motadata

Backup/Restore/Archival SOP

Motadata NMS

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1. Introduction

This document describes the complete process of taking Backup, Restoring Backup as well as Archival of Report and Configuration Database
We divided the process in below parts:

- BACKUP
- RESTORE
- ARCHIVAL
- ARCHIVAL RESTORATION

2. Backup

a. Prerequisites of Report and Config Backup

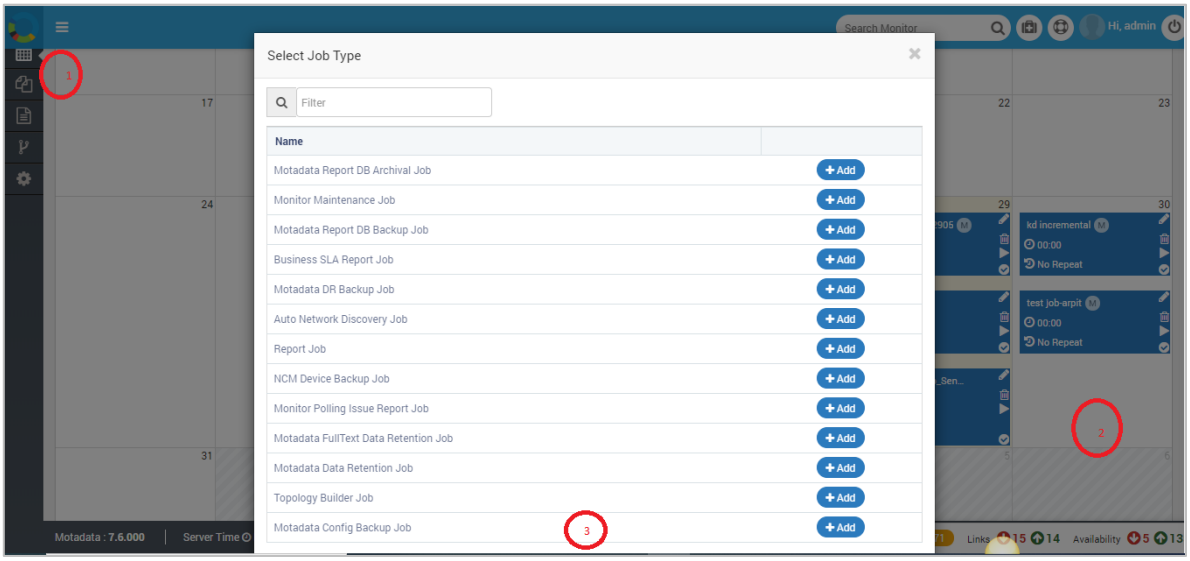
- Motadata should be up and running.
- FTP should be accessible via Motadata.
- Report DB Backup Job Plugin version 1.3 should be installed
- Config Backup Scheduler Job Plugin version 3.4 should be installed
- Go to first level Motadata directory on the server where Click-house is installed. If clickhouse-store.zip and clickhouse-store are already present then delete them.
- Download the new clickhouse-store utility from the deliverables
- Clickhouse-Store.zip should be placed in the first level motadata directory and Unzip it.

b. Config DB Backup

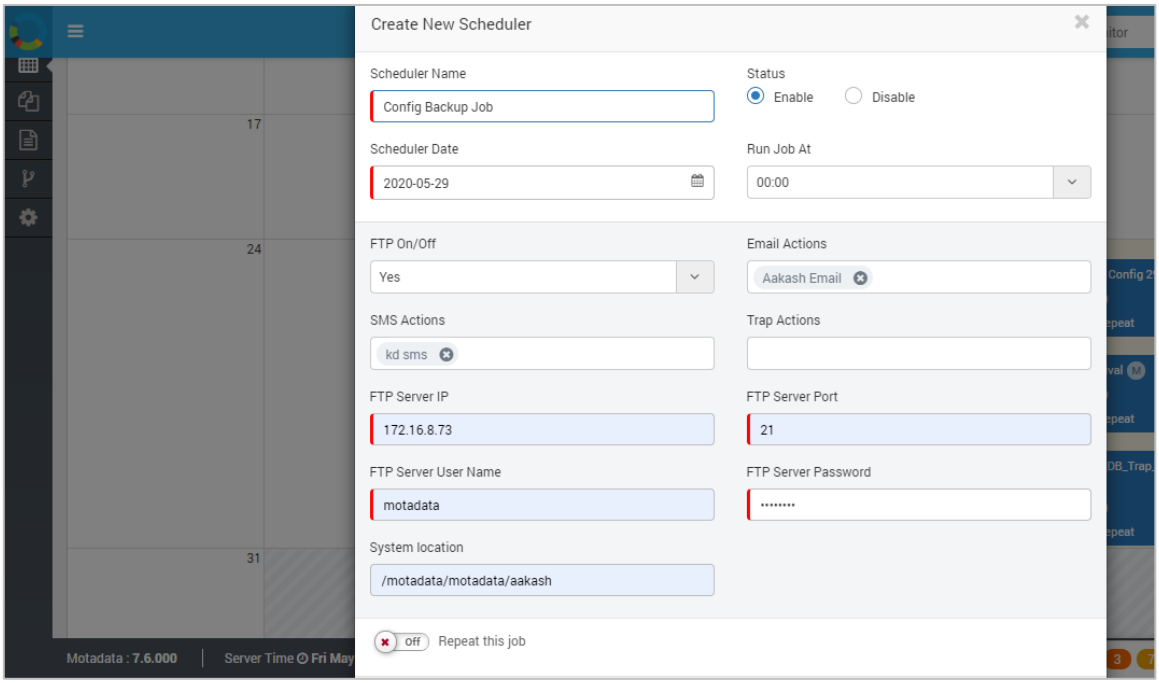
Step 1: Go to Schedulers and select the current or future desired date for backup job.

Step 2: In drop-down menu, select 'Motadata Config Backup Job' and click Add.

Step 3: Fill up the fields for Scheduling the backup. Here, take a local backup, leave the FTP fields blank or to take backup on FTP server, fill up all the details.



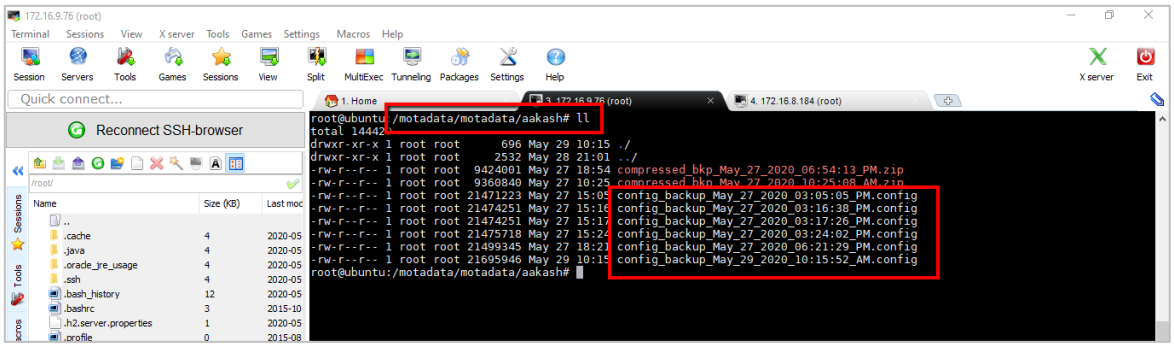
Step 4: Click on Create once done.



In case of Local Backup

Motadata takes the backup in /motadata/motadata/aakash folder.

