AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Guide to Participant Data Replication Monitor

1.01 Final

September 2018

For pdrMonitor v1.0.0 or above

Important notice

PURPOSE

This Guide to Participant Data Replication Monitor, prepared by the Australian Energy Market Operator (AEMO), provides guidance for pdrMonitor under the National NER or NGR (Rules).

NO RELIANCE OR WARRANTY

This document does not constitute legal or business advice, and should not be relied on as a substitute for obtaining detailed advice about the National Gas or Electricity Law, the Rules or any other applicable laws, procedures or policies. While AEMO has made every effort to ensure the quality of the information in this Guide, neither AEMO, nor any of its employees, agents and consultants make any representation or warranty as to the accuracy, reliability, completeness, currency or suitability for particular purposes of that information.

LIMITATION OF LIABILITY

To the maximum extent permitted by law, AEMO and its advisers, consultants and other contributors to this Guide (or their respective associated companies, businesses, partners, directors, officers or employees) are not liable (whether by reason of negligence or otherwise) for any errors, omissions, defects or misrepresentations in this document, or for any loss or damage suffered by persons who use or rely on the information in it.

TRADEMARK NOTICES

Microsoft is a trademark of Microsoft Corporation in the United States and/or other countries.
Oracle and Java are registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.
UNIX is a registered trademark of The Open Group in the US and other countries.

DISTRIBUTION

Available to the public.

DOCUMENT IDENTIFICATION

Business custodian: Specialist, IT Architecture
IT custodian: Technology
Title: Guide to Participant Data Replication Monitor
Prepared by: Technology, Technical Writers

VERSION HISTORY

Version 1.01 Initial creation for pdrMonitor v1.0.0.
Last update: Friday, 28 September 2018 16:35

DOCUMENTS MADE OBSOLETE

The release of this document changes any previous versions of Guide to Participant Data Replication Monitor.

FURTHER INFORMATION

For further information, please visit AEMO's website www.aemo.com.au or contact:
AEMO's Support HubPhone: 1300 AEMO 00 (1300 236 600), Email: supporthub@aemo.com.au

FEEDBACK

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's Support Hub.

Contents

Chapter 1 Introduction

Purpose

Covers the configuration and use of the pdrMonitor software.

Audience

This guide is for *Registered Participants'*:

- Who use Data Interchange.
- Technical and software development staff, responsible for systems implementation.

Assumed knowledge

This guide assumes you have knowledge of:

- The Java application environment.
- The operating system you are using.
- Database design
- How Data Interchange operates.

How to use this guide

- This guide is written in plain language for easy reading. Where there is a discrepancy between the Rules, and information or a term in this document, the Rules take precedence.
- Text in this format indicates a resource is on AEMO's website.

- Glossary terms are capitalised and have the meanings listed against them in the **Data Interchange Framework and Glossary**.
- *Italicised terms* are defined in the NER or NGR. Any rules terms not in this format still have the same meaning.
- Actions to complete in the interface are **bold and dark grey**.

What's in this guide

Chapter 2 About pdrMonitor on page 3 provides an overview of the software, who can use it, how you use it, system requirements, supported web browsers, and prerequisites.

Chapter 3 Access on page 5 explains how to login to pdrMonitor.

Chapter 4 Configure on page 7 explains the steps required to setup pdrMonitor.

Chapter 5 Systems on page 18 explains how to use the pdrMonitor to view the status of your systems.

Chapter 6 Database Tables on page 39 provides an information about the pdrMonitor database, including and ER diagram and table descriptions.

Chapter 7 Needing Help on page 47 provides some troubleshooting, a list of related resources, information about contacting AEMO's Support Hub, and how to provide feedback.

Chapter 2 About pdrMonitor

What the software is for

The pdrMonitor software is a component of Data Interchange, providing participants with visualisation of the status of their Data Interchange systems.

Who can use pdrMonitor

This software is for *Registered Participants* using the Data Interchange software to replicate data between their systems and AEMO's.

The pdrMonitor software replaces the Replication Manager software.

How do you use the software?

Participants install, configure, and use the pdrMonitor on their local computers.

For help, see Participant Data Replication Monitor GUI Installer Guide.

Software requirements

The pdrMonitor software:

- Runs under Oracle's JRE 8.
- Runs on both Windows and Unix-like operating systems.
- In a Windows 64-bit environment, the Java and wrapper for service must be either 32-bit or 64-bit.

Supported web browsers

To access the pdrMonitor, AEMO recommends the following web browsers:

Browser	Platform	Version	More information
Microsoft Internet Explorer	Windows	IE11	https://www.whatismybrowser.com/guides/the-latest-version/internet-explorer
Microsoft Edge	Windows 10	Latest	https://www.microsoft.com/en-au/windows/microsoft-edge
Google Chrome	All platforms	Latest	https://www.whatismybrowser.com/guides/the-latest-version/chrome

Prerequisites

To configure and use the pdrMonitor, you need:

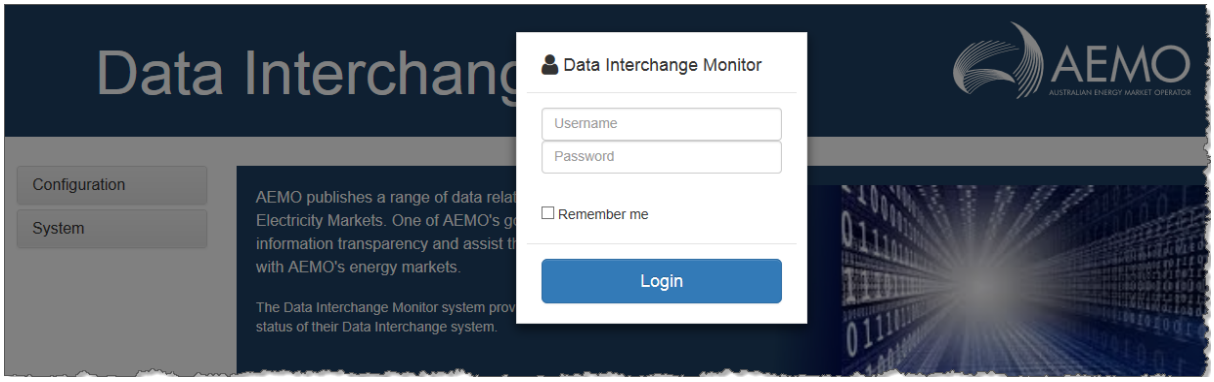
1. A working installed version of the pdrMonitor software. For help, see Participant Data Replication Monitor GUI Installer Guide.
2. One or more working Data Interchange instances. For help, see Concise Guide to Data Interchange.
3. Access to the local database (read and write).

Chapter 3 Access

To access pdrMonitor:

1. Using your web browser, navigate to the following URL:
   http://<hostname>:<web_server_port>/html/index.html
   - **hostname** is the server where you installed the pdrMonitor
   - **web_server_port** is the port number you selected during installation configuration, for example 9020.
2. A login screen similar to below displays. Enter the following default access credentials :
   - Username: admin
   - Password: admin

   This is an initial set up password only.
3. Click Login.

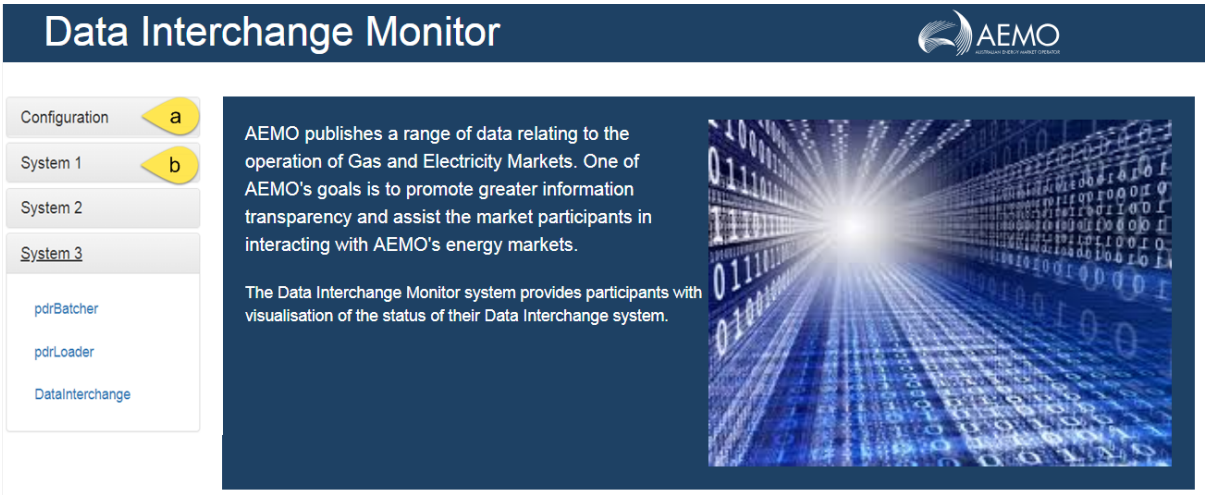


4. The home page displays with the following functionality:

   a. Configuration: where administrators manage systems connections, users, roles, and view settings. For help,, see Configure. If you do not have administration rights, you cannot see this menu option.

   b. System names: The system names administrators set up in the configuration menu display where providing you have rights you can view a summary and configure Data Interchange applications for each system. For more details, see Systems

To see the menu options, click the menu item.



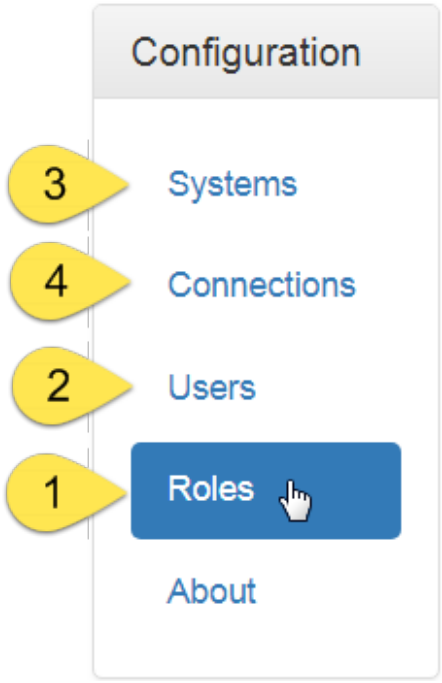
Next, see Configure.

Chapter 4 Configure

Configuration steps

Steps required to configure pdrMonitor:

1. Roles.
2. Users.
3. Systems
4. Connections.

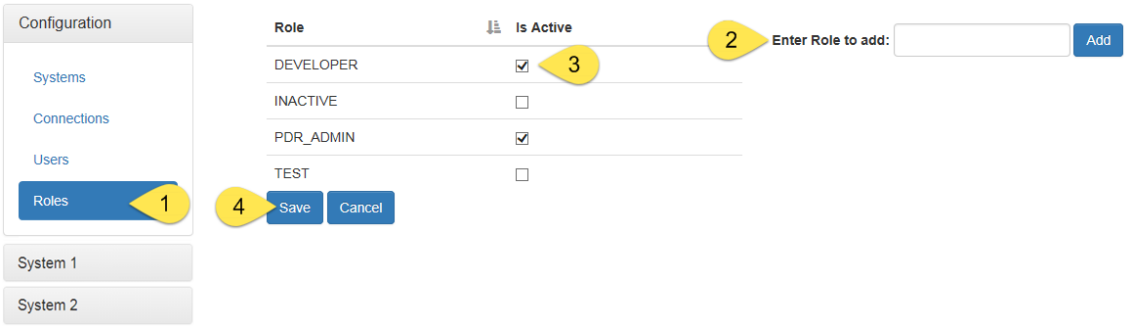


Roles

In the Roles interface, you configure the user defined roles. The install process sets up one pre-defined role called PDR_ADMIN. This is the system administrator who can add and edit systems, connections, users, and roles.

Create a new role

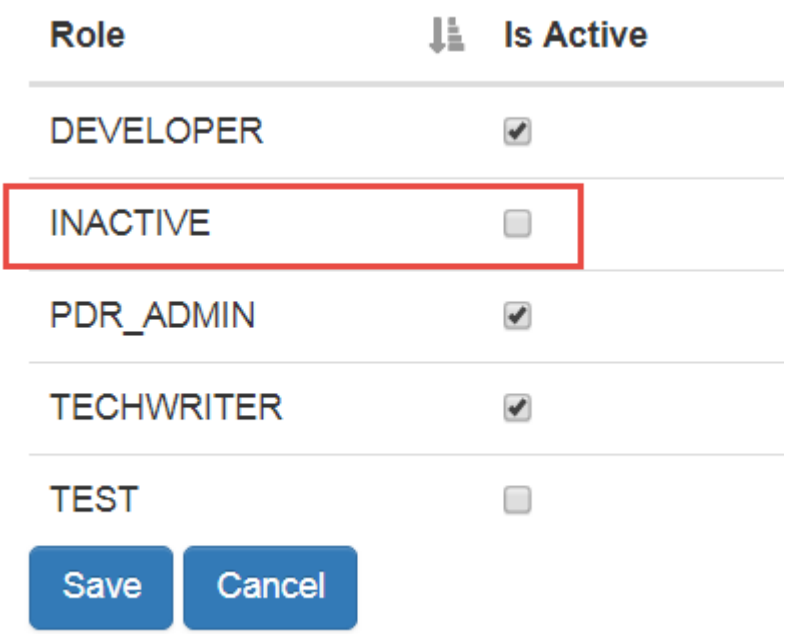
1. Login to pdrMonitor, click Configuration and then Roles.
2. Next to Enter Role to add, enter the role name and click Add.
3. To make the role active, next to the role, under Is Active select the checkbox (by default, this is selected).
4. Click Save.
   Alternatively, click Cancel to discard all changes.



