



DATA IN SYNCH User Guide ver 1.0





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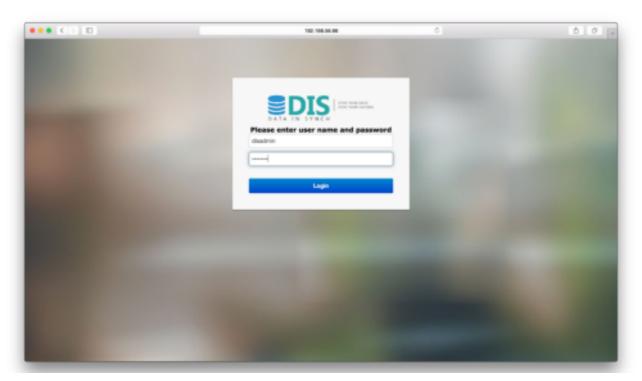


INTRODUCTION

DataInSynch is high speed, reliable and web-based solution to compare and repair data. It provides fast, east and reliable tool to detect data vacations across heterogeneous databases. It verifies data similarities and fixes dissimilarities online without interrupting ongoing operations. It is utilised to compare and maintain massive amount of data outside database engine to avoid any performance impacts. It is vital to assure data integrity in data integration and data replication solutions.

DataInSynch VI.o is released in two editions (STANDARD and ENTERPRISE) to be adequate to satisfy all customer needs in small, medium and enterprise business. Main features are available for both editions. In both of them, user can define databases, comparing pairs and jobs. Also, user can run jobs, monitor all running jobs and configure users and settings.

DataInSynch ENTERPRISE edition has two unique features FastTrack and Schedule. FastTrack utilises user time to define thousands of comparing pairs, jobs and schedule in a single click. Schedule is an amazing feature enables user to schedule jobs to run automatically in a specific time regularly.



Open application using url :cport>/dismanager">http://chostname>:cport>/dismanager and enter

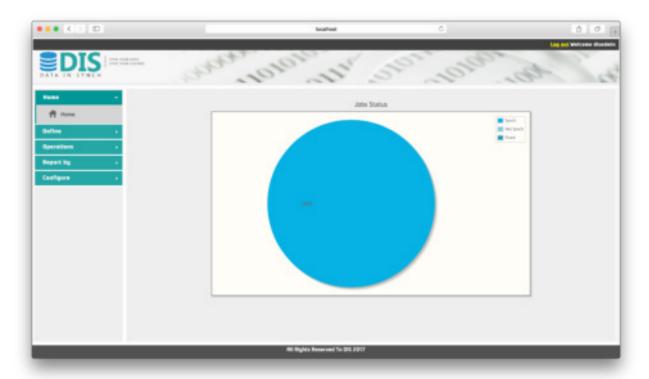
User Name: disadmin

Password: disadmin





Home page contains menu and pi chart to represent results of today running jobs.



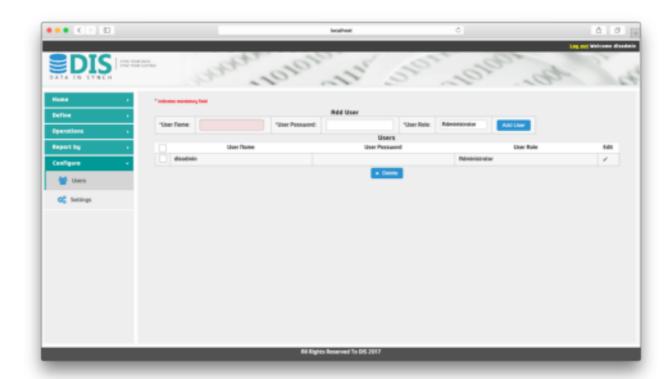
This document shows required steps that user has to follow to define details of agent, database, comparing tables, jobs and scheduled execution times; configure features and user accessibility roles; run and monitor jobs.





CONFIGURATION

Users



This pages allows user to create multiple users. Different permission can be assigned to each user that is matched with his role.