File name: config_backup_.config (e.g. config_backup_Aug_07_2019_07:03:01_PM.config)

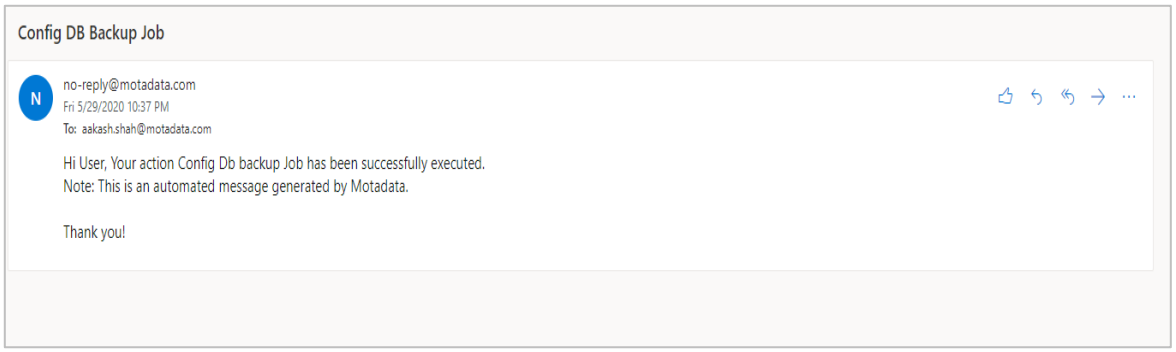


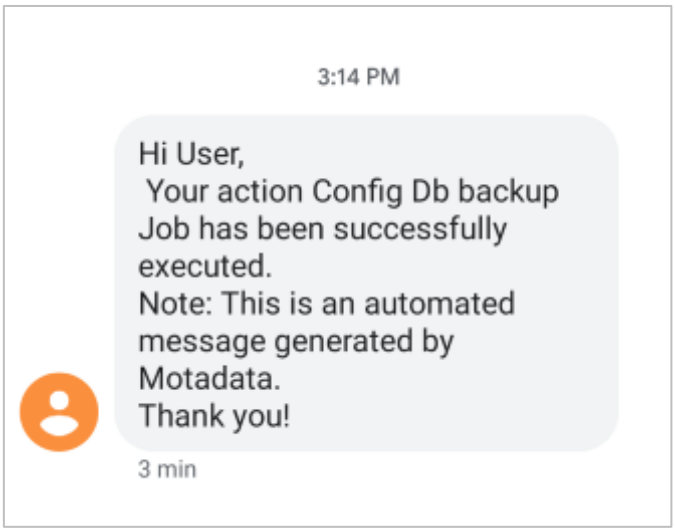
In case of FTP Backup

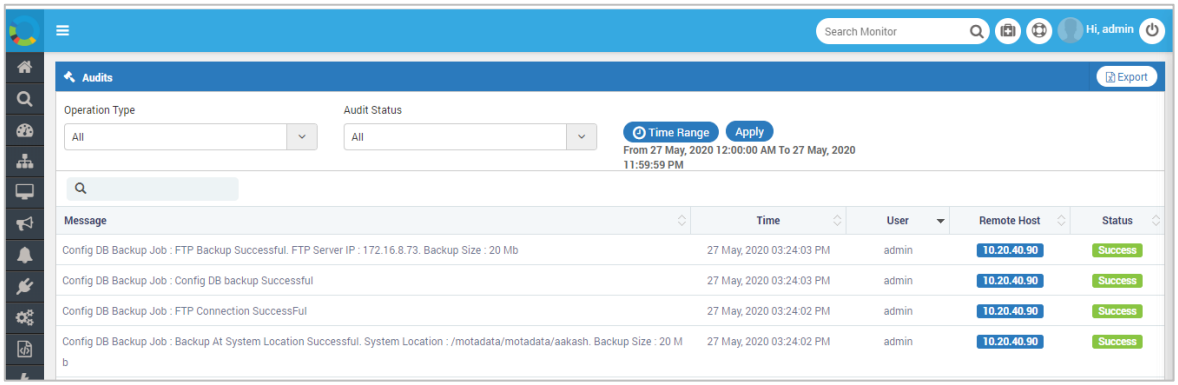
- Motadata uses the local backup and transfers it to remote server using FTP. This is an automatic process.
- SMS Action: SMS action can also be set, so notification will be sent via SMS

i. Result

Results can be validated using two ways, Email & SMS Notifications or audit Logs as shown below:





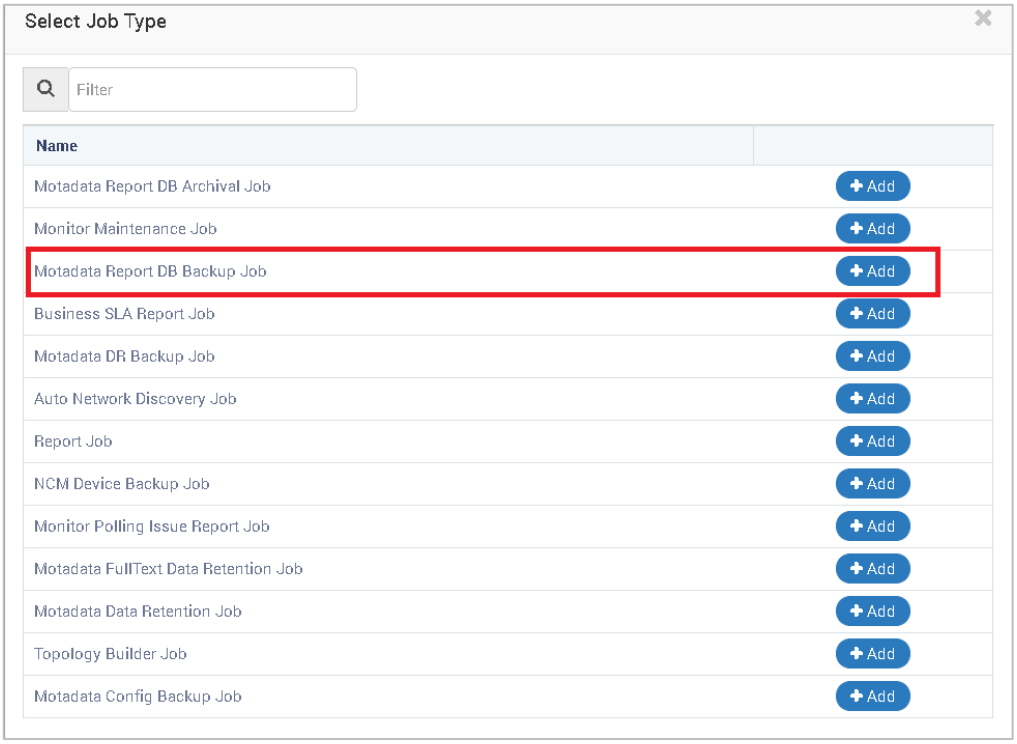


c. Report DB backup

Step 1: Login to Motadata GUI and go to Schedulers.

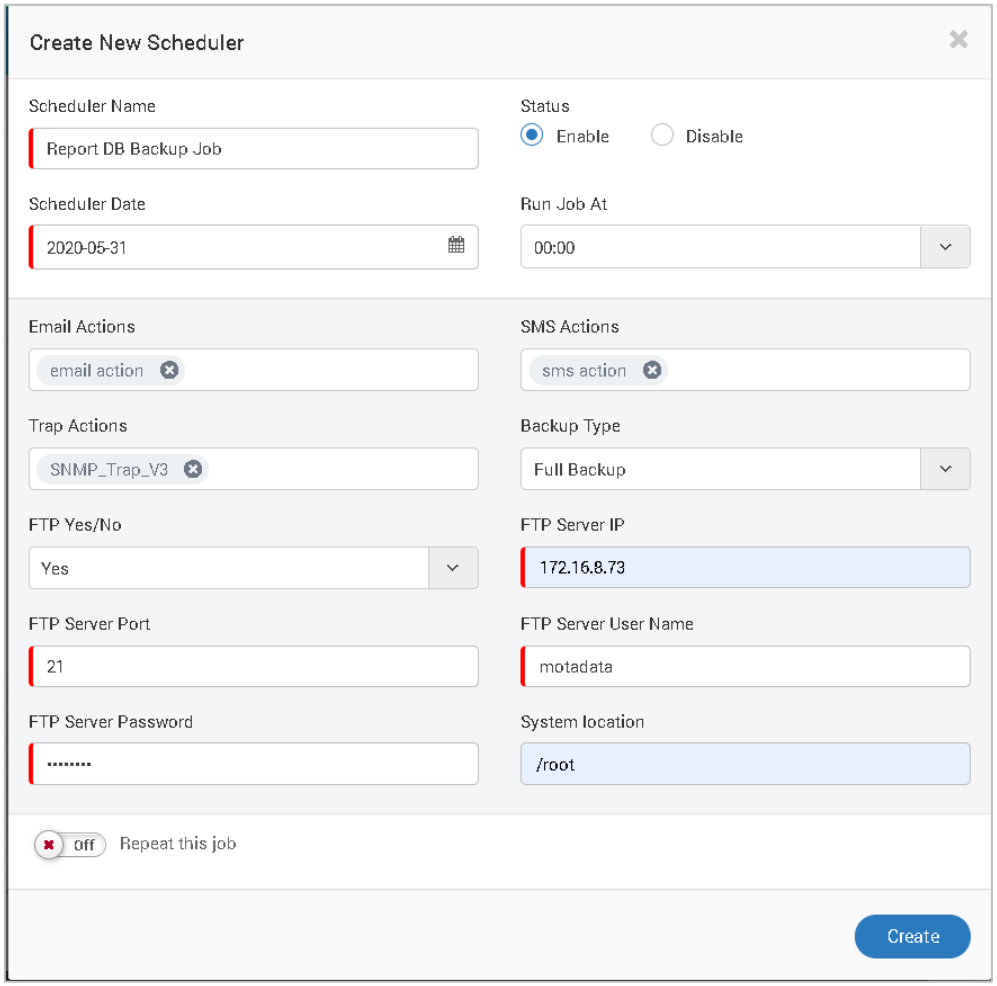
Step 2: Click on current date or a future date.