Edit a role

Only PDR_ADMINS have access to edit roles.

1. Login to pdrMonitor, click Configuration and then Roles.
2. To make the role inactive, next to the role, under Is Active deselect the checkbox.
3. Click Save.

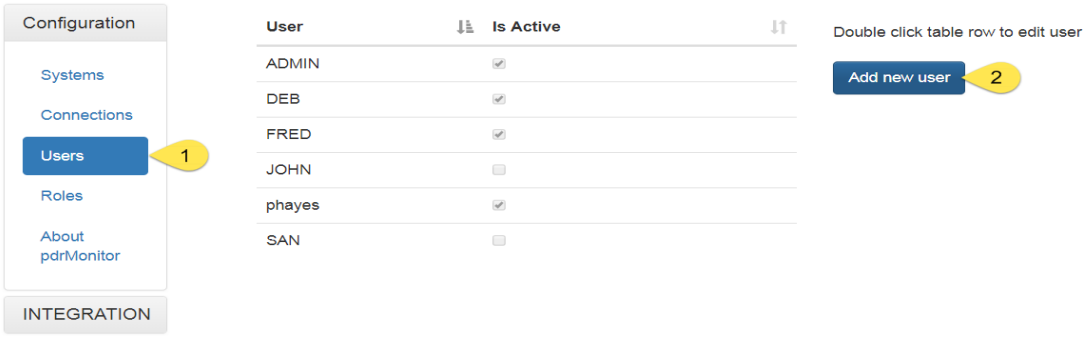


Users

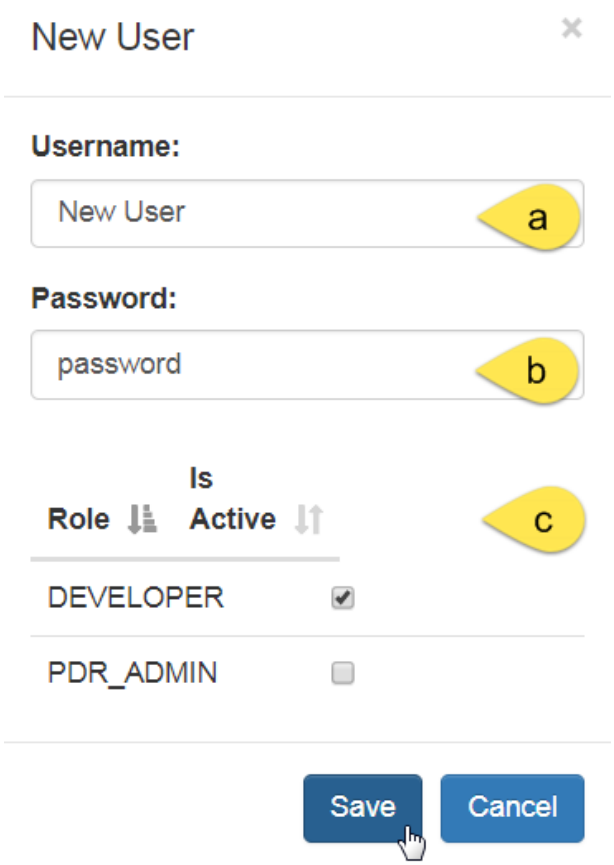
In the Users interface you create and edit user accounts.

Add a user

1. Login to pdrMonitor, click Configuration and then Users.



2. Click Add new user and complete the details:
   a. Username: enter the new user's name.
   b. Password: create a password for the new user.
   c. Role: under Is Active select the checkbox next to the user's role. For help, see Roles.



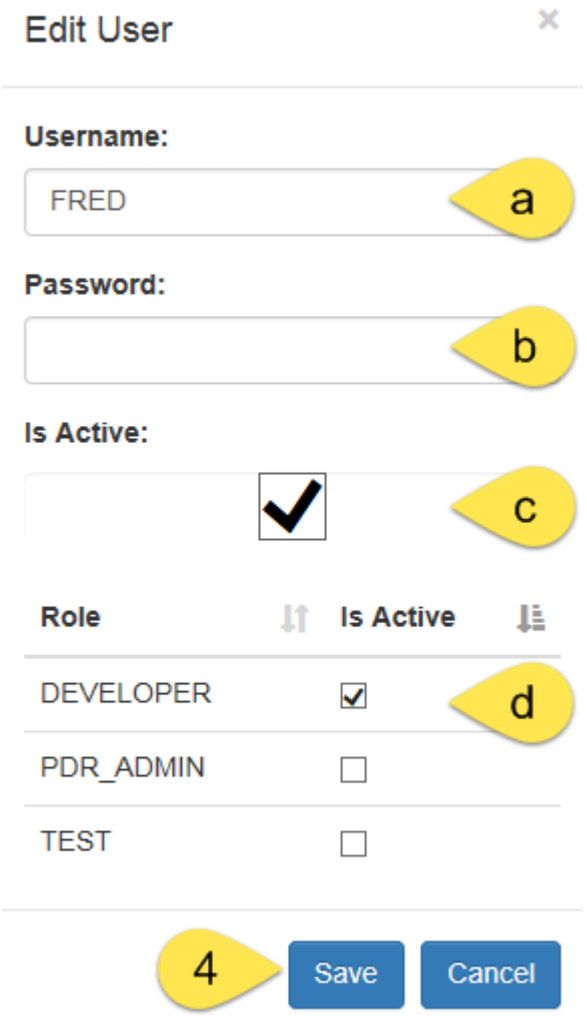
Edit a user

1. Login to pdrMonitor, click Configuration and then Users.
2. Under Users, double-click their name.
3. In the Edit User window, make the relevant changes:

Only PDR_ADMINS can edit users.

a. Username:The username is read only. You cannot edit it.
b. Password: If you are not changing the password leave the password field blank to retain the existing password.
c. Is Active enables or disables the user account. Once the account is inactive the user cannot login.
d. Role: To enable a role for a user, select Is Active checkbox next to the role name. To inactivate a role, unselect the Is Active checkbox.

4. Click Save.
Alternatively, click Cancel to discard all changes.



Change password

Only the PDR_ADMIN role can make password changes. If you forget your password, contact your pdrMonitor administrator to change it for you.

To change a password, administrators follow the steps for Edit a user and enter the new password in the Password field.

Systems

The Systems option in the Configuration menu is where you register a Data Interchange application that displays in the main menu.

A system is a collection of Data Interchange applications that work together, usually comprising a pdrBatcher and a pdrLoader instance.

You might create a system around environments, for example:

- Pre-production and production.
- Participant ID where multiple Data Interchange instances are installed within the company.

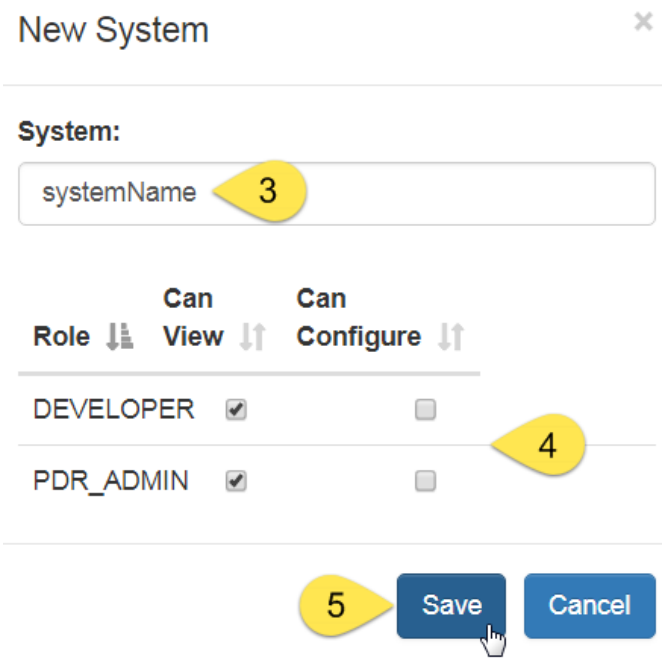
Prerequisites

To add a system you must have system Roles setup. For help, see Users.

Add a system

1. Login to pdrMonitor, click Configuration and then Systems.
2. Click Add new system.

3. In the New System window, enter the system name.
4. For each Role, select if they can view only or also configure.
5. Click Save.
6. If successful your system displays in the System list. Otherwise a message displays advising the amendments required.

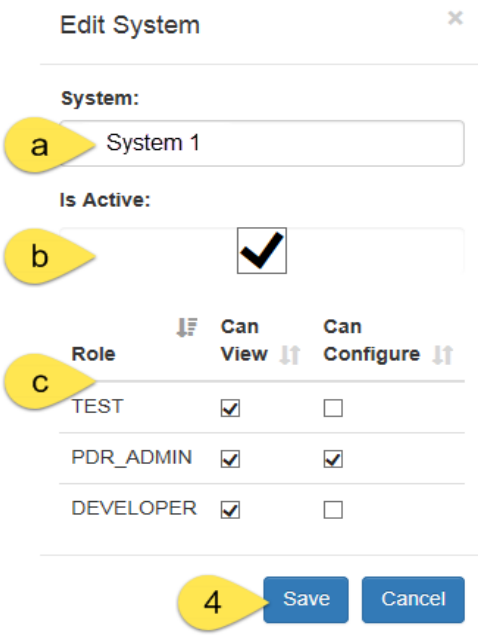


Edit a system

Only PDR_ADMINS can edit a system.

To edit a system:

1. Login to pdrMonitor, click Configuration and then Systems.
2. Under system, double-click the system name.
3. In the Edit System window you can change the following:
   a. System: The System name is read only. You cannot edit it.
   b. Is Active: controls if pdrMonitor collects data from the named system. During system maintenance this is where you can disable the system.
   c. Role: The mapping of roles onto a system. For each role, you can allocate permissions to View configuration and reports and also Configure updates to the data replication settings.



4. Click Save to change the system configuration in the pdrMonitor database. Alternatively, click Cancel to discard all changes.

Remove a system

To remove a system follow the steps to Edit a system deselecting the Is Active checkbox.

There is no functionality to remove a system because removing a system would cause you to lose historical data.

Connections

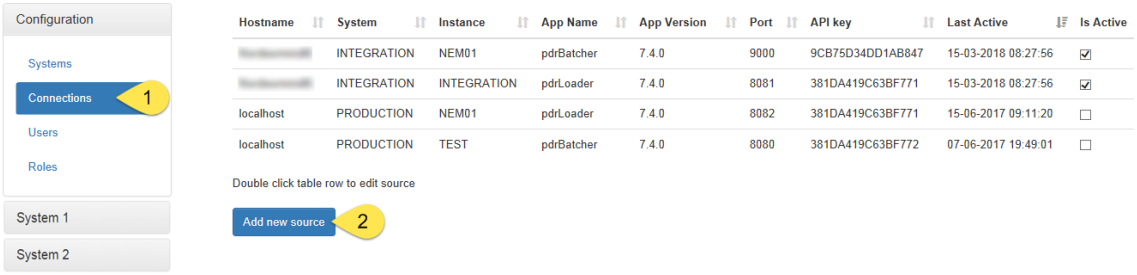
The connections interface is where you configure Data Interchange applications to allow the pdrMonitor to collect performance and logging data from your applications.

Prerequisites

1. Before you can setup a connection you must first setup your systems. For help, see Systems.
2. pdrBatcher and pdrLoader services must be running while adding or editing connections.

Add a connection

1. Login to pdrMonitor, click Configuration and then Connections.
2. Click Add new source.



3. In the New Source window, enter the source details. For help with the fields, see Table 1
4. When all fields are complete, clickTest.

5. The pdrMonitor performs a connectivity test to the application and returns the Application Name, Instance, and Application Version.
   If the connectivity test fails, adjust the parameters in the New Source window and click Test again.
6. When the connectivity test is successful, the Save button enables. Click it to save the connection details.
   This also results in the data collection commencing from any newly configured source.
   Alternatively, click Cancel to discard all changes and return to the main connections window.