- I. Open **Users** link from **Configure** menu
- 2. To add user, enter:
 - I. User Name: user name that is used to login DIS
 - II. Password: password that is used to login DIS
 - III. User role: role of the user that is one of the following:
 - A. Administrator: The user is enabled to define and run jobs; configure system; and generate reports
 - B. Superuser: The user is enabled to define and run jobs; and generate reports.
 - C. User: The user is enabled to define and run jobs; and generate reports





D. Operator: The user is enabled to run and monitor jobs; and generate reports

IV. then press Add User

- 3. To delete user, select corresponding checkbox then press Delete. Confirmation message will appear. Press Yes to delete or No to cancel.
- 4. To edit user, press pencil mark corresponding to it then enter new information. After that, press "correct" mark to save or "wrong" to cancel





Settings



This pages enables user to set DIS configurations such as: performance tuning, scheduled jobs auto execution, threshold of storing results and email server parameters:

- I. Open **Settings** link from **Configure** menu
- 2. To edit property value, press pencil mark corresponding to it then enter new information. After that, press "correct" mark to save or "wrong" to cancel
- 3. Set of configurable properties are appeared. These options are described as following table:





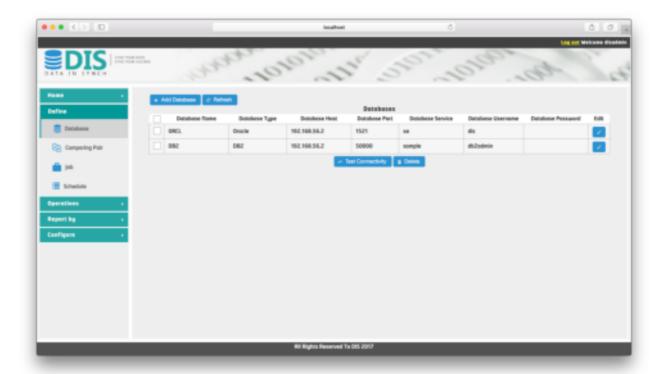
| Property Name | Property Description |
|------------------------------|---|
| AUTOPURGE_RETENTION_PERIOD | Specify retention period in days. All results stored before these days will be removed automatically if AUTOPURGE_EXECUTION is enabled. |
| AUTOPURGE_EXECUTION | Yes to enable purging stored results to save memory space. No to disable auto purge. |
| AUTOEXECUTION_SCHEDULED_JOBS | Yes to enable executing scheduled jobs. No to disable auto execution. |
| | Note: Enterprise Edition |
| PARALLEL_JOBS_EXECUTION | Yes to enable executing multiple jobs parallel. No to disable parallel execution. |
| EMAIL_PASSWORD | Password of email account which used to send results of scheduled jobs execution |
| | Note: Enterprise Edition |
| EMAIL_SERVER_HOST | Email account server which used to send results of scheduled jobs execution Note: Enterprise Edition |
| | · |
| EMAIL_SERVER_PORT | Email account server port which used to send results of scheduled jobs execution |
| | Note: Enterprise Edition |
| EMAIL_USERNAME | Password of email account which used to send results of scheduled jobs execution Note: Enterprise Edition |
| | 110tor Enterprise Edition |





DEFINE

Database



This page enables user to register and edit connection information of databases which store comparable tables to be reachable during definition, verification and maintenance process.

- I. Open **Database** link from **Define** submenu
- 2. To add database, press **Add Database** and enter the following:
 - I. Database Name: The name of your database in DIS
 - II. Database Type: Type of database Oracle, DB2, MySQL or MS SQL Server.
 - III. Database Host: Host name or IP of server where you installed your database
 - IV. Database Port: Port number to used to connect to database
 - V. Database Service: Instance name of database to be used to connect to it
 - VI. Database Username: User name that is used to connect database. He must have access permission on data dictionary tables





VII.Database Password: Password that is used by database username

VIII.then press Add Database.