Step 3: Create a new Motadata Report DB Backup Job.



Note: In the whole application, there can only be one scheduler configured for incremental and full type of backup each. More than one scheduler of taking full backup is not allowed. Similar is for Incremental Backup as well.

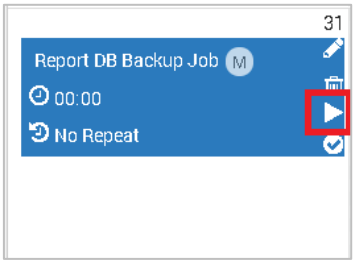
Step 4: Make the necessary configurations as shown below:



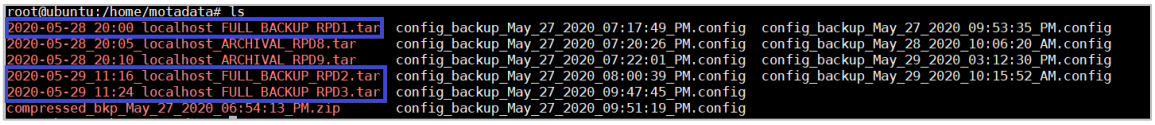
(FTP Configurations)

- **FTP On/Off**: Configure it ON if user wants to transfer the backup to remote location via FTP protocol. If configure YES, then add the port number, username and password of the FTP server
- **System Location**: Mention the desired path where user wants to store the backup on the server, where report DB is installed.
- **Email Action, SMS Action, and Trap Action**: Configure this action as created in the action module. Email and SMS Actions are mandatory.
- **Backup Type**: This decides the duration for which user wants to take the backup.

Step 5: Once the job is created you can run the job.



Step 6: Once backup is taken it will be stored on configured system location and FTP location.



ii. Incremental Backup

a) If backup repeated daily from the day after last backup till previous day is counted and stored.

For example,
Scheduled backup is done on 1st May, 2020
Last successful backup is done on 7th March, 2020
So, the Current duration for backup will be from 8th March' 2020 to 30th April' 2020

b) If backup repeated monthly from the month after last backup till previous month is counted and stored.

For example,
Scheduled backup is taken on 1st May, 2020
Last successful backup is taken on till January, 2020
So, the Current duration for backup will be from February, 2020 to April, 2020

Note: If the tables are monthly partitioned or mixed partitioned then the backup configured to repeat daily will fail to stop backup of same data every day.
Similarly, if the tables are daily partitioned then the backup configured to repeat monthly will fail to stop backup of same data every month.

iii. Full Backup

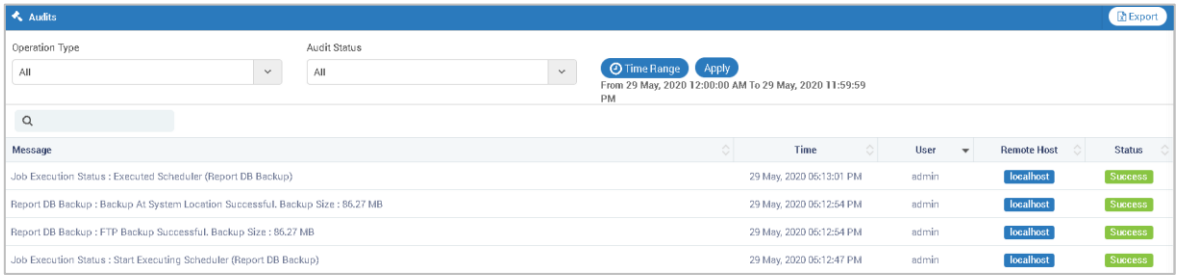
This backup type can only be repeated monthly. Here, the whole backup of the active partitions till latest date and time will be taken. There are no constraints on the duration.

iv. Result

Once the backup job has run, there are various way to check the status of the job and the taken backup. These ways are applicable for both full and incremental backup type. They are:

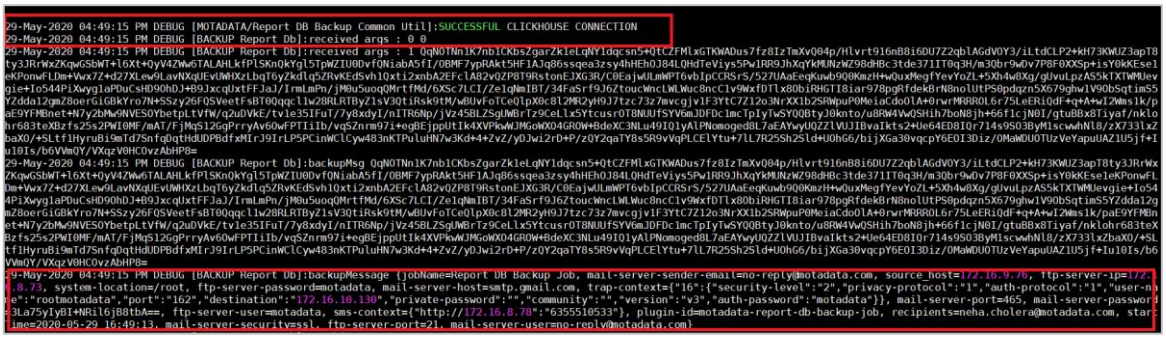
1. **Audit logs**

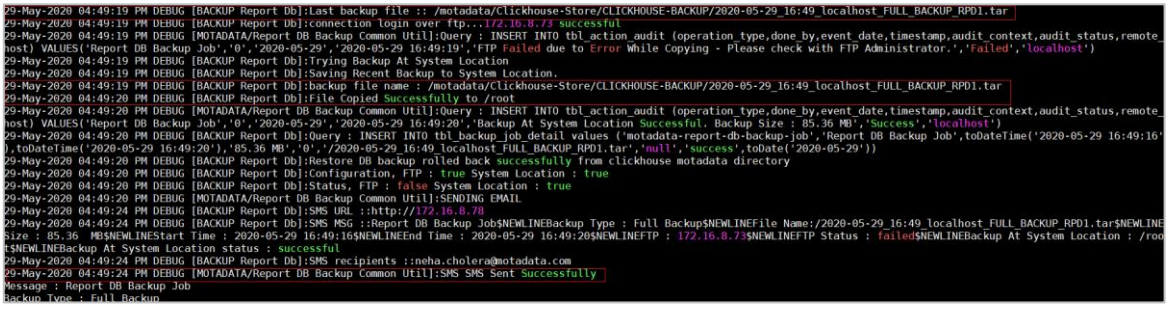
   Audit log displays the status of the backup at system location and FTP server both with details.