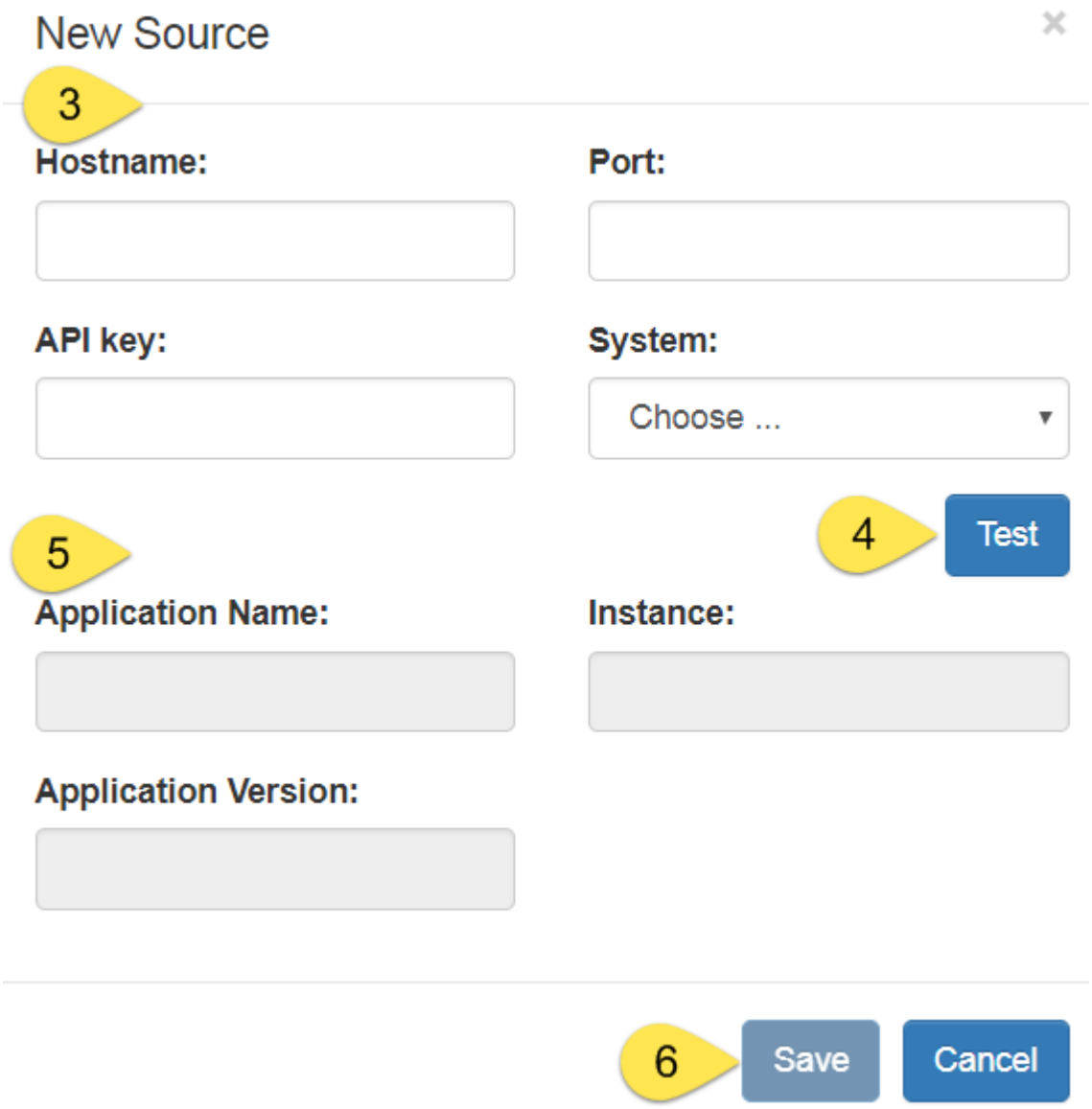


Table 1 New source window fields

Parameter	Description
Hostname	The server where the pdrBatcher or pdrLoader application is running.
Port	The port number configured in the application where the web services are exposed. For help, see your pdrBatcher or pdrLoader properties file.
API key	The API key used to authorise access to web services in the application. Defined either in the pdrBatcher or pdrLoader properties file in property **web_server_api_key**. If you do not define this property the pdrMonitor uses the value of the **hash** property in the **pdr_key.properties file**.
System	The name of the system, for help, see Systems. The application is allocated against one of the registered systems within pdrMonitor. pdrBatcher and pdrLoader instances that are configured to work together should always be defined in the same system to allow end to end data replication performance reporting.

Edit a connection

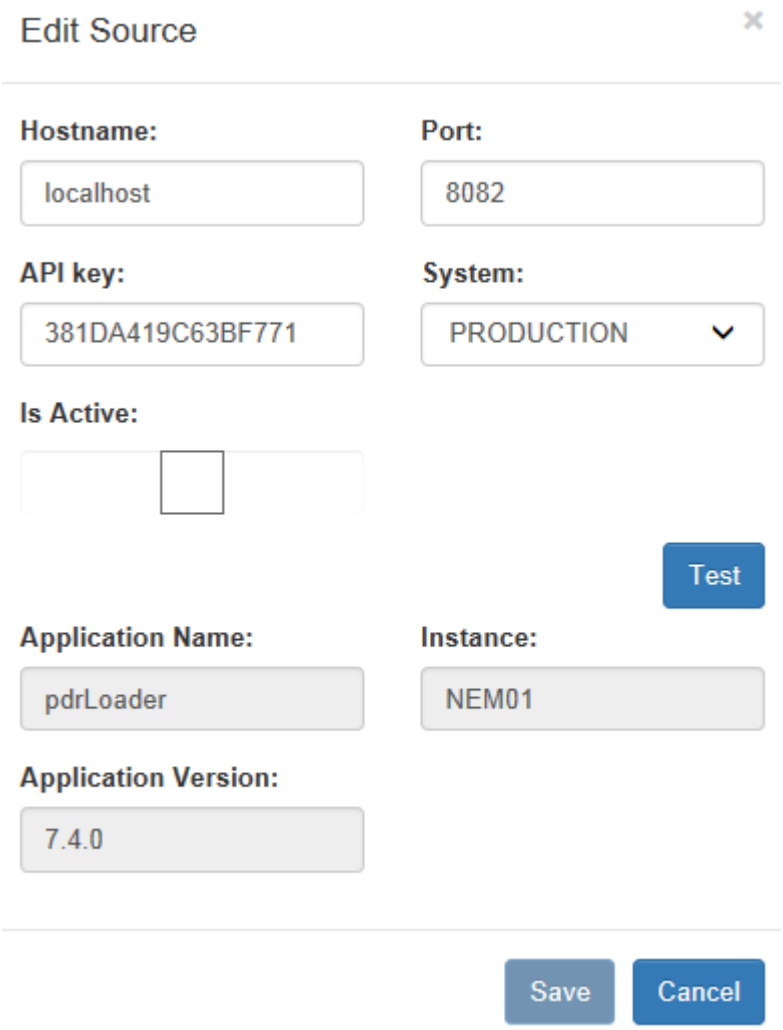
In the Edit Source window you can modify an existing source.

To edit an existing source:

1. Double-click the relevant row in the table.
2. In the Edit Source window, modify the required parameters. For help with the fields, see Add a connection.
3. Click Save.
   Alternatively, click Cancel to discard all changes and return to the main connections window.

You can temporarily disable a connection by deselecting the Is Active checkbox.

This may be desirable during periods of application maintenance.



Chapter 5 Systems

In the systems menu, you can view the application details for all the systems you have setup.

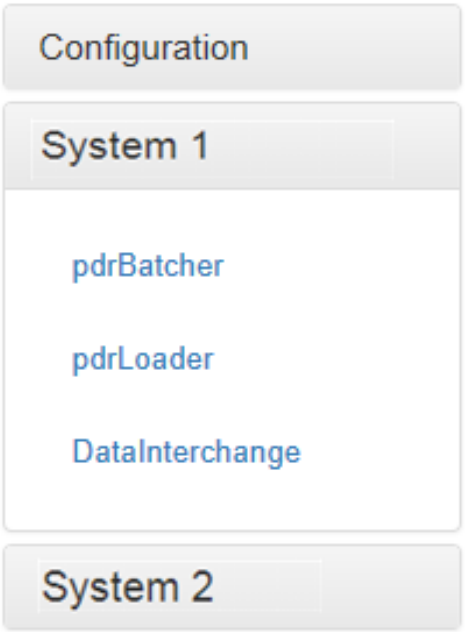
Prerequisites

To view system details, you must first configure your systems and connections. For help, see Configure.

System menu

Clicking a system menu displays three options for the system:

1. pdrBatcher for viewing the status, configuration, and reporting for each connected pdrBatcher instance.
2. pdrLoader for viewing the status, configuration, and reporting for each connected pdrLoader instance.
3. Data Interchange for viewing the status, configuration, and reporting for each end-to-end data replication service.

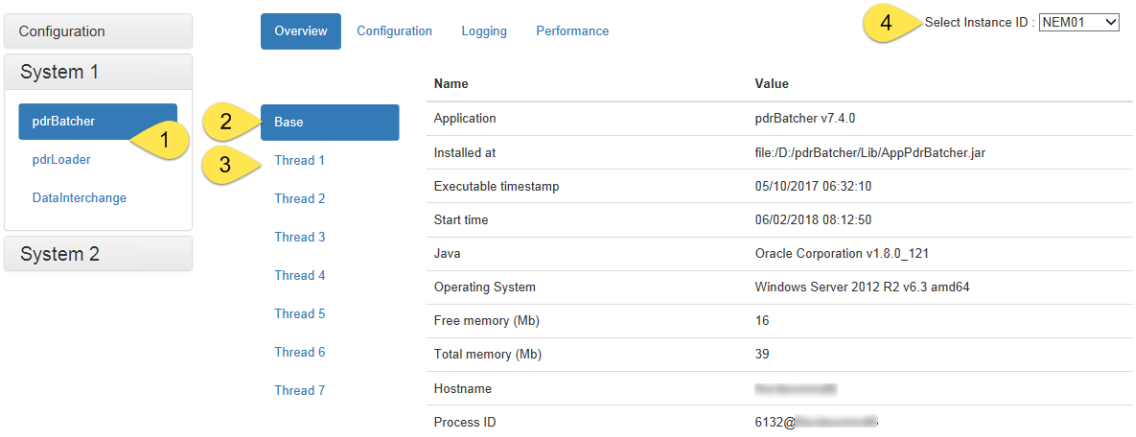


Application overview

In the main system menu, clicking pdrBatcher or pdrLoader displays a summary of the application.

To see an overview:

1. Login to pdrMonitor, click a system name and then click pdrBatcher or pdrLoader.
2. By default, the Overview tab displays a summary of the application (Base)
3. Each Thread level (dependent on how many threads you have setup in your system). Each thread level displays the running status of jobs processed by that thread.
4. If you have multiple application instances, you can view each using the Select Instance ID drop-down.



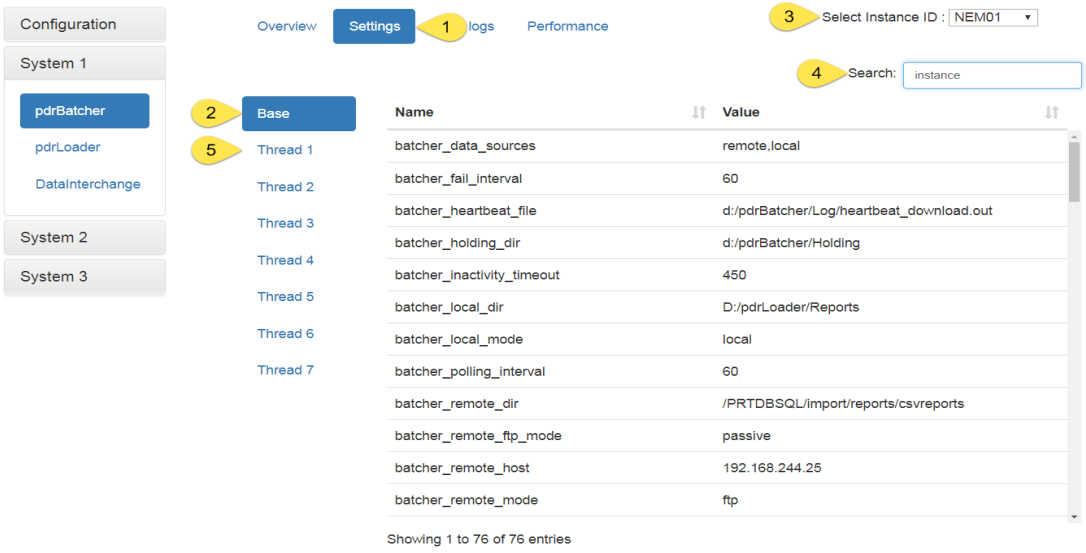
Application settings

The application Settings tab displays the configuration at the application (Base) and Thread levels (dependent on how many threads you have setup in your system).

This interface is read only. You make changes in the .properties file.

To view the settings:

1. Login to pdrMonitor, click a system name, click pdrBatcher or pdrLoader and then click Settings.
2. By default, the Base settings display the properties configuration (.properties file) used by the running application instance.
3. If you have multiple application instance, you can view each using the Select Instance ID drop-down.
4. To find specific properties, enter the criteria in the Search filter.
5. To see thread specific configurations, click the Thread level.
   This level includes any global level configurations inherited at the application thread level.



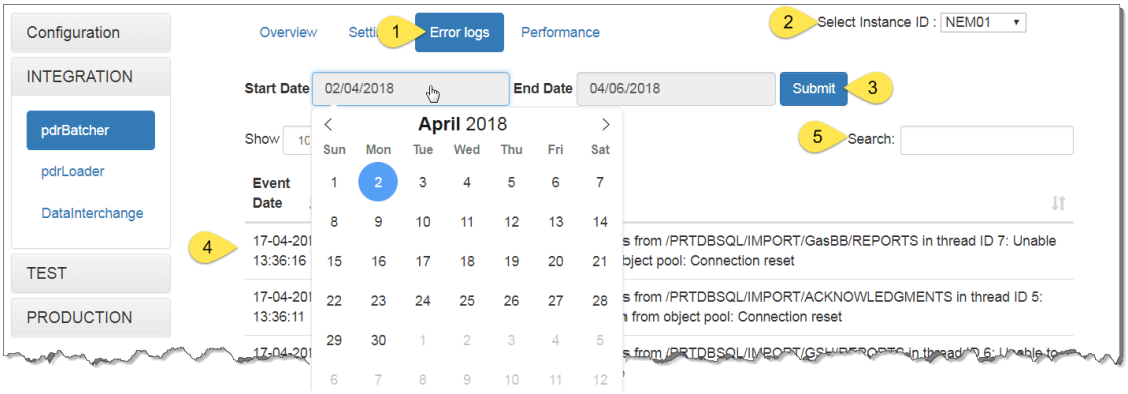
Application error logs

The Error logs tab shows the application log detail captured at the WARN and ERROR levels.