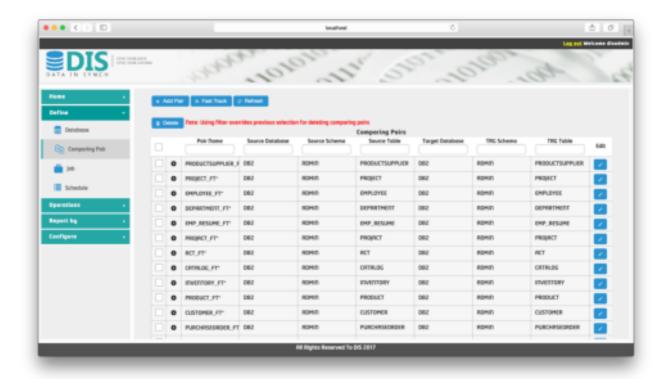
- 3. Test connectivity option is important to test connectivity between DIS Manager server and registered database. Test connectivity can be used by pressing one of two buttons:
 - Button next to Save button in add database dialog to check connectivity before saving new database. To use it, just enter database parameters then press it.
 - 2. Button before Delete button is used to check connectivity for registered databases. To use it, just check databases and then press it to test selected databases connectivities.
- 4. To delete database, select corresponding checkbox then press Delete. Confirmation message will appear. Press Yes to delete or No to cancel. Database should not be deleted if it is used by any comparing pair.
- 5. To edit job, press **Pencil** mark corresponding to popup dialog and enter new information. After that, press **Save** to save new information.

Note: Job should not be deleted if it is used by any schedule.





Comparing Pairs



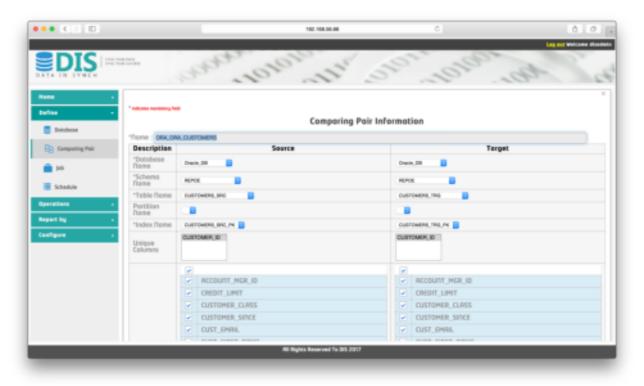
Comparing pairs page enables user to define comparing pairs which describe in details tables and columns to be compared. There are two options here to use, **Add Pair** in which user enter all required information manually table by table and **Fast Track** which is available only in Enterprise edition. It enables user to create comparing pairs for several tables by a single click. The following steps explains the steps of first option:

- Open Comparing Pair link from Define menu
- 2. To add comparing pair, press **Add Pair** button then enter the following information for source and target to specify comparing tables, columns and datasets:
 - I. Name: The name of your comparing pair. It is mandatory field.
 - II. Database Name: Database for source and target which stores comparable tables. Source and target can use different or same database. It is mandatory field.
 - III. Schema Name: Schema name of source and target comparable tables. It is chosen from list of schemas. This list is generated based on the selected database. Source and target can use different or same schemas. It is mandatory field.