2. **Backup Restore logs**

   - On the server where clickhouse is installed, navigate to following path
     /motadata/Clickhouse-Store/Report-Backup-Restore-log/
   - Here check the Report-Backup-Restore-DEBUG.log showing the the starting and ending of the backup job execution as highlighted below:

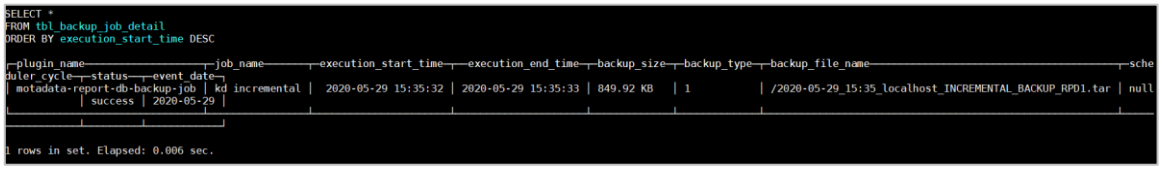




Note: To check if Email and SMS notifications are successfully sent, refer Report-Backup-Restore-NOTIFICATION.log

3. Clickhouse table 'tbl_backup_job_detail'

- This table contains the backup of the last successful backup for incremental type of backup only



```
SELECT *
FROM tbl_backup_job_detail
ORDER BY execution_start_time DESC

┌─plugin_name─────────────────┬─job_name──────┬─execution_start_time─┬─execution_end_time─┬─backup_size─┬─backup_type─┬─backup_file_name──────────────────────────────────────┬─sche
duler_cycle─┬─status──┬─event_date─┐
| motadata-report-db-backup-job | kd incremental |  2020-05-29 15:35:32 | 2020-05-29 15:35:33 | 849.92 KB   | 1           | /2020-05-29_15:35_localhost_INCREMENTAL_BACKUP_RPD1.tar | null
            | success | 2020-05-29 |
└─────────────────────────────┴───────────────┴──────────────────────┴────────────────────┴─────────────┴─────────────┴───────────────────────────────────────────────────────┴─────
────────────┴─────────┴────────────┘

1 rows in set. Elapsed: 0.006 sec.
```

4. Email Notification in case of successful backup

no-reply@motadata.com
Fri 5/29/2020 5:12 PM
To: neha.cholera@motadata.com

Hi User,
Please find the status report of the scheduler action executed in Motadata.
Job Name: "Report DB Backup"
Job Type: Full Backup of Report Db
File Name : /2020-05-29_17:12_localhost_FULL_BACKUP_RPD9.tar
Backup Time Range : 2020-05-29 to 2020-05-29
Backup Status: "SuccessFul"

Backup started at : 2020-05-29 17:12:49
Job Completion timestamp: 2020-05-29 17:12:54
FTP IP: 172.16.8.73
Backup File transfer to FTP status : "successful"
Backup File Size : 86.27 MB

System Location: /root
Backup File transfer to System location status : "successful"
Backup File Size : 86.27 MB

Note: This is an automated message generated by Motadata.Please do not reply to this email. For any queries, reach out to your Motadata administrator.

Thank you!

3. Restore

a. Prerequisites of Report and Config Restore

- If lsof package is not installed we need to manually install it. Download the package from: https://motadata2016.s3.amazonaws.com/Motadata/7.6.000/Deliverables/Deliverables.zip
- https://motadata2016.s3.ap-south-1.amazonaws.com/Motadata/7.6.200/Deliverables/Deliverables.zip
- Download using the above link and Unzip it (Deliverable.zip)
- After Extraction, take the respective package from the folder where, packages for both operating system will be available as mentioned:
  i. Ubuntu
  ii. RHEL 7.7
- Place the required package at /opt on your server

- Go to /opt and run the below command for Ubuntu:
  dpkg -i lsof_4.89+dfsg-0.1_amd64.deb

- Go to /opt and run the below command for RHEL:
  rpm -i lsof-4.87-6.el7.x86_64.rpm

- Search for Clickhouse-Store.zip and Clickhouse-Store in first level of motadata folder. If it is available, delete the files using the below commands:

  rm Clickhouse-Store.zip
  rm –r Clickhouse-Store
- Download the new utility from deliverables
- Upload the zip file in first level motadata folder.
  - In standalone server, upload the utility in master server.
  - In distributed mode server, upload the utility in data node server. No need to upload file in master server
- Unzip Clickhouse-Store.zip
- Download the files ConfigDBRestoreScript.sh and motadata-config-db-restore-utility-1.0.jar from deliverables
- Create actions in motadata GUI with prefix CONFIG_RESTORE_EMAIL1/2/3/4 and CONFIG_RESTORE_SMS1/2/3/4 for receiving email and SMS notifications respectively.
- Take a configuration database backup which will be used for restoration. (**Skip this if a previous backup file is available**)

Step 1: Create a new folder with name 'configdbrestoration' at path **/motadata/motadata** in the motadata server.

Step 2: Place the downloaded files ConfigDBRestoreScript.sh and motadata-config-db-restore-utility-1.0.jar in this folder.
Also place the configuration backup file in this folder that needs to be restored.

b. Config DB Restoration

Step 1: Check in the 'configdbrestoration' folder for the below two necessary files
- Motadata-config-db-restore-utility-1.0.jar
- Backup file in .config format

If the configdbrestoration folder does not exist, create it, and place the above files in it.

Step 2: Place the file ConfigDBRestoreScript.sh in the second level of motadata as shown below:

/motadata/motadata

Step 2: Stop motadata service by running the below command
service motadata stop

Step 3: Go to **/motadata/motadata/configdbrestoration** folder.

Step 4: Run the below command
./ConfigDBRestoration.sh
The configuration DB will be restored.

Step 4: Restart the motadata service by running the below command
Service motadata start
These complete steps will help to restore configuration database for motadata server.

i. Result

Backup can be successfully validated using the Logs as below:

c. Report DB Restore

Step 1: Make sure the CLICKHOUSE-RESTORE folder is available in motadata/Clickhouse-Store. If not, create a new folder named as 'CLICKHOUSE-RESTORE'

Step 2: Place the ReportDBBackupRestoration.sh file in the path /motadata/motadata

Step 3: Copy the desired backup file into CLICKHOUSE-RESTORE. Please check that the below files are present in the Clickhouse-Store.
Also, put these files in Clickhouse-Store and give permission to the below 2 files using the below command:

For example: chmod 775 motadata-conf.yml

- TraceOrgReportDBRestoreConfigUtility-1.0
- motadata-conf.yml

The motadata-conf.yml file will have the below details:
For example:

- host: '172.16.8.73'

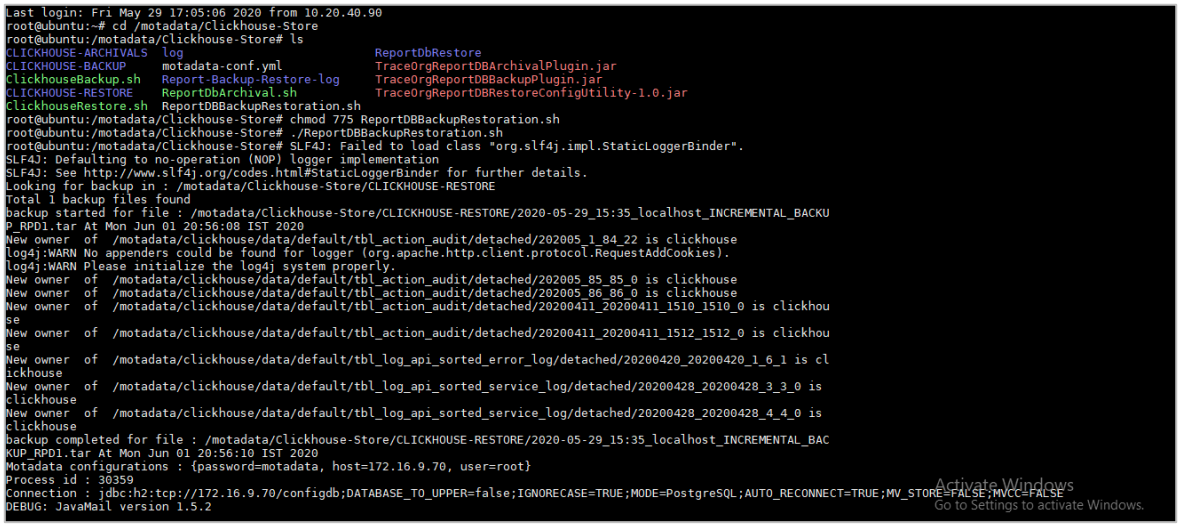
- user: 'root'
- password: 'motadata'

Note: Here, host refers to config db host.