To limit the size of the pdrMonitor database repository, informational log messages are not available.

To view error logs:

1. Login to pdrMonitor, click a system name, click pdrBatcher or pdrLoader and then click Error logs.
2. Select the pdrBatcher and pdrLoader you want to view.
3. Click the Start and End Dates, select from the date picker and then click Submit.
4. The Event Date, Level (WARN or ERROR), and Message display.
5. To find a specific error, enter the criteria in the Search filter.



Application performance

The Performance tab shows the application activity across your selected dates.

Viewing performance

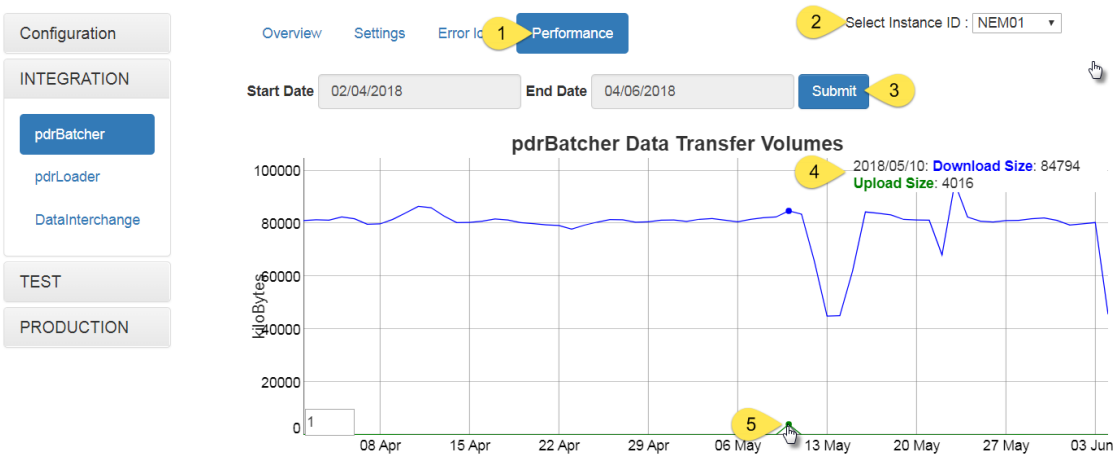
1. Login to pdrMonitor, click a system name, click pdrBatcher or pdrLoader and then click Performance.
2. Select the Instance ID you want to view.
3. Click the Start and End Dates, select from the date picker and then click Submit.
4. The performance chart displays. To see granular graph information in the top right of the chart, hover your cursor over the graph.

   pdrBatcher:

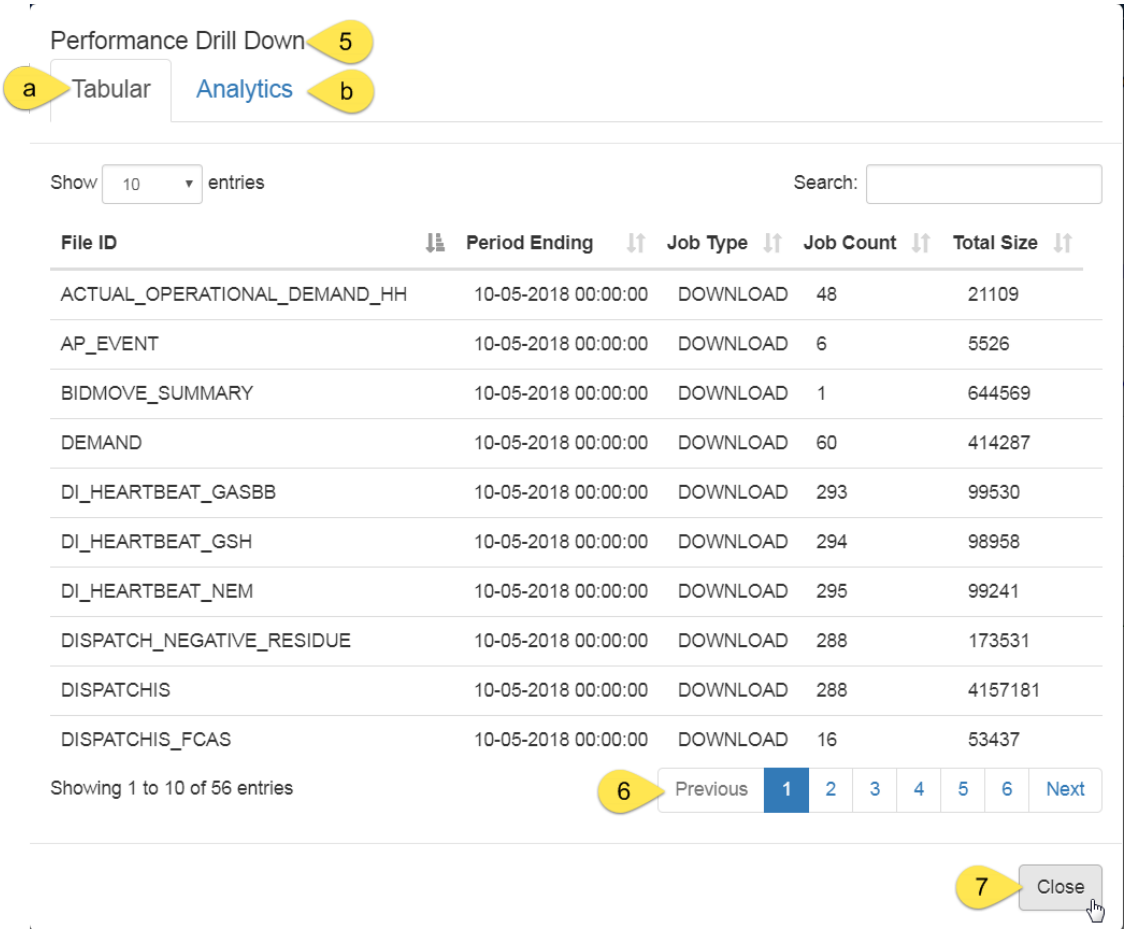
   - Download size: Data downloaded from AEMO to your system
   - Upload size: Data sent from your system to AEMO.

   pdrLoader:

   - Transactional size: Data loaded to the database as a transactional publication from the pdrLoader Reports directory.
   - Backfill size: Data loaded to the database as recovery for missing transactions from the pdrLoader ReportsTrickle directory.



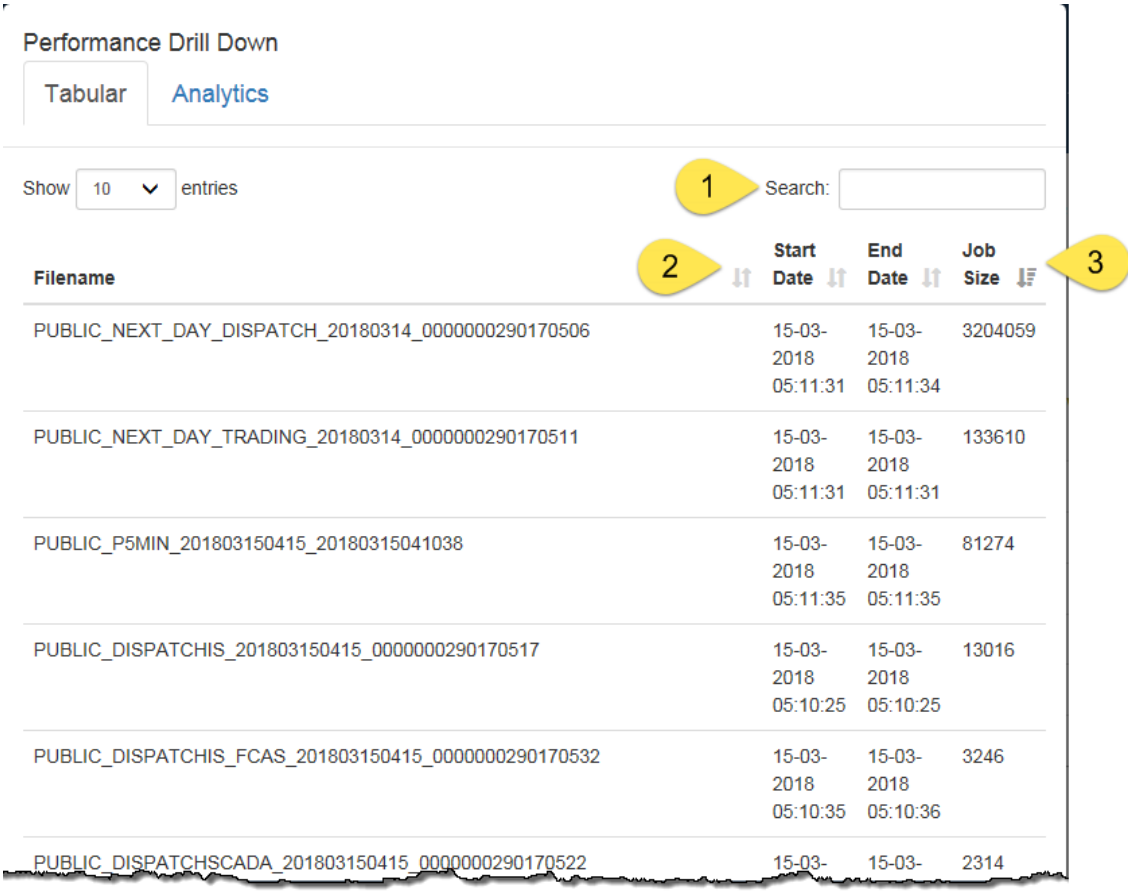
4. To drill down and see individual jobs, double-click a chart point.
5. The Performance Drill Down window displays with two views:
   a. Tabular: Provides details in a table view. For more details, see Tabular performance.
   b. Analytics :Provides a pivot chart representation of the data. For more details, see Performance analytics.
6. To view more entries, click Next.
7. To exit, click Close.



Tabular performance

Displays the individual jobs comprising the performance summary. In this interface, you can:

1. Sort by Start or End Date.
2. Filter by entering criteria in the Search filter.
3. Sort by job size (descending).
    - For **pdrBatcher**, the job size is defined as the number of bytes transferred.
    - For **pdrLoader**, the job size is the number of rows loaded to the database.