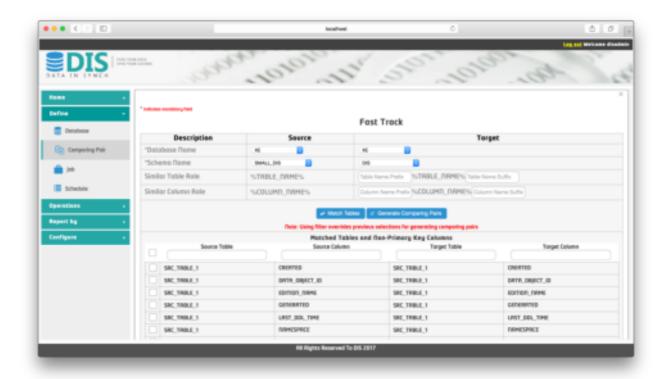


- IV. Table Name: Table name of source and target to be compared. List of available tables are populated as per schema name selection. It is mandatory field.
- V. Partition Name: Partition name of selected source and target tables. List of partitions are populated as per schema name selection. It is optional field.
- VI. Index Name: Unique index name of source and target tables. If there is no unique index on the table, generated lis will be empty and comparing pair will not be saved. It is mandatory field.
- VII. Unique Columns: It displays columns of unique index.
- VIII. Values Columns: It displays columns of table other than columns of unique index. It is selective checkboxes to determine which columns involved in verification process.
- IX. Selected Columns: It displays selected columns in same order of selection. To be populated, select required columns in the required orders from values columns then press select. This field is optional.
- X. Where Condition: It specifies dataset to be compared by entering where condition for source and target. It is optional field.
- XI. then press Add button









- 3. Using ENTERPRISE edition, Fast Track button is available to enable user to create comparing pairs for several tables by a single click. Follow the following steps to use it:
 - Press Fast Track button
 - 2. Choose source and target databases
 - 3. Choose source and target schemas
 - 4. (Optional) Enter table name prefix and table name suffix to match tables names in source and target according to it
 - 5. (Optional) Enter column name prefix and column name suffix to match tables names in source and target according to it
 - 6. Click **Match Tables** to generate list of matched columns
 - 7. Select columns to be involved in comparing pairs.
 - 8. Click **Generate Comparing Pairs** to generate comparing pairs for selected columns
- 4. To update comparing pair, display it on the screen by pressing **pencil** icon. Dialog will popup to enable you modify comparing pair configuration. After, modifying press **update** button.
- 5. To delete comparing pair, display it on the screen by pressing arrows then press **Delete**. Confirmation message will appear. Press Yes to delete or No to cancel.





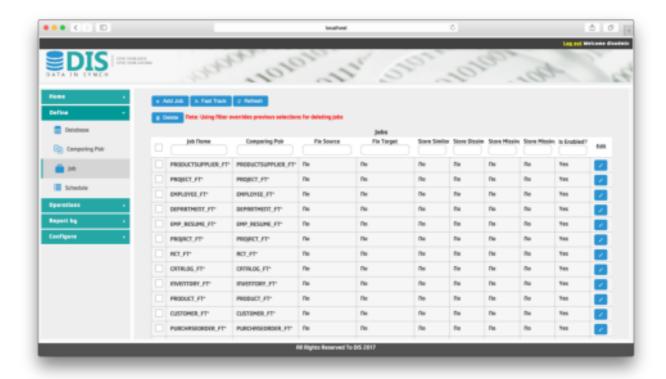
Notes:

- Comparing pair cannot be saved in the following conditions:
 - I. Any mandatory field is not filled
 - 2. The number of primary or selected columns in source or target are different
 - 3. Syntax error in where condition
- On the column level, warning message is shown to highlight that there is datatype or data length difference between source and target
- Comparing pair cannot be deleted if it is used by any jobs





Job



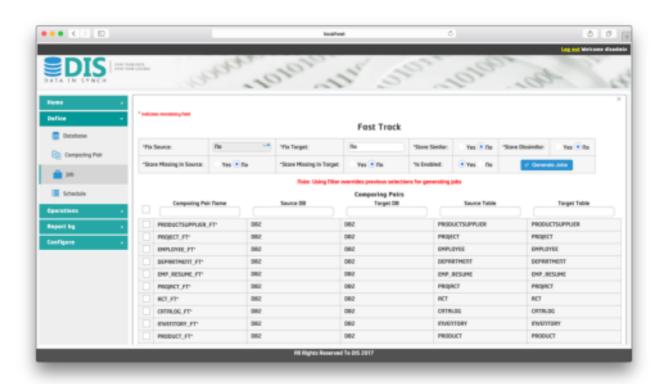
User uses this page to put comparing pair in executable frame named job. There are two options here to create the job, **Add Job** in which the user creates jobs for comparing pairs one by one. The second option is **Fast Track** which is available only in Enterprise edition. It enables user to create several jobs through a single click. The following steps explains the first option:

- Open Job link from Define menu
- 2. To add job, press **Add Job** button and enter the following:
 - I. Job Name: The name of your job in DIS
 - II. Comparing Pair: Comparing pair which used to perform verification
 - III. Fix Source: Determine the action that will be followed to fix data concerns in source table:
 - I. **No** to disable fixing data issues
 - II. **Insert Into Source** to enter missing records into source table
 - III. **Delete From Target** to delete from target table missing records in source





- IV. Fix Target: Determine the action that will be followed to fix data concerns in target table:
 - I. **No** to disable fixing data issues
 - II. **Insert** to enter missing records only
 - III. Insert and Update to enter missing records and update mismatched fields
- V. Store Similar: It enables storing details of similar records.
- VI. Store Dissimilar: It enables storing details of dissimilar records.
- VII.Store Missing In Source: It enables storing details of missing in source records.
- VIII.Store Missing In Target: It enables storing details of missing in target records.
- IX. Is Enabled: It enables to disable job execution
- X. then press **Save**.







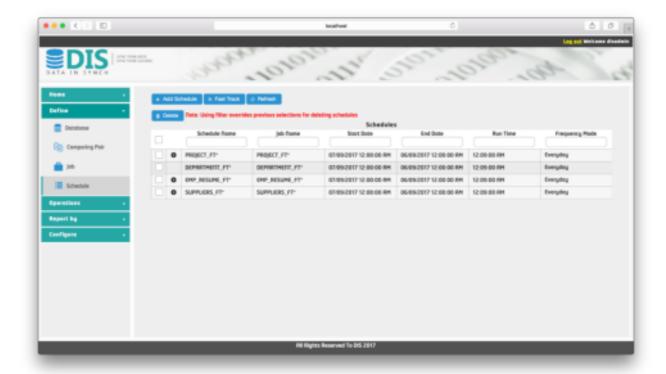
- 3. Using ENTERPRISE edition, Fast Track button is available to enable user to create jobs for several comparing pairs by a single click. Follow the following steps to use it:
 - I. Press Fast Track button
 - II. Enter all required information such as: Fix Source, Fix Target .. etc.
 - III. Select comparing pairs to create jobs for them
 - IV. Click **Generate Jobs** to generate jobs for selected comparing pairs
- 4. To delete job, select corresponding checkbox then press **Delete**. Confirmation message will appear. Press Yes to delete or No to cancel.
- 5. To edit job, press **Pencil** mark corresponding to popup dialog and enter new information. After that, press **Save** to save new information.

Note: Job should not be deleted if it is used by any schedule.





Schedule



This page allows user to schedule auto executed job. The user can specify start and end time of schedule activation. Also, can specify execution time and execution frequency mode. To receive automatic email execution result, user should enable send email feature and specify correct emails addresses of receipts. There are two options here to use, **Add Schedule** in which user schedule execution jobs one by one and **Fast Track** which is available only in Enterprise edition. It enables user to schedule several jobs by a single click. The following steps explains the steps of first option:

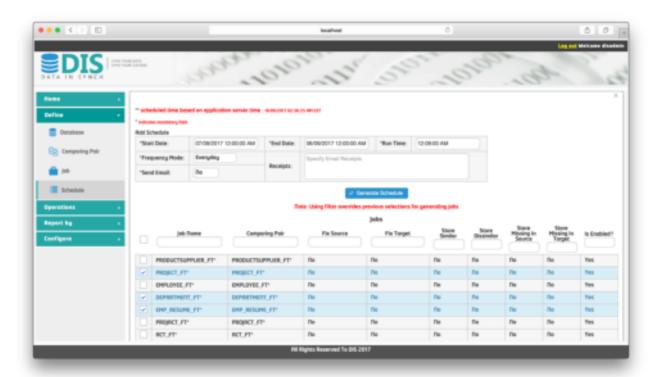
- Open Schedule link from Define menu
- 2. To add job, press **Add Schedule** and enter the following:
 - I. Job Name: Choose the job to be scheduled
 - II. Start Date: Activation date of this schedule
 - III. End Date: Deactivation date of this schedule
 - IV. Run Time: Automatic execution time of this job
 - V. Frequency Mode: Regular basis of execution to run job daily or in specific week day