Step 4: Mail / sms will get triggered if its prefix is RPD_BKP_EMAIL1/2/3/4 or RPD_BKP_SMS1/2/3/4

Step 5: For restoration, just take ssh of the desired server and run the below script after navigating to the path /motadata/motadata: motadata/motadata# ./ReportDBBackupRestoration.sh

d. Result



4. Report DB Archival

The document helps user to restore the Report DB Backup.

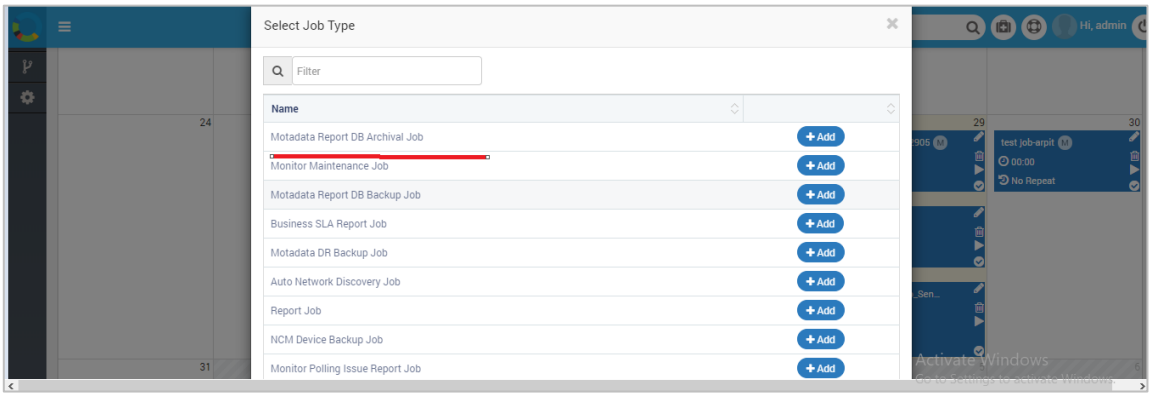
a. Prerequisites

1. Search for Clickhouse-Store.zip and Clickhouse-Store in first level of motadata folder. If it is available, delete the files using the below commands

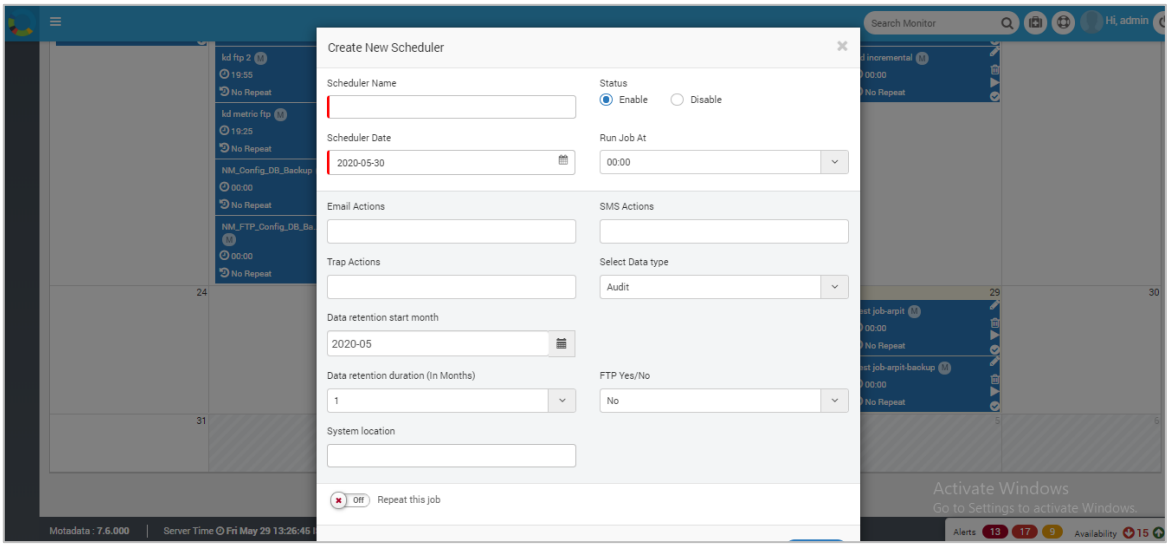
   rm Clickhouse-Store.zip
   rm –r Clickhouse-Store
2. Download the new utility from the deliverables
3. Upload the zip file in first level motadata folder.
   - In standalone server, upload the utility in master server.
   - In distributed mode server, upload the utility in data node server. No need to upload file in master server
4. Unzip Clickhouse-Store.zip
5. Motadata Report DB Archival Job plugin should be present
6. Edit Feature will not work here, so new job needs to be created every time.
7. Report DB Archival Job Plugin.

b. Report DB Archival

Step 1: Login to Motadata GUI and go to Schedulers.
Step 2: Click on the desired current date or a future date
Step 3: Select Motadata Report DB Archival Job.

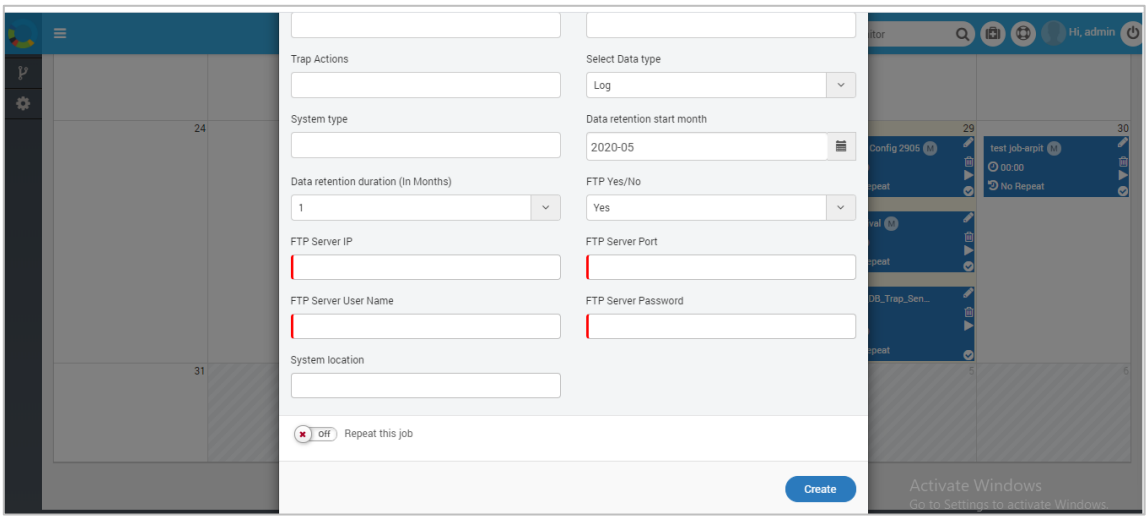


Step 4: Click on Add which will open the screen with the below shown fields:

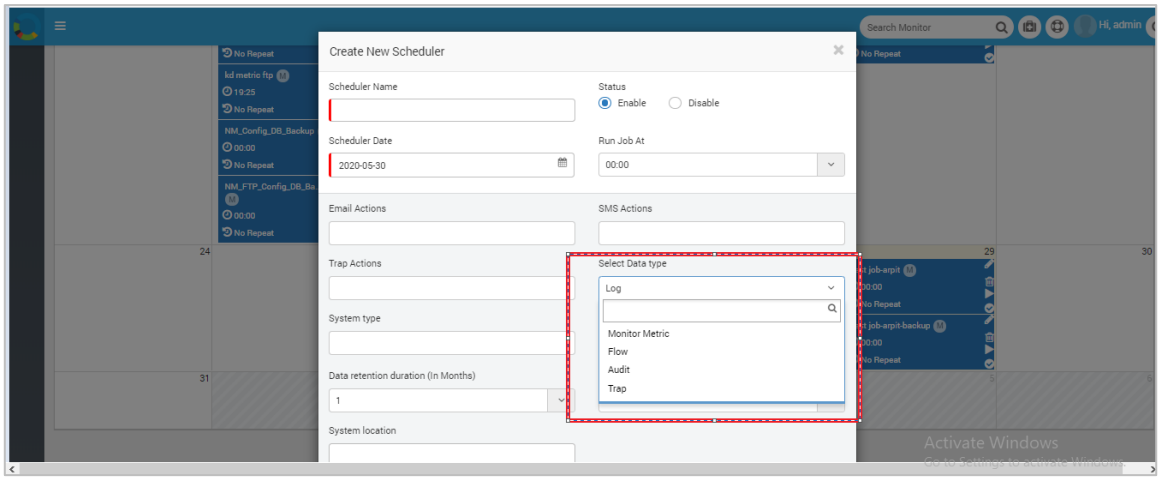


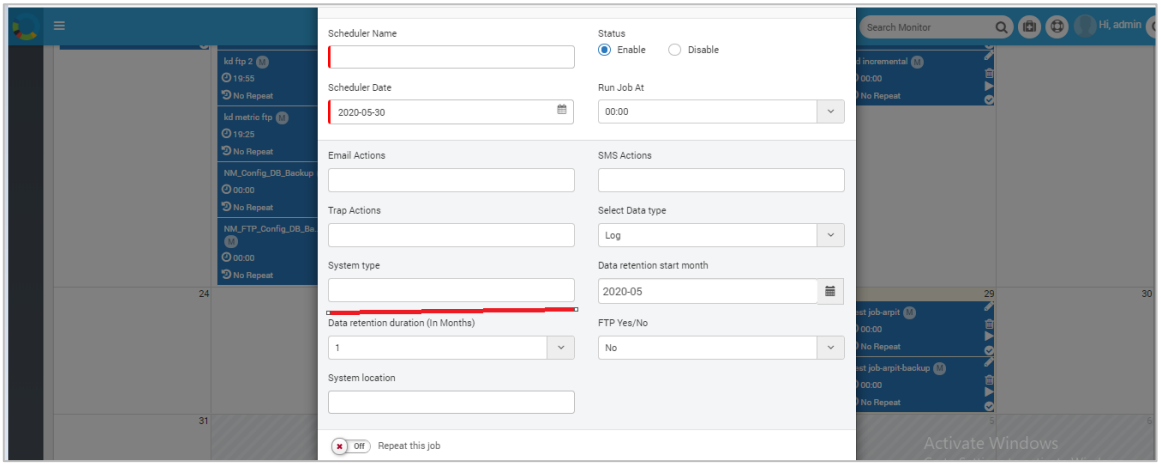
Step 5: For taking the backup locally select FTP = No.

Step 6: To take backup on FTP server, fill all the details as shown below:

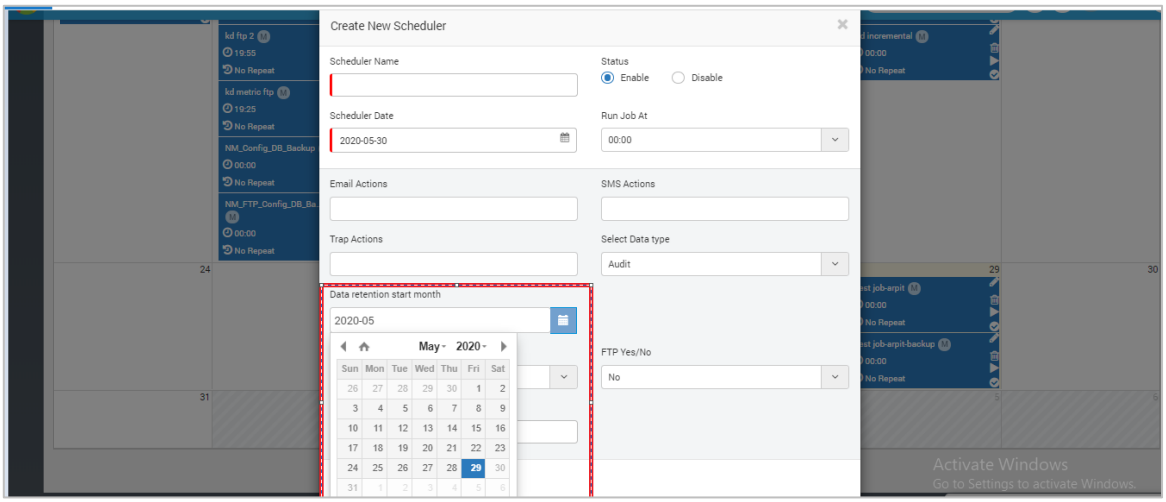


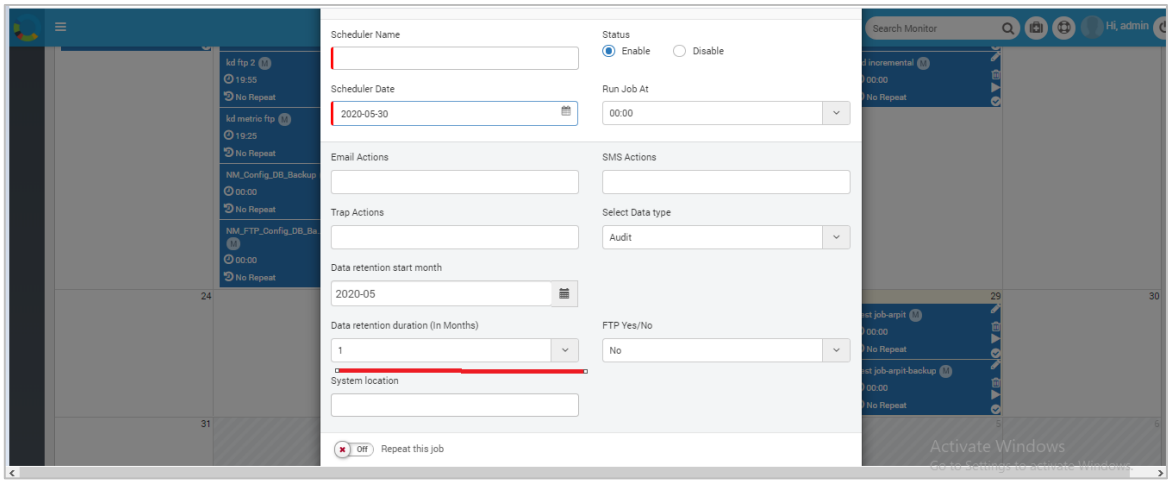
- There are 2 data types which are type wise where we need to select the system type.
  - Log (Type Wise)
  - Flow (Type Wise)
- Here, Monitor Metric, Audit and Trap does not have Specific system types





Step 7: Select System Retention start month from the date from which you want to take archival.