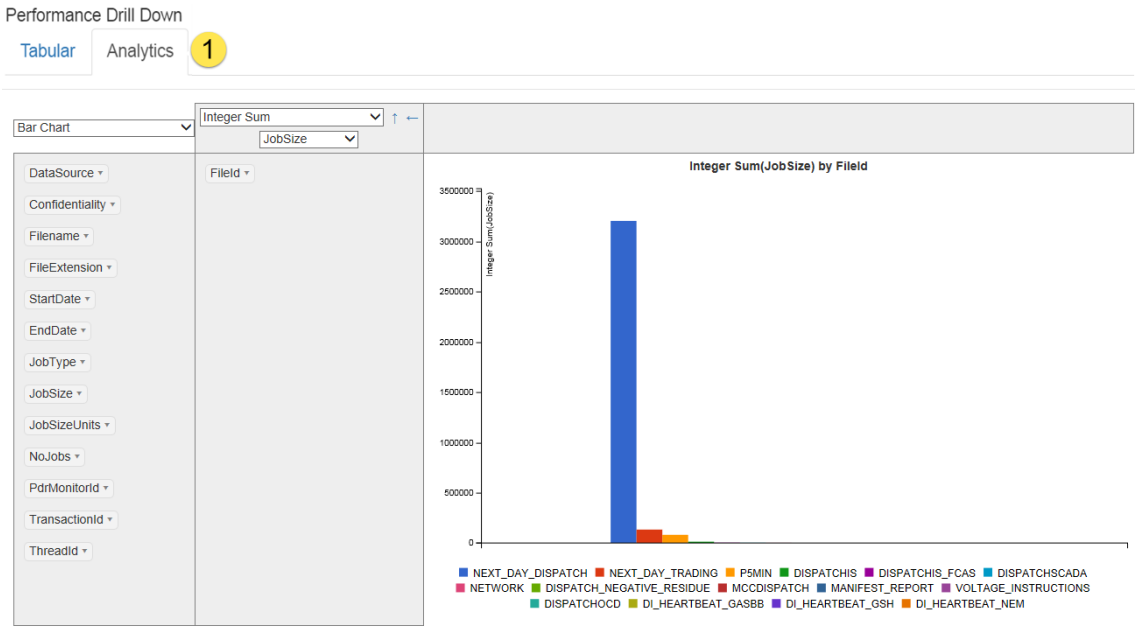
Performance analytics

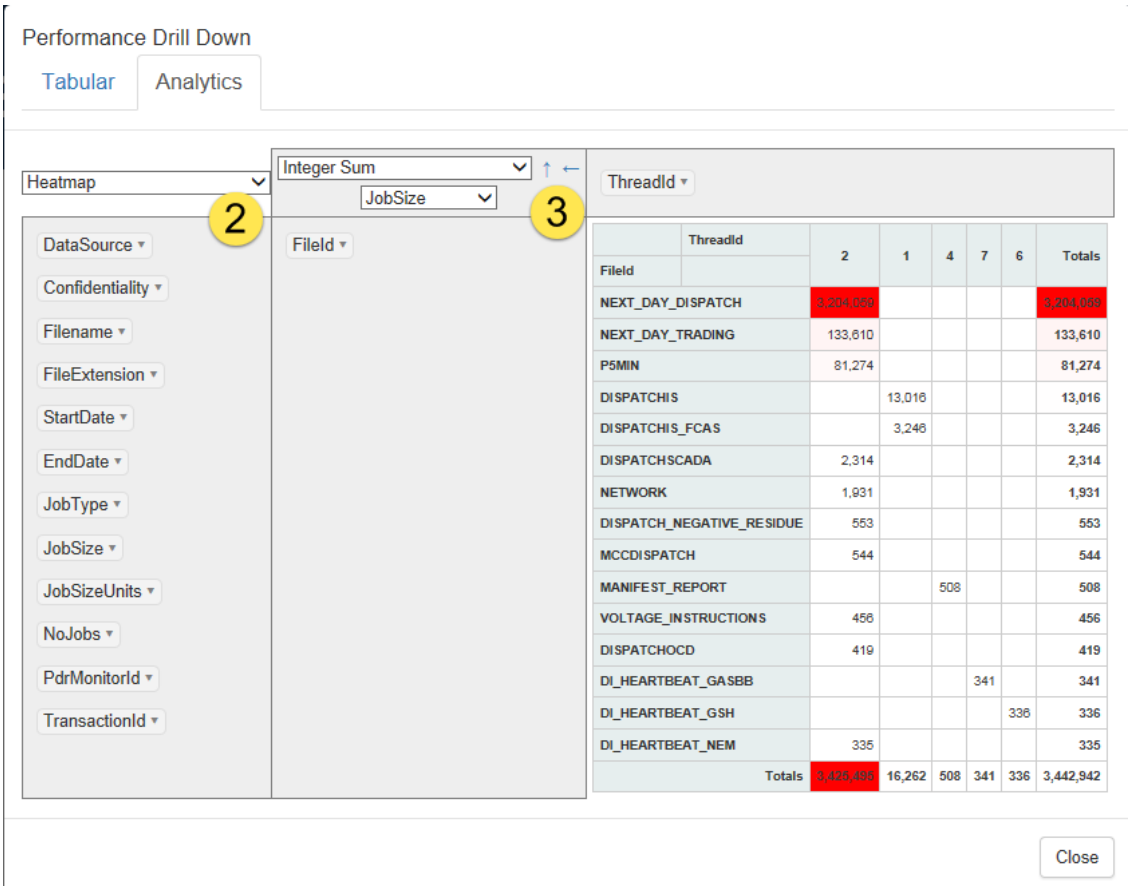
The Analytics tab displays a pivot chart representation of the individual jobs comprising the performance summary.

You can manipulate the reporting component to segment the data in various ways, providing insight into the overall activity of the system.

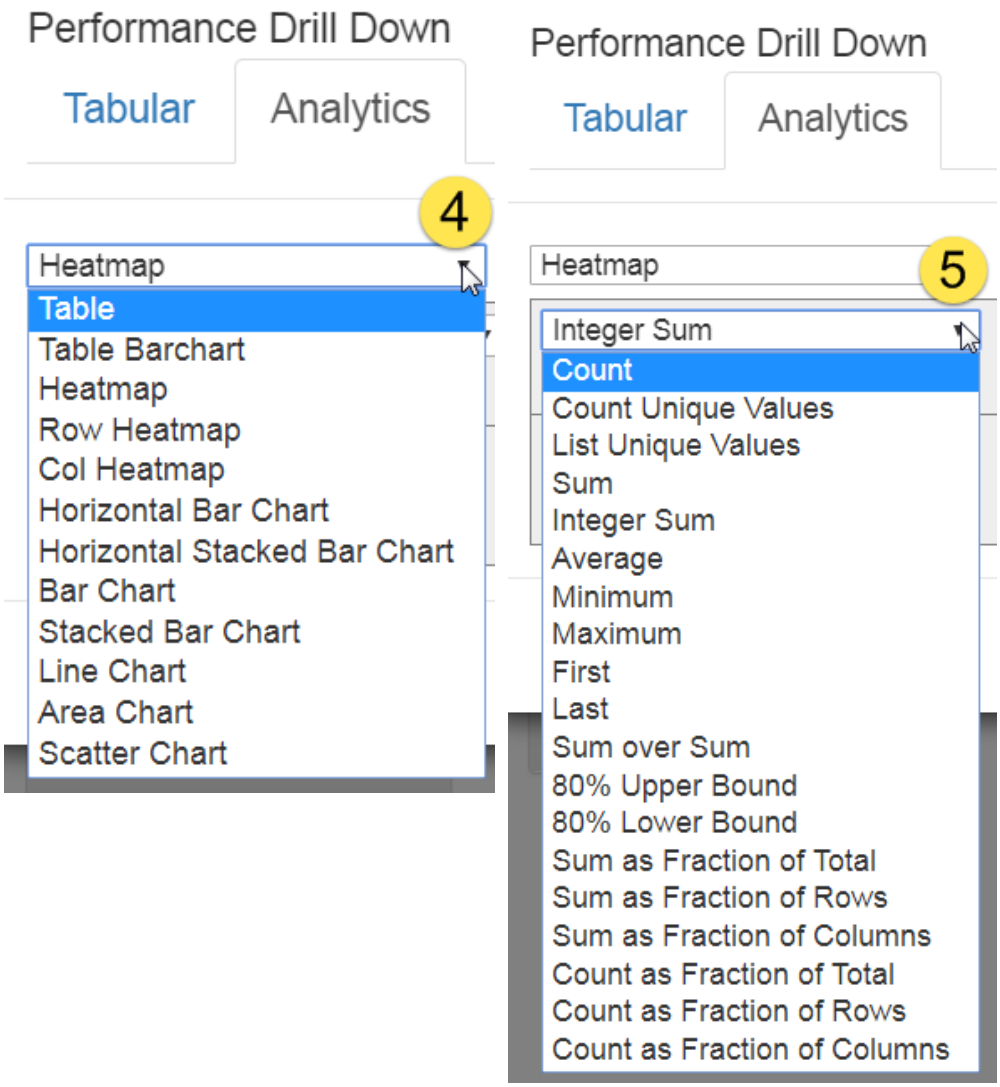
For example, you can:

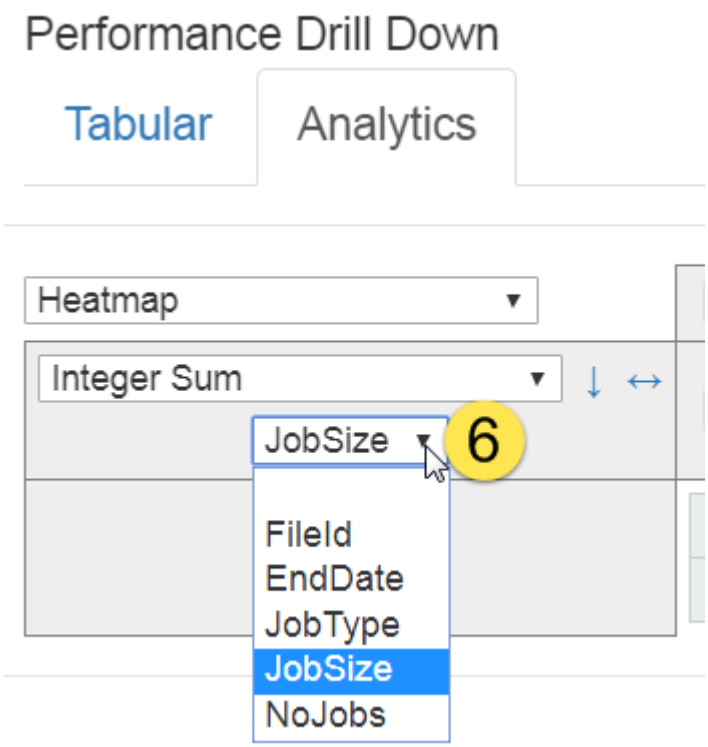
1. View the summed job size by file type. This is the default view.
2. Filter and group information.
3. Sort and view next page.
4. Change the chart type.
5. Filter by field.
6. Filter by FileID, EndDate, JobType, JobSize, NoJobs.





FileId \ ThreadId	2	1	4	7	6	Totals
NEXT_DAY_DISPATCH	3,204,069					3,204,069
NEXT_DAY_TRADING	133,610					133,610
P5MIN	81,274					81,274
DISPATCHIS		13,016				13,016
DISPATCHIS_FCAS		3,246				3,246
DISPATCHSCADA	2,314					2,314
NETWORK	1,931					1,931
DISPATCH_NEGATIVE_RESIDUE	553					553
MCCDISPATCH	544					544
MANIFEST_REPORT			508			508
VOLTAGE_INSTRUCTIONS	456					456
DISPATCHOCD	419					419
DI_HEARTBEAT_GASBB				341		341
DI_HEARTBEAT_GSH					336	336
DI_HEARTBEAT_NEM	335					335
Totals	3,425,495	16,262	508	341	336	3,442,942


Performance Drill Down
Tabular
Analytics
4
Heatmap
Table
Table Barchart
Heatmap
Row Heatmap
Col Heatmap
Horizontal Bar Chart
Horizontal Stacked Bar Chart
Bar Chart
Stacked Bar Chart
Line Chart
Area Chart
Scatter Chart
Performance Drill Down
Tabular
Analytics
Heatmap
5
Integer Sum
Count
Count Unique Values
List Unique Values
Sum
Integer Sum
Average
Minimum
Maximum
First
Last
Sum over Sum
80% Upper Bound
80% Lower Bound
Sum as Fraction of Total
Sum as Fraction of Rows
Sum as Fraction of Columns
Count as Fraction of Total
Count as Fraction of Rows
Count as Fraction of Columns



Data Interchange overview

The Overview tab provides a dashboard displaying the current operational status of the selected Data Interchange system.

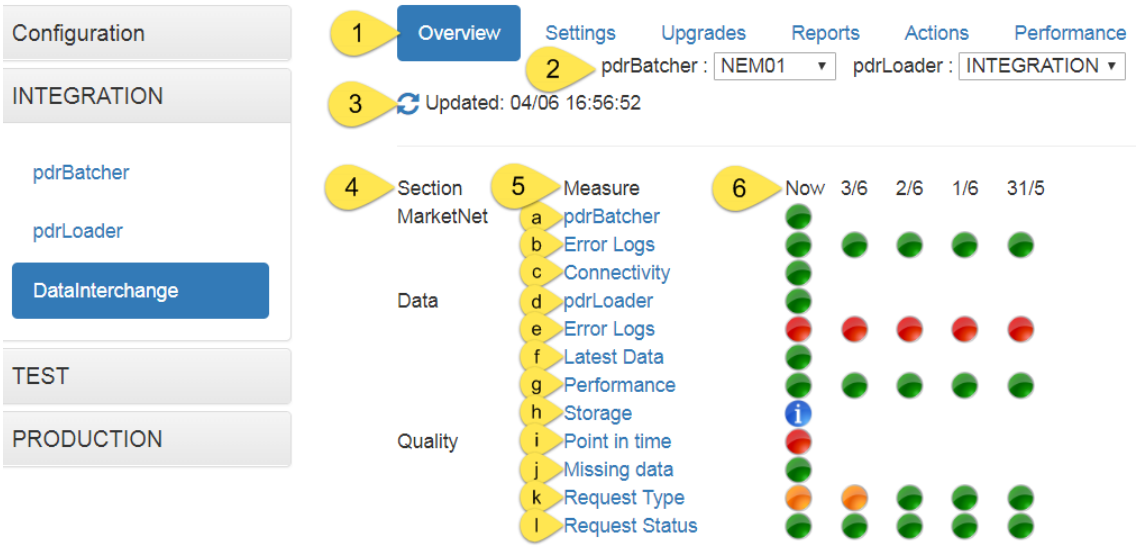
To see a Data Interchange overview:

1. In the top right, select the pdrBatcher and pdrLoader instances for the analysis. If you only have a single instance of each application is defined within your system, they are pre-selected.
2. To refresh the view, click the refresh icon.
3. Section: Where the error occurred, either MarketNet, Data, or Quality.
4. Measure: Click a measure to see more details.

Reference	Section	Measure	Detail
a	MarketNet	pdrBatcher	pdrBatcher summary
b		Error Logs	pdrBatcher error log Shows the total count of ERROR and WARN level messages for the last 5 days.
c		Connectivity	Heartbeat file monitoring
d	Data	pdrLoader	pdrLoader summary
e		Error Logs	pdrLoader error log Shows the total count of ERROR and WARN level messages for the last 5 days.
f		Latest Data	Latest data summary.
g		Performance	Dispatch replication performance. Shows the minimum, average, and maximum end-to-end replication performance of DISPATCHIS summarised per day over the last 5 days. Useful for identifying trends in replication performance.
h		Storage	Database storage summary
i	Quality	Point in time	Market point in time summary. Shows the point in time reconciliation for each market, indicating up to when the pdrLoader assessed data completeness.
j		Missing Data	Manifest status summary. Shows the current manifest status, allowing identification of any data completeness issues. A large number of MISSING transactions indicates data quality problems.
k		Request Type	pdrLoader request type. Shows the count of requests generated by the pdrLoader back to AEMO's systems over the last 5 days ◦ Manifest requests are part of normal operation. ◦ Archive requests indicate missing data.
l		Request Status	pdrLoader request status. Shows the status of request responses received as a result of requests to AEMO's systems over the last 5 days.