VI. Send Email: Enable or disable sending results by email

VII.Receipts: Email addresses of people who will receive results of scheduled job execution



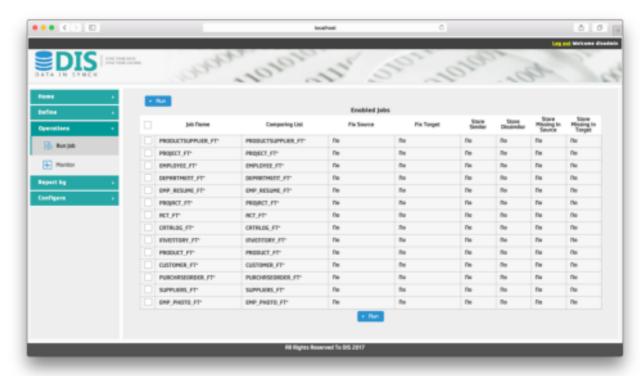
- 3. In ENTERPRISE edition, Fast Track button is available to enable user to create schedules for thousands of jobs by a single click. Follow the following steps to use it:
 - I. Press Fast Track button
 - II. Enter all required information such as: Start Date, End Date .. etc.
 - III. Select jobs to create schedules for them
 - IV. Click **Generate Schedules** to generate schedules for selected jobs
- 4. To delete schedule, select corresponding checkbox then press **Delete**. Confirmation message will appear. Press Yes to delete or No to cancel.





OPERATIONS

Run

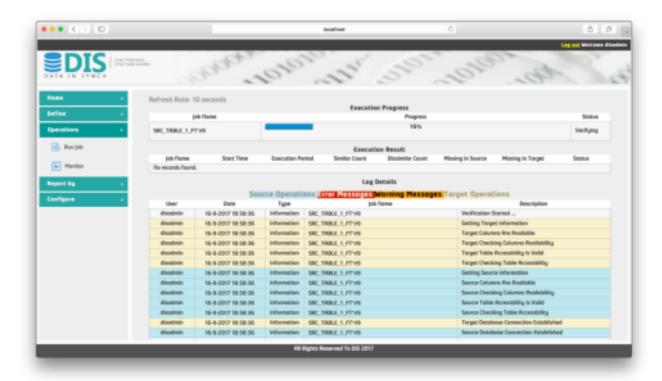


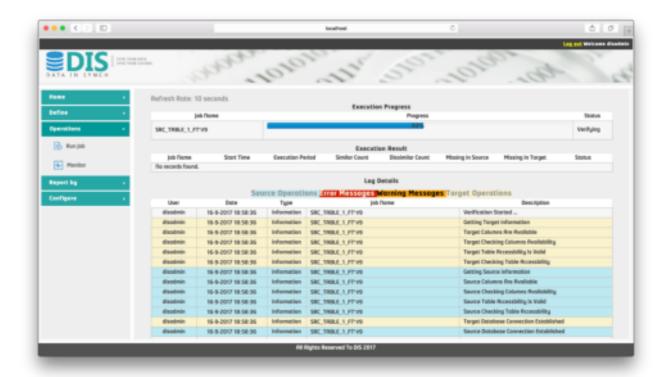
To allow user to run job immediately. User just chooses job by clicking checkboxes then press Run to trigger job. Browser will be directed to page which monitors running job and display result

- I. Open **Run Job** link from **Operations** menu
- Choose jobs to run by clicking checkboxes
- 3. then, Press Run
- 4. Execution progress is monitored for each sub-job
- 5. Error message appears for any errors during execution
- 6. All execution steps are shown in lower section involving all Source Operations, Target Operations, Error Messages and Warning Messages
- 7. After Completion of execution, aggregated result of job execution appears in execution result section. Detailed result for sub-jobs, can be expanded by pressing left arrow in each arrow.