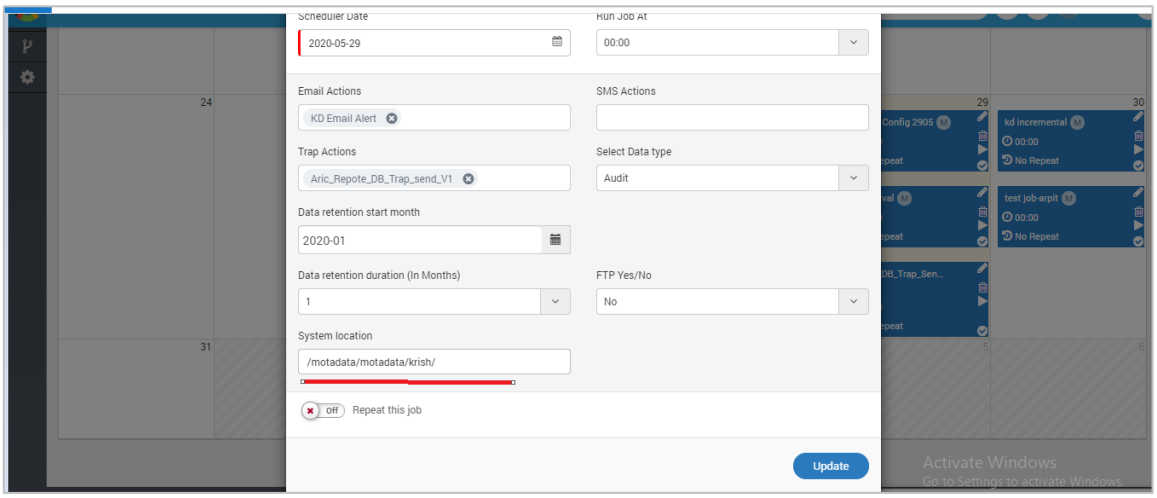


Step 8: Select retention duration: It will deduct the month from the current date. For example,

If start date is 1st of Jan 2020 and retention is 1

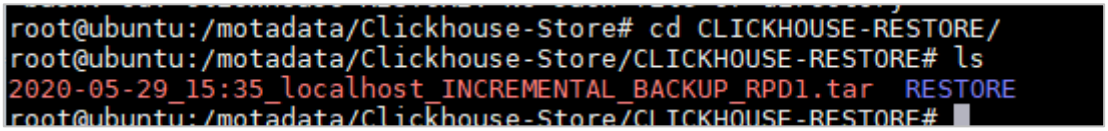
Then, it will take archival from Jan to (Current date -1 Month)

Step 9: Give the system location where archival file is to be saved

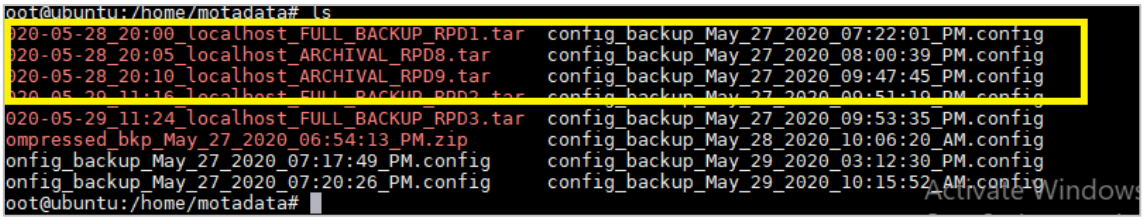


Step 10: Run the job for immediate archival otherwise, the job will run at its scheduled time.

- It will be saved in the below location in case of local:



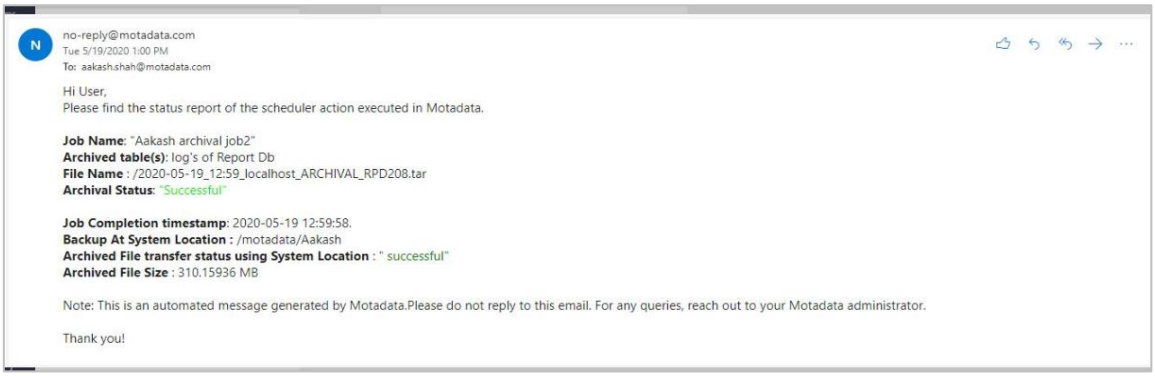
- If FTP was selected, it will get saved in the **home/motadata** directory of the FTP server by default:

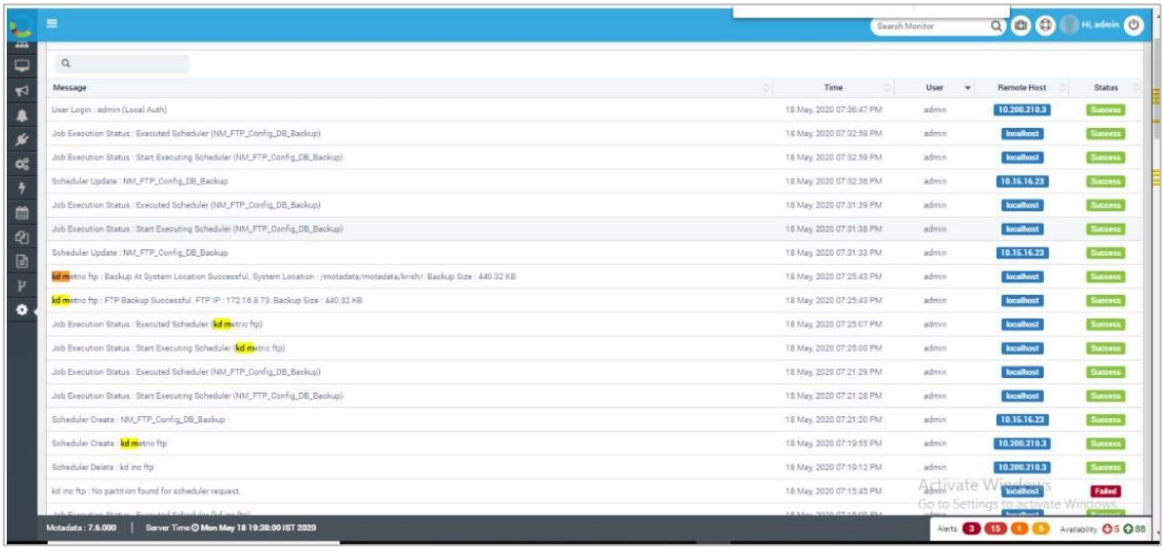


- Email and SMS actions can be set to receive notification

c. Result

After successful archival, mail notification and logs will be seen as below:





5. Archival Restoration

a. Pre-requisite

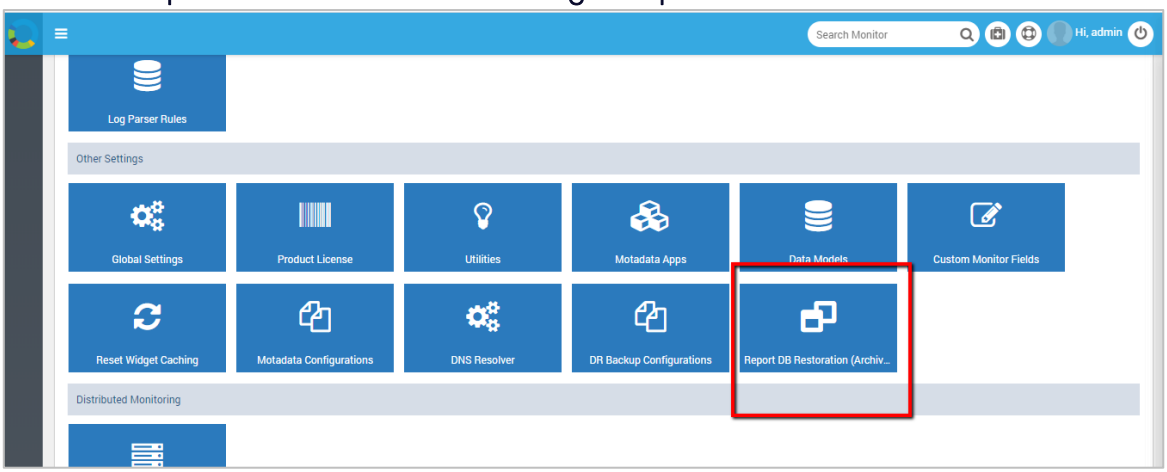
- ReportDBArchivalRestoration.sh restore-report-db-archival-1.0.jar must be there in Click-house Store Folder.
- Give Permission to both files by using below commands respectively:

  chmod 777 ReportDBArchivalRestoration.sh
  chmod 777 restore-report-db-archival-1.0.jar
- Archival Job must be running for which, the data restoration has to be done.