Reference	Section	Measure	Detail
			○ SUCCESS is the normal operational status. ○ REJECTED or TIMEOUT may indicate configuration or system problems.

6. Shows the system status for the for the last 5 days.



Data Interchange settings

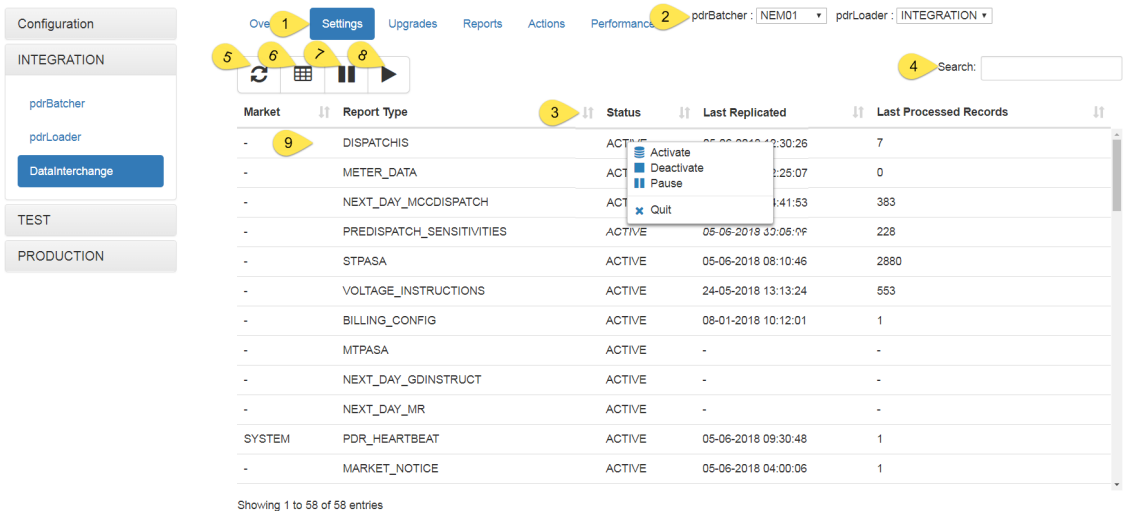
The Settings tab shows the current data replication configuration and settings.

Viewing Data Interchange settings

1. Login to pdrMonitor, click a system name, click DataInterchange, and then click Settings.
2. Select the pdrBatcher and pdrLoader you want to see the settings for.
3. The Settings interface displays with the status at the report level:

Status: ACTIVE = enabled for loading, INACTIVE = configured for processing but not loading to the Data Model tables, PAUSED = configured not to process but held in the pdrLoader reports directory until you change the status. This can be useful to stop temporarily loading a particular report type to allow maintenance on the database.
To change the status, right-click the status for the Report Type and select a new status.

3. To find a specific Report Type, enter the criteria in the Search filter.
4. To reload the table with the latest information, click the refresh button.
5. To switch to Data Model table view, click the grid button. For details about the table view, see Data Interchange table view.
6. To pause replication for all reports, click the pause button.
7. To resume replication for all reports, click the play button.
8. To modify a report, double-click a row. For details about report configuration, see Data Interchange report configuration.



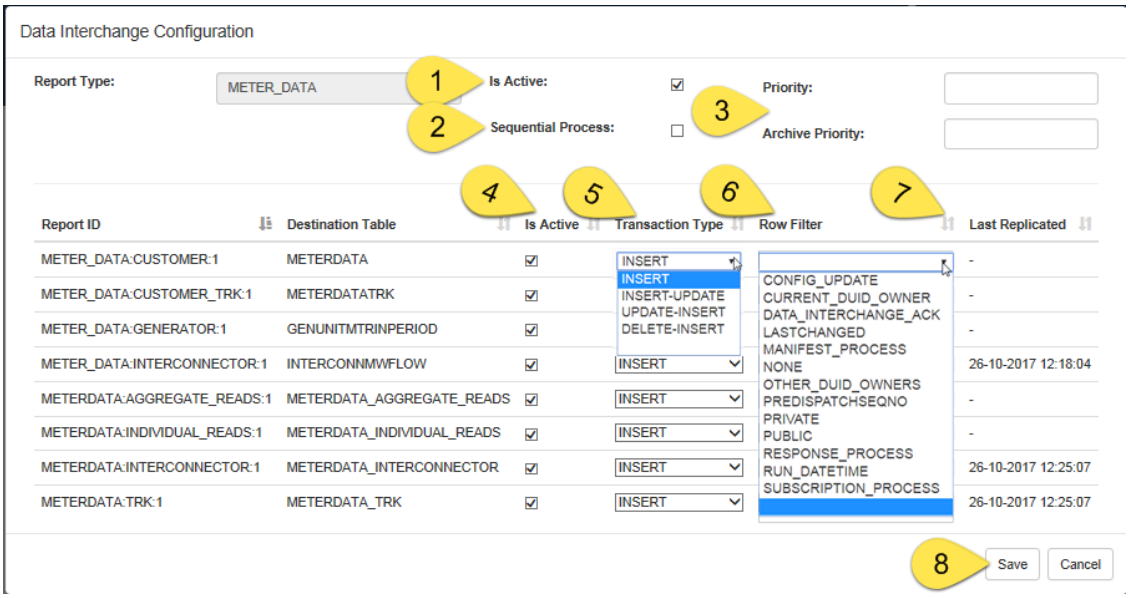
Data Interchange report configuration

Double-clicking a row in the in the Data Interchange Settings interface displays the report edit window where you can configure reports and associated report records.

You can make the following changes:

1. Inactivate a Report Type or Report ID.
2. Activate Sequential Process settings.

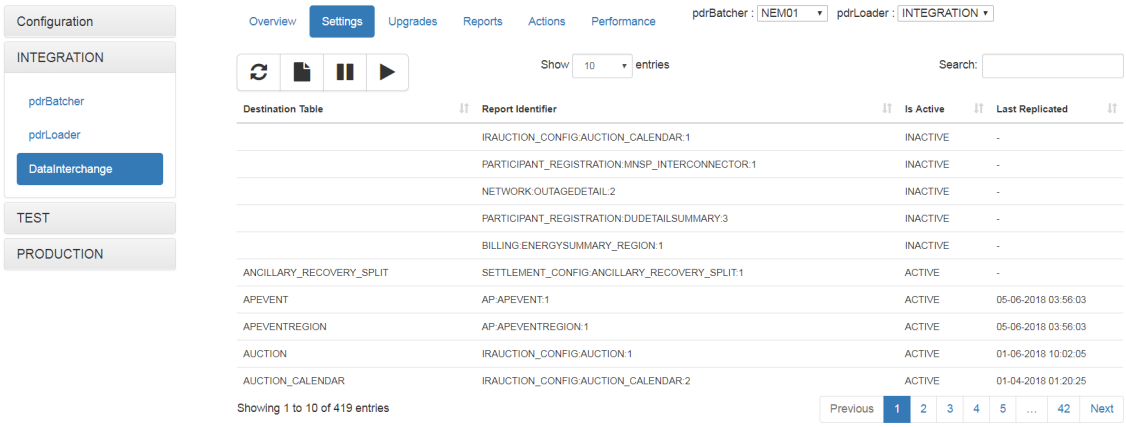
3. Add report loading priorities.
4. Inactivate a Report Type or Report ID (same as 1).
5. Modify the Transaction Type.
6. Modify the row filter.
7. Sort by all column headings.
8. Click Save, to keep the configuration changes.
   Alternatively, click Cancel to discard the changes.



Data Interchange table view

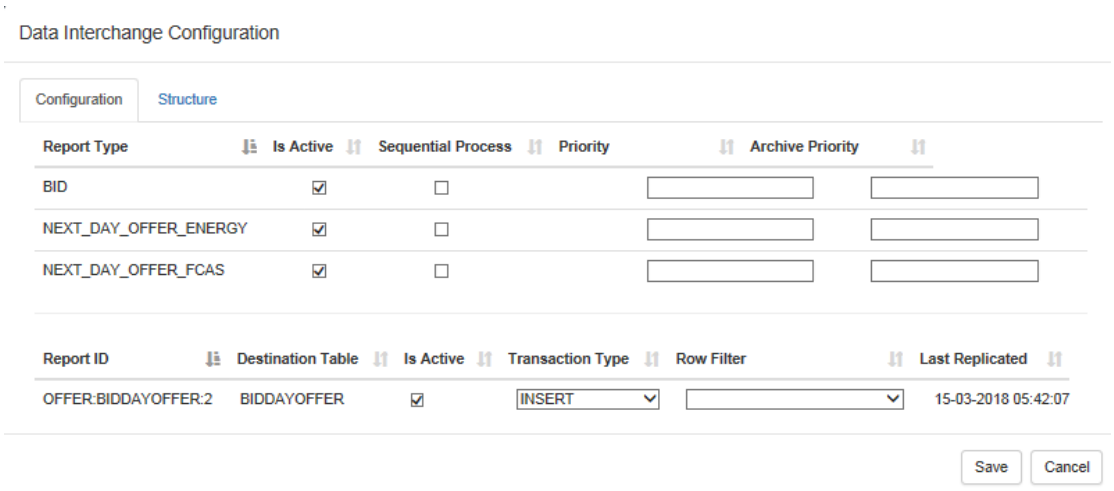
Clicking the grid button from report view displays the Data Model table view. For help with the fields, see Data Interchange settings.

To modify a table's configuration, double-click the row. For help, see Data Interchange configuration.



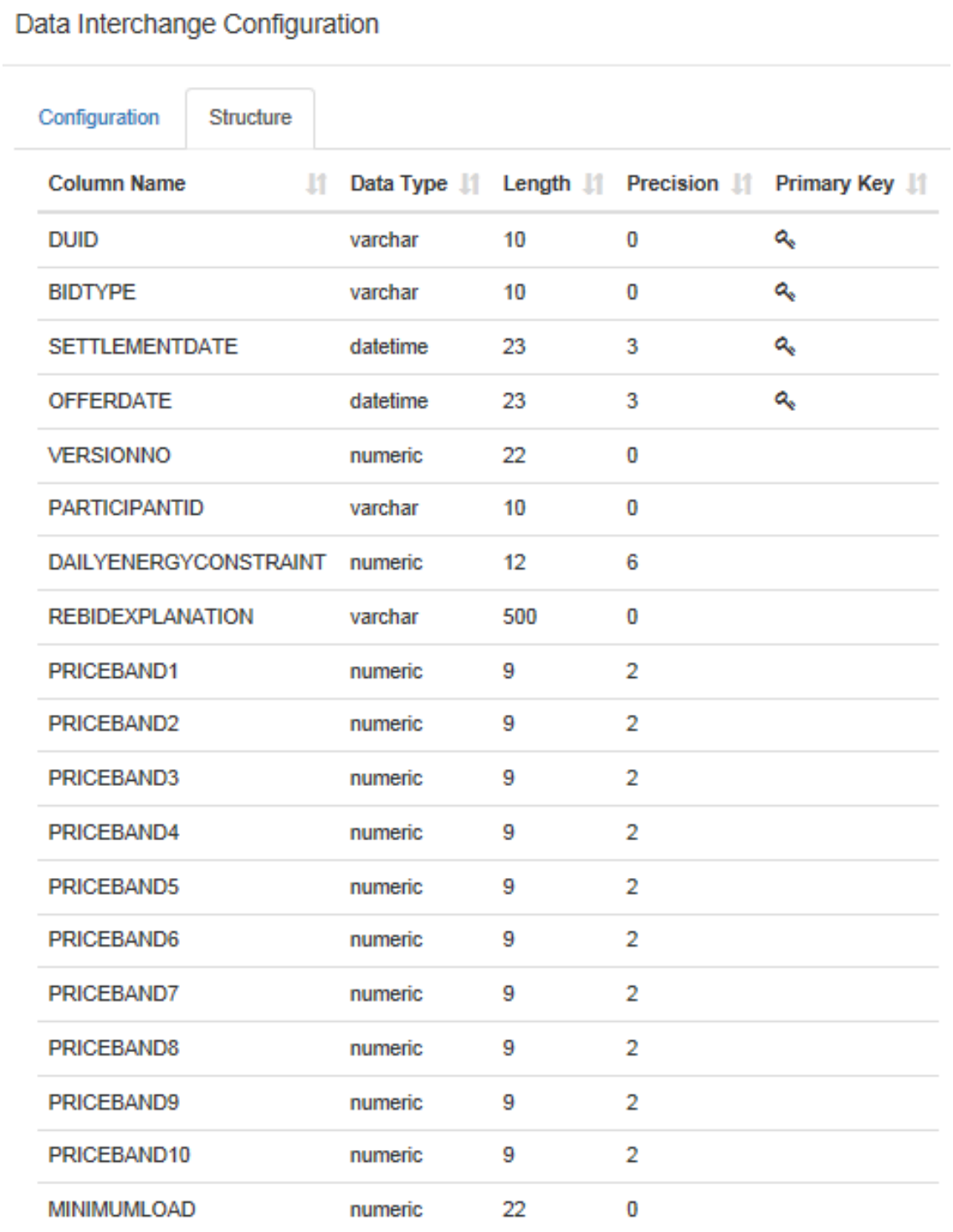
Data Interchange configuration

Double-clicking a row in the Data Interchange table view displays the table configuration window showing all the report and record configurations relevant to the selected table. For help with the fields, see Data Interchange report configuration.