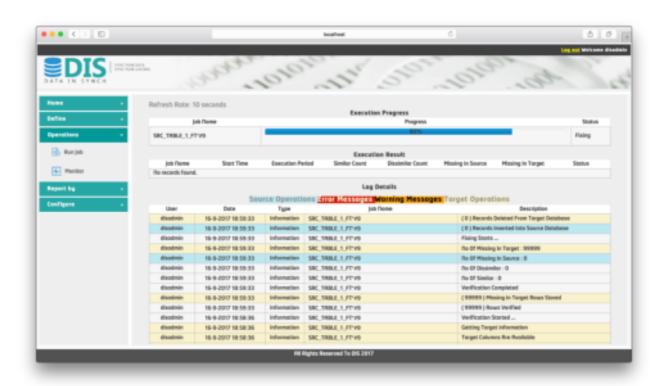


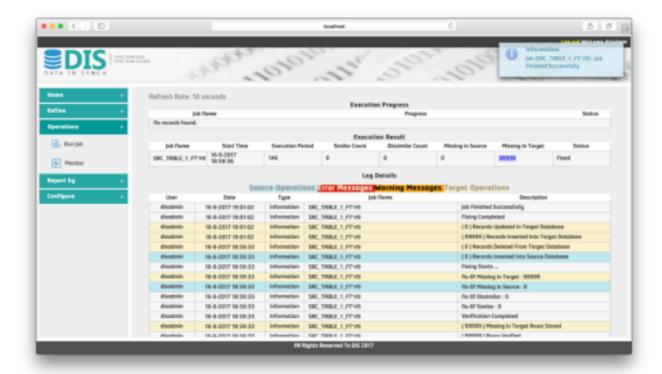
















Monitor



This page allows user to monitor running jobs of today and display execution results. Open **Monitor** link from **Operations** menu

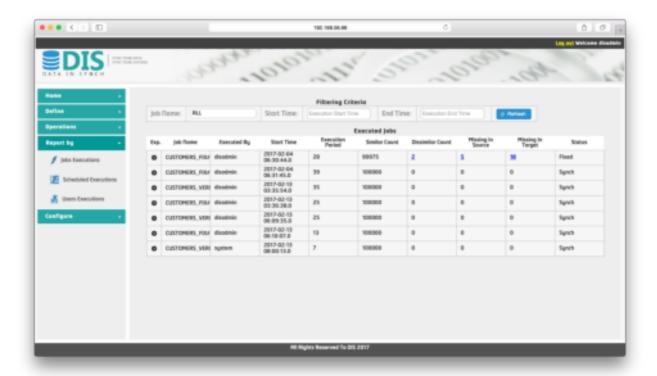






REPORT BY

Jobs Executions



User retrieves jobs executions results using this page. Results are related to jobs executed using Run Job page. Filter involves start and end times of job execution. It specifies job to display all executions results which contains counts of similar, dissimilar, missing in target and missing in source records. This filter is optional which means that it cannot be chosen to get all execution performed manually.

