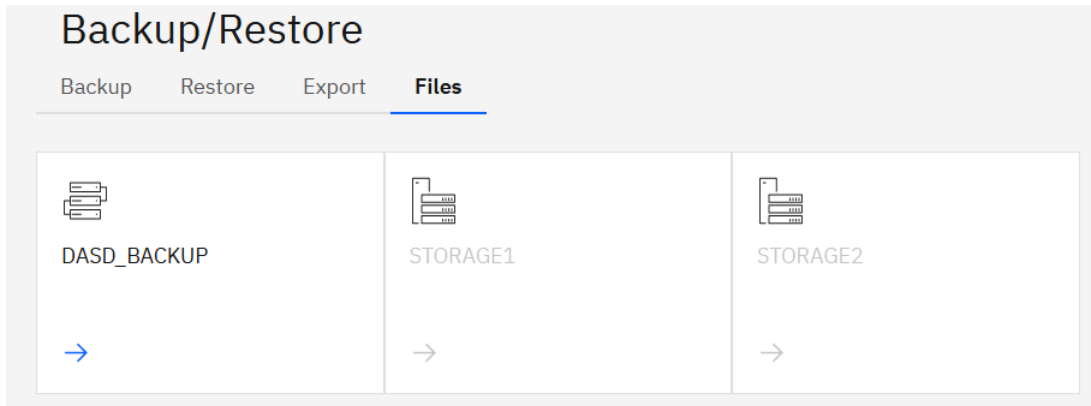


Figure 99. Backup/Restore Files Tab

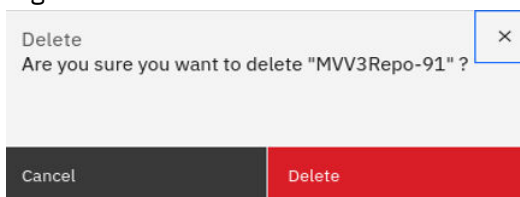
2. Select the **Files** tab.
3. Select the appropriate storage device to view.

Note: When you are viewing a backup storage device for the first time, it may take some time to complete while verification of the files found are valid backup media files.

Delete Repository – Administrator Only

To delete a repository:

1. Navigate to the **Repositories** page, select the repository that you wish to delete.
2. Right-click on the three dots icon under the **More Info** column, select the **Delete** option.



The selected repository database and any associated LKB database and all log files will be deleted and the repository name will be removed from the list.

Figure 100. Delete Repository Database

Note: The current **default** repository cannot be deleted. This option will be disabled if it is attempted. Change your default repository if needed.

Note: This action will result in permanent repository data loss. This action can only be reversed if there is an available repository backup to restore from.

Reset Repository – Administrator Only

To reset a repository, i.e, initialize or reset it for data loading:

1. Navigate to the **Repositories** page, identify the repository that you wish to reset.

2. Right-click on the three dots icon under the **More Info** column, select the **Reset** option.

A confirmation pop-up with options is displayed wherein you can also reset any associated LKB database contents.

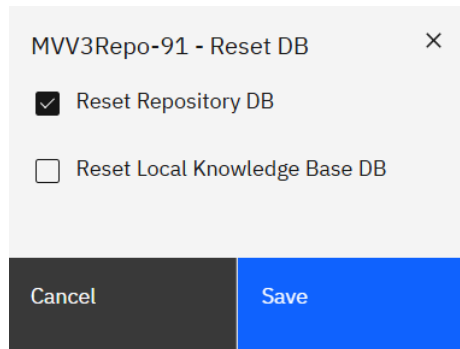


Figure 101. Repository Database Reset

3. Select the options desired and select **Save**.

The repository database and all its logs will be deleted. An empty repository database will then be created.

Note: This action will result in permanent repository data loss. It can only be reversed if a valid backup of the repository is available for restore.

Notices

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