Data Interchange structure

In the Data Interchange Configuration window, click the Structure tab to view the database table structure for the selected table.



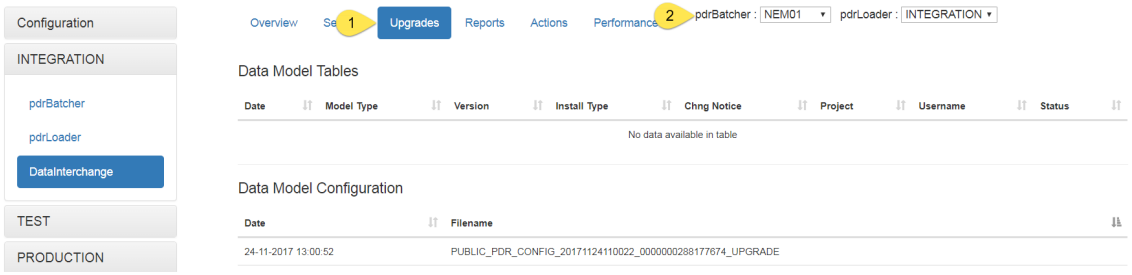
Column Name	Data Type	Length	Precision	Primary Key
DUID	varchar	10	0	
BIDTYPE	varchar	10	0	
SETTLEMENTDATE	datetime	23	3	
OFFERDATE	datetime	23	3	
VERSIONNO	numeric	22	0	
PARTICIPANTID	varchar	10	0	
DAILYENERGYCONSTRAINT	numeric	12	6	
REBIDEXPLANATION	varchar	500	0	
PRICEBAND1	numeric	9	2	
PRICEBAND2	numeric	9	2	
PRICEBAND3	numeric	9	2	
PRICEBAND4	numeric	9	2	
PRICEBAND5	numeric	9	2	
PRICEBAND6	numeric	9	2	
PRICEBAND7	numeric	9	2	
PRICEBAND8	numeric	9	2	
PRICEBAND9	numeric	9	2	
PRICEBAND10	numeric	9	2	
MINIMUMLOAD	numeric	22	0	

Data Interchange upgrades

The Upgrades tab displays the records for Data Model updates applied to the database, including the receipt of the pdrLoader configuration required to support the population of any new tables or report versions.

To view Data Interchange upgrades:

1. Login to pdrMonitor, click a system name, click DataInterchange, and then click Upgrades.
2. Select the pdrBatcher and pdrLoader you want to view.



Data Interchange reports

From the Reports tab you can generate a range of pre-defined reports to understand your Data Interchange system status.

To view Data Interchange reports:

1. Login to pdrMonitor, click a system name, click DataInterchange, and then click Reports.
2. Select the pdrBatcher and pdrLoader you want to report on.
3. Click the Start and End Dates and select dates from the date picker.
4. Select the Report ID and click Submit to view the report. For help with the Report ID, see Table 2.

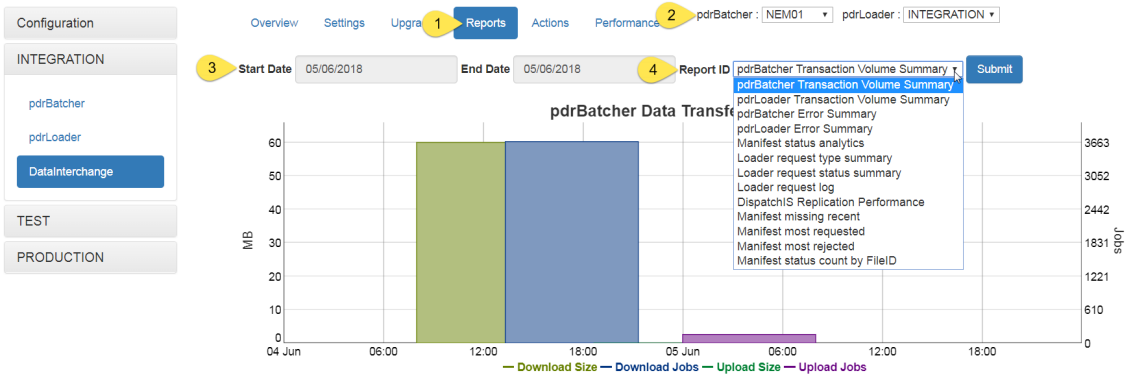


Table 2 Report summary

This table provides a description of each report ID.

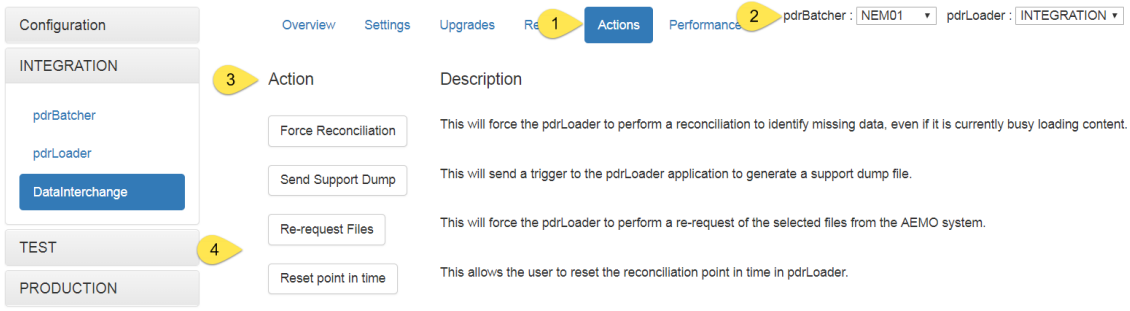
Report ID	Description
DispatchIS Replication Performance	Performance of DispatchIS replication
Loader Request Log	A summary of requested files
Loader Request Status Summary	The summary of request responses received by the pdrLoader from AEMO systems for the selected period summarised by count per day
Loader Request Type Summary	The summary of requests generated by the pdrLoader to AEMO systems for the selected period summarised by count per day
Manifest Missing Recent	Most recent reports detected as MISSING
Manifest Most Rejected	The most re-requested and rejected reports by AEMO systems
Manifest Most Requested	The most often re-requested reports
Manifest Status Analytics	A pivot table report for reporting on the pdrLoader manifest status
Manifest status count by FileID	A summary of the manifest status by File ID
pdrBatcher Error Summary	The count of WARN and ERROR level messages per day for the selected period.
pdrBatcher Transaction Volume Summary	pdrBatcher Data Transfer Volumes
pdrLoader Error Summary	The count of WARN and ERROR level messages per day for the selected period.

Data Interchange actions

From this interface you can perform several control actions against the applications.

To perform an action:

1. Login to pdrMonitor, click a system name, click DataInterchange, and then click Actions.
2. Select the pdrBatcher and pdrLoader you want to perform the action on.
3. Select one of the following actions:
   a. Force Reconciliation: Forces the pdrLoader to perform a data reconciliation to identify missing data.
   b. Send Support Dump: Requests the pdrLoader to generate a support dump file for sending to AEMO's Support Hub for analysis.
   Any Data Interchange support requests must include this file.
   c. Re-request Files: Force the pdrLoader to perform a re-request of selected report types and tables from AEMO's system.
   d. Reset point in time: Resets the pdrLoader reconciliation for a selected market and time.



Data Interchange performance

From the Performance tab you can generate end-to-end replication performance graphs for selected report types over a date range.

To generate a performance graph:

1. Login to pdrMonitor, click a system name, click DataInterchange, and then click Performance.
2. Select the pdrBatcher and pdrLoader you want to report on.

3. Click the Start and End Dates and select dates from the date picker.
4. Select the File ID and click Submit.
5. The performance graph displays. For help with the graph legend, see Table 3.
6. To see the chart values in the legend, hover your cursor over the graph.

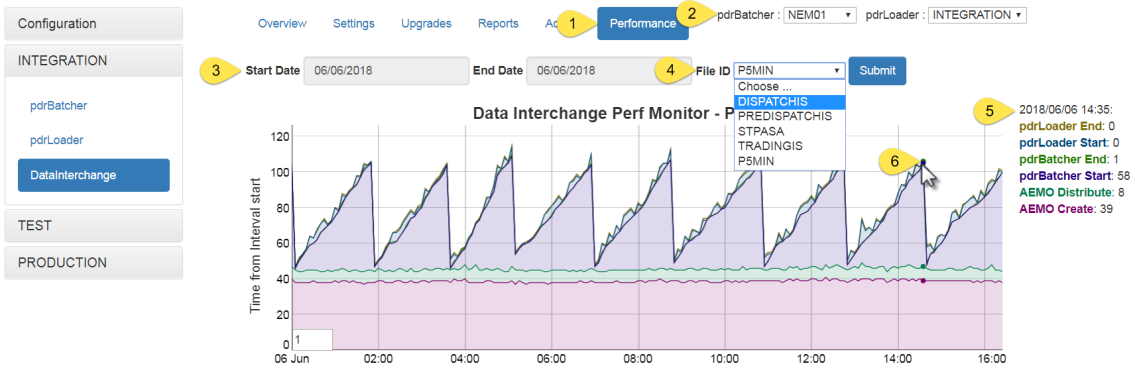


Table 3 Graph legend explanation

State	Description
AEMO Create	The time in seconds between the start of the dispatch interval and when AEMO's system has calculated a solution and generated a report
AEMO Distribute	The time in seconds AEMO's system took to make the report available in the Participant File Server
pdrBatcher End	The time in seconds for pdrBatcher to complete the download of the file
pdrBatcher Start	The time in seconds between the file being available in the Participant File Server and pdrBatcher starting to download the file. Typically related to the polling cycle.
pdrLoader End	The time in seconds for pdrLoader to have processed the report and committed the data to the data model tables.
pdrLoader Start	The time in seconds between the file being available to pdrLoader and when pdrLoader commenced processing the report.

Chapter 6 Database Tables

Entity-relationship diagram

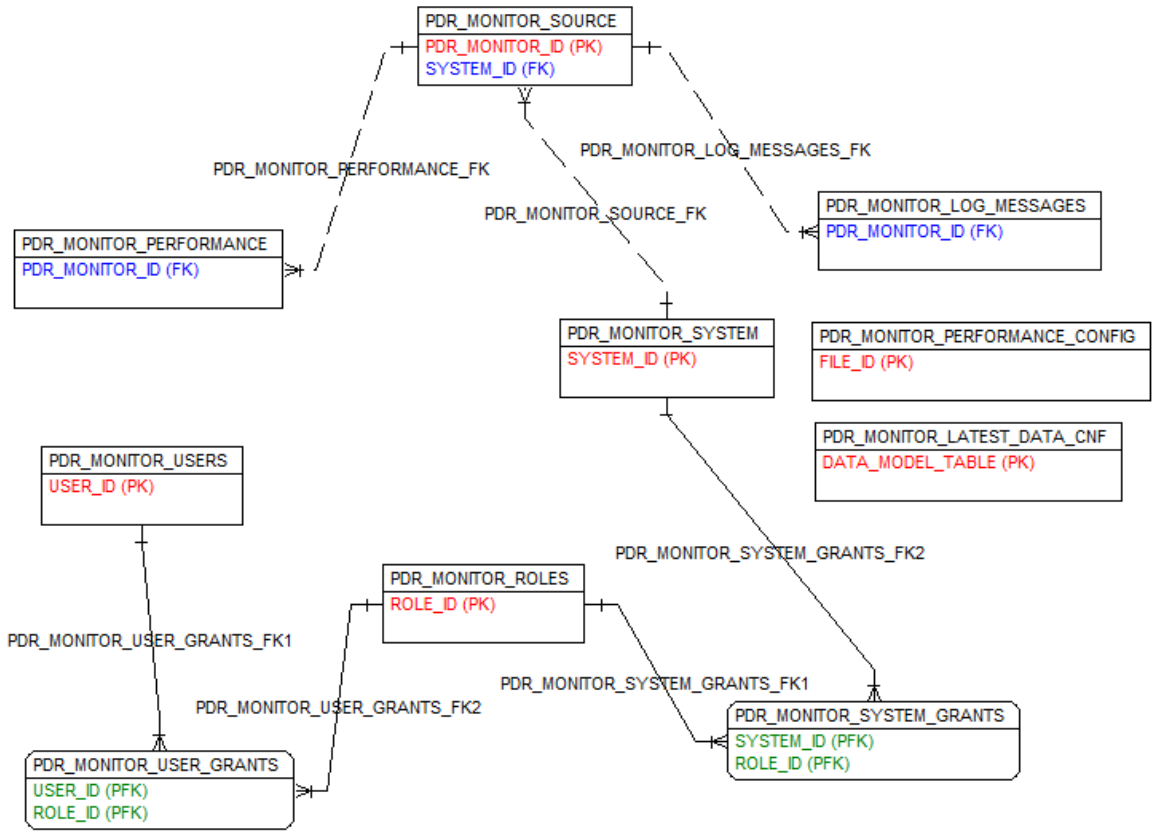


Table descriptions

PDR_MONITOR_LATEST_DATA_CNF

The PDR_MONITOR_LATEST_DATA_CNF table contains the configuration of business cycles and end-to-end delivery SLA for specific data model tables.

The primary source of data for this table is SQL (for manual updates).