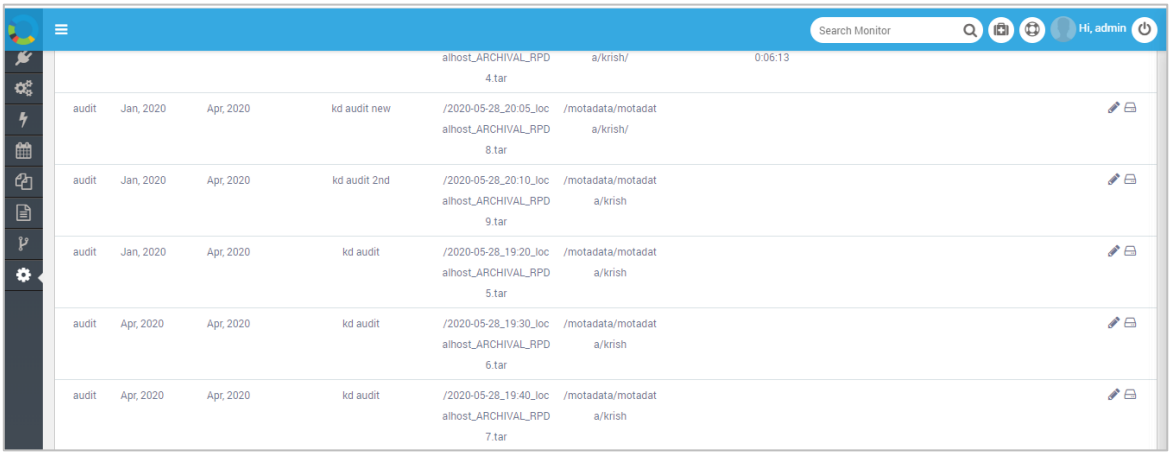
b. Steps for the Restoration

Step 1: Login in to Motadata

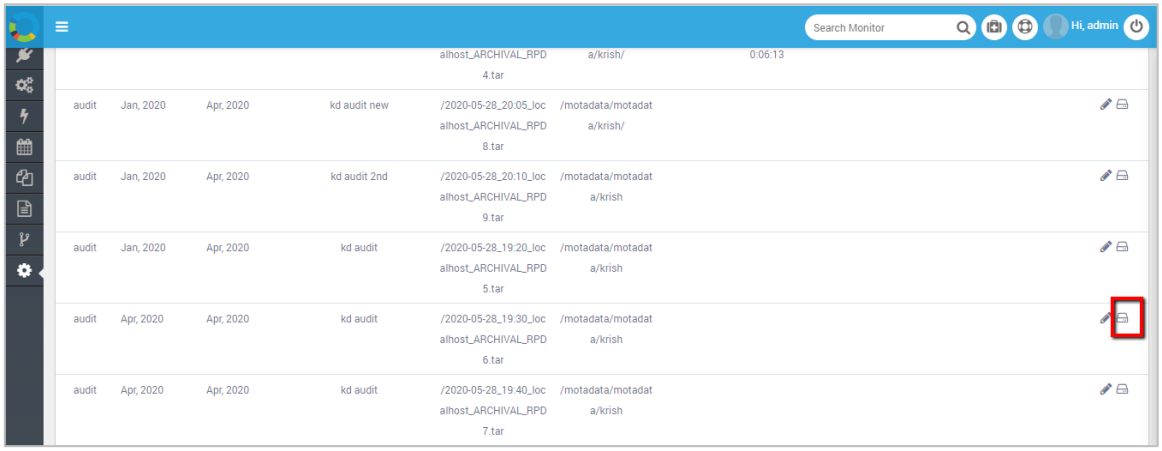
Step 2: Go to **Admin > Other Settings > Report DB Restoration** as shown below:



- It will show the list of restored logs

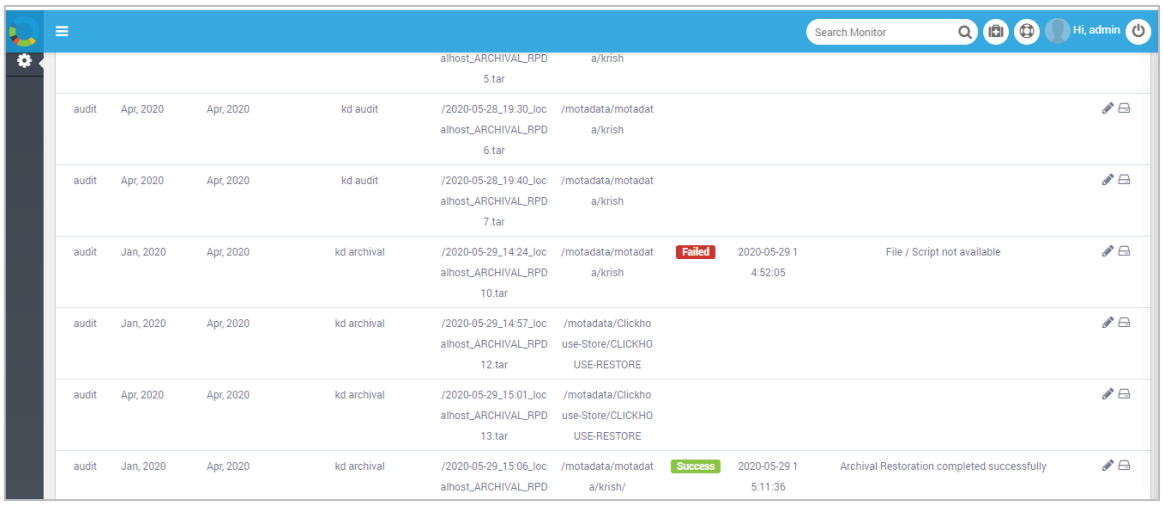


- Click on the Restore button as shown below.



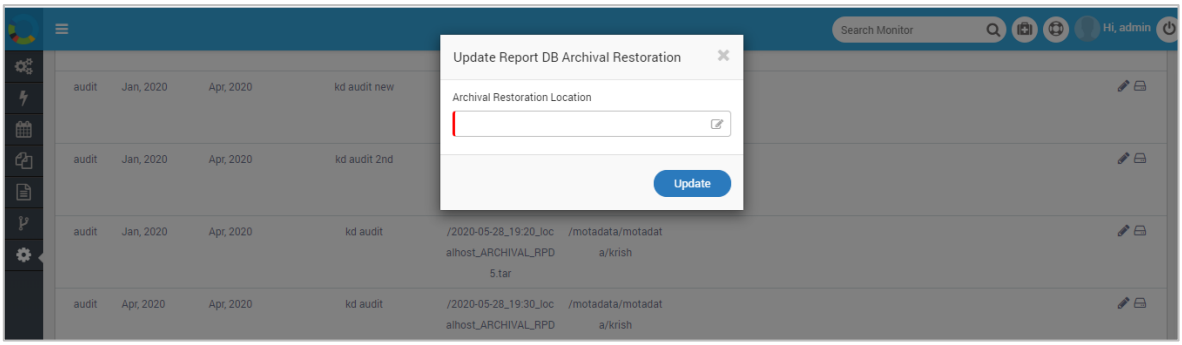
- Once the file is restored, there will be two scenarios, either the data will be restored or will fail.

(Reasons for failure can be multiple scenarios like file not available or Data Discrepancy as shown in below)



- If the back-up is stored at FTP location, a back-up of it should be taken at the specified location and that location needs to be updated as shown below:

- Now, update the location where the copied back-up is stored as shown below:



- Now, update the new location and do a restore.
- Once you restore the data, then data will append in the respected table.
- Restoration related log are stored in Click-house store Folder in Report-Backup-Restore-log.

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