- Open Jobs Execution link from Report by menu
- 2. Specify filter criteria
- 3. then, Press Refresh

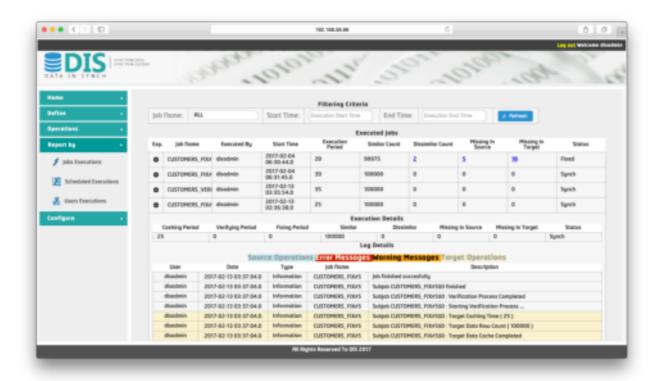
In the first column, there is arrow used to expand the details of job execution. This expansion contains details about each sub-job such as: cashing period, verifying period, fixing period, status and four types of counts similar, dissimilar, missing in target and missing in source are generated.

As shown in report, figures in blue indicate that records' details of job execution can be displayed by clicking them.













Scheduled Executions



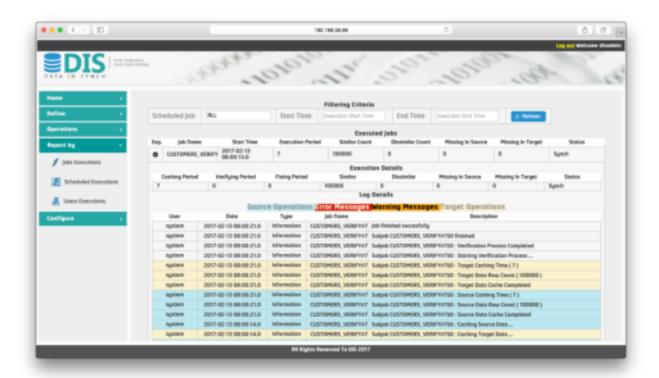
User retrieves scheduled jobs executions results. Results in this report related to jobs executed automatically using scheduler. Filter involves activation's start and end times of job execution. It specifies job from scheduled jobs to display all executions results which contains counts of similar, dissimilar, missing in target and missing in source records. This filter is optional which means that it cannot be chosen to get all execution performed automatically.

- I. Open Scheduled Execution link from Report by menu
- 2. Specify filter criteria
- 3. then, Press Refresh

In the left column, there is arrow used to expand the details of job execution. This expansion contains details about each sub-job such as: cashing period, verifying period, fixing period, status and four types of counts similar, dissimilar, missing in target and missing in source are generated. Figures in blue indicate that records' details of job execution can be displayed by clicking them.



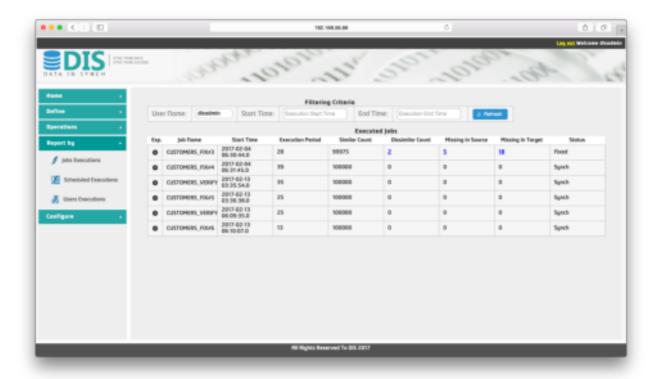








Users Executions



User retrieves jobs executions results. Results in this report related to jobs executed manually. Filter involves start and end times of job execution. It specifies job from scheduled jobs to display all executions results which contains counts of similar, dissimilar, missing in target and missing in source records. This filter is optional which means that it cannot be chosen to get all execution performed manually.

- I. Open **User Execution** link from **Report by** menu
- 2. Specify filter criteria
- 3. then, Press Refresh

In the left column, there is arrow used to expand the details of job execution. This expansion contains details about each sub-job such as: cashing period, verifying period, fixing period, status and four types of counts similar, dissimilar, missing in target and missing in source are generated. Figures in blue indicate that records' details can of job execution stored can be displayed by clicking them.