Primary Key

- DATA_MODEL_TABLE

Table 4 PDR_MONITOR_LATEST_DATA_CNF contents

Name	Data Type	Length	Comment
DATA_MODEL_TABLE	Varchar2	40	The data model table to query
COLUMN_NAME	Varchar2	30	The column to query in this table, should be of type DATE
DESCRIPTION	Varchar2	60	The description of this configuration
BUSINESS_CYCLE_MINS	Integer		The business cycle for this process in minutes
IS_ACTIVE	Integer		1 if the configuration is active, 0 otherwise
DISPLAY_PRIORITY	Integer		The display order for this configuration

PDR_MONITOR_LOG_MESSAGES

The PDR_MONITOR_LOG_MESSAGES table contains log messages from Data Interchange applications.

This table is populated by the pdrMonitor as log details are retrieved from Data Interchange applications.

Index

- PDR_MONITOR_ID
- TRANSACTION_ID
- EVENT_DATE
- PDR_MONITOR_ID

Table 5 PDR_MONITOR_LOG_MESSAGES contents

Name	Data Type	Length	Comment
PDR_ MONITOR_ID	Integer		The monitor collector identifier
TRANSACTION_ ID	Varchar2	40	Unique transaction identifier
EVENT_DATE	Date		The event date time of this log message
THREAD_ID	Varchar2	50	The application thread that logged this event
LOG_LEVEL	Varchar2	10	The logging level for this message. Valid entries are ERROR and WARNING
LOG_MESSAGE	Varchar2	1000	The Log message associated with this record

PDR_MONITOR_PERFORMANCE

The PDR_MONITOR_PERFORMANCE table contains performance data from Data Interchange applications.

This table is populated by the pdrMonitor as performance details are retrieved from Data Interchange applications.

Index

- PDR_MONITOR_ID
- TRANSACTION_ID
- PDR_MONITOR_ID
- START_DATE
- END_DATE
- PDR_MONITOR_ID
- INTERVAL_END_DATE
- FILE_ID
- PDR_MONITOR_ID
- FILE_NAME

Table 6 PDR_MONITOR_PERFORMANCE contents

Name	Data Type	Length	Comment
PDR_MONITOR_ID	Integer		The monitor collector identifier
TRANSACTION_ID	Varchar2	40	Unique transaction identifier
START_DATE	Date		The start processing datetime
END_DATE	Date		The end processing datetime
DATA_SOURCE	Varchar2	20	The data source associated with this performance record
CONTENT_ CREATION_DATE	Date		The content creation date time associated with this performance record
INTERVAL_END_ DATE	Date		The interval end date for the performance assessment
THREAD_ID	Varchar2	50	The application thread that processed this event
FILE_ID	Varchar2	40	The unique file identifier
CONFIDENTIALITY	Varchar2	30	The confidentiality of the file, PUBLIC or PRIVATE
FILE_NAME	Varchar2	100	The filename associated with this performance record
FILE_EXTENSION	Varchar2	10	The type of file, the filename extension
JOB_TYPE	Varchar2	30	The type of Job. For pdrBatcher, values are DOWNLOAD, UPLOAD For pdrLoader, values are TRANSACTIONAL. BACKFILL
JOB_SIZE	Integer		The size of this job. Units of measure are defined in the JOB_SIZE_UNITS column
JOB_SIZE_UNITS	Varchar2	10	The size units for this performance record. Valid values are BYTES and ROWS

PDR_MONITOR_PERFORMANCE_CONFIG

The PDR_MONITOR_PERFORMANCE_CONFIG tables contains the configuration for end to end delivery SLA for a range of datasets to be monitored.

The primary source of data for this table is SQL (for manual updates).

Primary Key

- FILE_ID

Table 7 PDR_MONITOR_PERFORMANCE_CONFIG contents

Name	Data Type	Length	Comment
FILE_ID	Varchar2	40	The unique file identifier
INTERVAL_ITEM_IN_FILENAME	Integer		The part of the filename after being split by _ which contains the interval date time for performance assessment
BUSINESS_CYCLE_MINS	Integer		The business cycle for this process in minutes
END_TO_END_SLA	Integer		The end to end data replication SLA in seconds

PDR_MONITOR_ROLES

The PDR_MONITOR_ROLES table contains the list of roles that can be used for permissioing access in the PDR monitor system.

This table content is managed within the PDR monitor user interface.

Primary Key

- ROLE_ID

Table 8 PDR_MONITOR_ROLES contents

Field Name	Data Type	Length	Comment
ROLE_ID	Varchar2	30	The unique role identifier
IS_ACTIVE	Integer		If the role is currently active then 1, otherwise 0

PDR_MONITOR_SOURCE

The PDR_MONITOR_SOURCE table contains configuration data for access to the pdrBatcher and pdrLoader applications and associates these instances with a system identifier.

This table content is managed within the PDR monitor user interface.

Primary Key

- PDR_MONITOR_ID

Table 9 PDR_MONITOR_SOURCE contents

Name	Data Type	Length	Comment
PDR_ MONITOR_ ID	Integer		The monitor collector identifier
SYSTEM_ID	Varchar2	30	The system identifier associated with this application
HOSTNAME	Varchar2	40	The hostname on which this application is running
INSTANCE_ ID	Varchar2	30	The unique instance identifier for this application instance
APP_NAME	Varchar2	30	The name of the application associated with this data source
APP_ VERSION	Varchar2	30	The version of the application associated with this data source
LAST_ ACTIVE	Date		The datetime at which this last source was last active
PORT	Integer		The port number for web service communication
API_KEY	Varchar2	30	The API key for web service communication security
IS_ACTIVE	Integer		Identifies if this source is currently active and should be polled for updates. Valid entries are: 1 = Active 0 = Inactive

PDR_MONITOR_SYSTEM

The PDR_MONITOR_SYSTEM table contains a list of Data Interchange system identifiers that are configured for this PDR monitor instance .

This table content is managed within the PDR monitor user interface.

Primary Key

- SYSTEM_ID

Table 10 PDR_MONITOR_SYSTEM contents

Name	Data Type	Length	Comment
SYSTEM_ID	Varchar2	30	The unique system identifier
IS_ACTIVE	Integer		1 if the system is active, 0 otherwise

PDR_MONITOR_SYSTEM_GRANTS

The PDR_MONITOR_SYSTEM_GRANTS table associates user roles to specific systems.

This table content is managed within the PDR monitor user interface.

Primary Key

- SYSTEM_ID
- ROLE_ID

Table 11 PDR_MONITOR_SYSTEM_GRANTS contents

Name	Data Type	Length	Comment
SYSTEM_ID	Varchar2	30	The unique system identifier
ROLE_ID	Varchar2	30	The unique role identifier
CAN_VIEW	Integer		Is set to true (1) if the associated role can view this Data Interchange system, otherwise 0
CAN_ CONFIGURE	Integer		Is set to true (1) if the associated role can configure this Data Interchange system, otherwise 0
SOURCE_ COLUMN	Varchar2	40	The name of the column in the input file
DESTINATION_ COLUMN	Varchar2	40	The name of the column in the destination table
TRANSFORM_ TYPE	Varchar2	20	The data transform to apply to the file input data to get the data to insert into the local database

PDR_MONITOR_USER_GRANTS

The PDR_MONITOR_USER_GRANTS table assigns the role permissions to users.

This table content is managed within the PDR monitor user interface.

Primary Key

- USER_ID
- ROLE_ID

Table 12 PDR_MONITOR_USER_GRANTS contents

Name	Data Type	Length	Comment
USER_ID	Varchar2	30	Unique user identifier
ROLE_ID	Varchar2	30	Unique Role identifier
IS_ACTIVE	Integer		1 if the role grant is active, 0 otherwise

PDR_MONITOR_USERS

The PDR_MONITOR_USERS table contains the list of users who are configured for access to the PDR monitor system.

This table content is managed within the PDR monitor user interface.

Primary Key

- USER_ID

Table 13 PDR_MONITOR_USERS contents

Name	Data Type	Length	Comment
USER_ID	Varchar2	30	The unique user identifier
PASSWORD	Varchar2	80	The encrypted password
IS_ACTIVE	Integer		1 if the user is active, 0 otherwise

Chapter 7 Needing Help

Related resources

You can find resources on AEMO's website.

Data Interchange Framework and Glossary: explains Data Interchange components, terms, abbreviations, and provides important upgrade information. Read this guide in conjunction with other guides in the Data Interchange set and the release schedules and technical specifications relevant to Data Interchange and the Data Model.

Concise Guide to Data Interchange: assists participants to understand AEMO's Data Interchange software, describing how to set up a standard Data Interchange environment to replicate data between AEMO's wholesale energy market systems and participants' local DBMS conforming to the Electricity or Gas Data Models.

Guide to Troubleshooting Data Interchange, provides assistance with troubleshooting Data Interchange issues.

Participant Data Replication Monitor GUI Installer: software to install the pdrMonitor.

Participant Data Replication Monitor GUI Installer Guide: assists participants to install the pdrMonitor software.

Data Interchange software and resources

You can find Data Interchange software and associated documentation in the following locations:

1. Releases directory on the participant file share: FTP to 146.178.211.25 > Data Interchange, pdrBatcher, pdrLoader, or Replication Manager.
2. Data Subscription web application in the energy market systems web portal:

- Production: https://portal.prod.nemnet.net.au
- Pre-production: https://portal.preprod.nemnet.net.au

3. Electricity or gas IT Systems web pages on AEMO's website.

The following resources may also be useful:

Java SE Downloads,
http://www.oracle.com/technetwork/java/javase/downloads/index.html

Troubleshooting

Installation

For best installation results use the pdrMonitor GUI installer software.

Ensure the Java Runtime Environment (JRE) 8 is available. There are known compatibility issues with the Microsoft SQL Server JDBC driver with later versions of JRE.

Connection

For best connection results use the interface in the pdrMonitor GUI installer software to manage pdrMonitor configuration.

Problems with pdrMonitor connecting to Data Interchange applications:

1. Check the times on the server running the pdrMonitor and the application server are synchronised. You can override this security feature by configuring the properties in the pdrBatcher or pdrLoader Properties file.
2. Confirm the pdrMonitor configuration is correct. Check the hostname, port, and API key is matching the application.
3. Check the application log file for the application to see why the connection was refused.
4. From the command line, check the firewall rules by performing a connectivity check from the pdrMonitor host, for example:
telnet <di_application_host> <di_application_port>.

Problems connecting to the pdrMonitor web browser:

1. Use the command line facility in pdrMonitor to reset the user's password:
pdrMonitorPasswordReset.bat <user_name> <new_password>.
2. Try bypassing any web proxy and connecting directly.

3. All content is served with browser directives not to cache, so caching should not be an issue but try clearing the cache and restarting the web browser.
4. As a last resort, try restarting the pdrMonitor application.

Data integrity

pdrMonitor data not up to date:

1. Check pdrMonitor dashboard for status information.
2. Check pdrMonitor application log file for ERROR messages.
3. Check pdrMonitor database is not full (consider adjusting data retention parameters in XML config to keep the database pruned).
4. Check the Performance subfolder on the target application to see if there is a data backlog waiting to load into the pdrMonitor.
5. Ensure the target application does not have a processing backlog or has lost connectivity with its process inputs.

AEMO's Support Hub

IT assistance is requested through one of the following methods:

- Phone: 1300 AEMO 00 (1300 236 600)

  For non-urgent issues, normal coverage is 8:00 AM to 6:00 PM on weekdays, Australian Eastern Standard Time (AEST).

- Email: supporthub@aemo.com.au

AEMO recommends participants call AEMO's Support Hub for all urgent issues.

Information to provide

Please provide the following information when requesting assistance from AEMO:

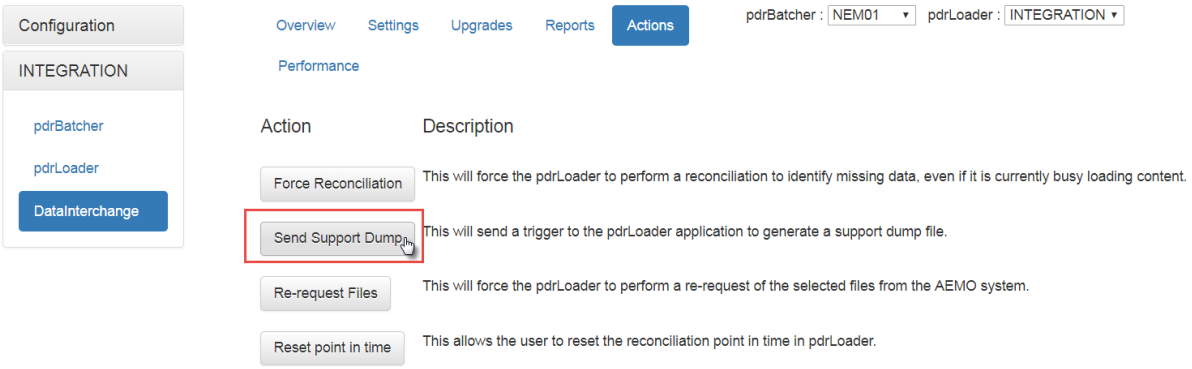
- Your name
- Organisation name
- Participant ID
- System or application name
- Environment: production or pre-production

- Problem description
- Screenshots

For AEMO software-related issues please also provide:

- Version of software.
- Properties or log files.
- Support dump and Data Interchange instance name (if Data Interchange problem).

  If you are using pdrMonitor, you can send a support dump directly to AEMO:



Feedback

Your feedback is important and helps us improve our services and products. To suggest improvements, please contact AEMO's Support Hub.

Index