



MMS Data Model v5.3_PreRelease Release Notes

MMS Data Model version 5.3

2 February 2024

Important Notice

PURPOSE

This MMS Data Model v5.3_PreRelease Release Notes, prepared by the Australian Energy Market Operator (AEMO), provides guidance for the Gas or MMS Data Model under the National Electricity Rules or National Gas Rules (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, Windows and SQL Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

UNIX is a registered trademark of The Open Group in the US and other countries.

© 2015 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

DISTRIBUTION

Available to the public.

DOCUMENT IDENTIFICATION

Business custodian:

IT custodian: Data Model Developer

Prepared by: AEMO Technology

Last update: Friday, 2 February 2024 5:38 PM

VERSION HISTORY

Updated with AEMO branding and style

DOCUMENTS MADE OBSOLETE

The release of this document changes only the version of MMS Data Model v5.3_PreRelease Release Notes.

FEEDBACK

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

Contents

Introduction	1
FTP access	1
Release location	1
Guides	1
Data Model v5.3_PreRelease Schedule.....	1
Data Model v5.3 Schedule	1
Important Information	2
DM 5.3_PreRelease Upgrade	5
DM 5.3_PreRelease Upgrade steps	5
Historical Data Migration	7
BIDOFFER_TRANSITION stored procedures	9
Database versions supported	11

Introduction

FTP access

Pre-production: 146.178.211.25

Release location

Pre-production FTP:

`\Releases\MMS Data Model\PreProduction\v5.3_PreRelease`

Guides

Tech Spec location- [EMMS - Technical Specification - Data Model v5.3 - March 2024 \(aemo.com.au\)](#)

Data Model v5.3_PreRelease Schedule

- Pre-production: 02nd February 2024
- Production: 27th February 2024

Data Model v5.3 Schedule

- Pre-production: 13th March 2024
- Production: 10th April 2024

Important Information

1. Data Model 5.3_PreRelease contains changes to BIDS package only. Primary Key on below tables is modified to include DIRECTION column. Pre-Release is planned to allow participant systems for early transition of historical data to this new bidding structure ahead of the IESS market readiness.

- BIDDAYOFFER
- BIDDAYOFFER_D
- BIDOFFERPERIOD
- BIDPEROFFER_D

2. These tables are populated by below reports. The current and the legacy version of these reports are updated to include the DIRECTION column. This ensures new tables created in DM 5.3_PreRelease are populated with DIRECTION column values.

- BIDMOVE_COMPLETE
- BIDOFFERFILETRK
- BIDOFFERFILETRK_LEGACY
- BID_LEGACY
- NEM_BIDS
- NEXT_DAY_OFFER_ENERGY
- NEXT_DAY_OFFER_ENERGY_LEGACY
- NEXT_DAY_OFFER_FCAS
- NEXT_DAY_OFFER_FCAS_LEGACY
- NEXT_DAY_OFFER_ENERGY_SPARSE
- NEXT_DAY_OFFER_FCAS_SPARSE

3. 'Data Subscription' upgrades are NOT required for DM 5.3_PreRelease upgrade as existing reports are modified to include DIRECTION column.

4. Participants currently on the latest version of Data Model v5.2 can upgrade to the Data Model v5.3_PreRelease.
5. For BIDDAYOFFER and BIDOFFERPERIOD tables, PreRelease data model upgrade will additionally create two new parallel tables as BIDDAYOFFER_DM53 and BIDOFFERPERIOD_DM53 respectively with DIRECTION column added.
6. These tables are added to run in parallel (Parallel table run) together with BIDDAYOFFER and BIDOFFERPERIOD till the time participants are satisfied with the data before deciding to switch over.
7. To enable this 'Parallel table run' participants will have to manually apply below pdrLoader config from release location before applying the upgrade.

MMS_Data_Model_pdrLoader_Configuration_preproduction_v5.3_PreRelease

8. Participants participating actively in the bidding systems will need to follow below steps to ensure latest forward bids are available. Other participants can choose to skip this step.
9. Apply forward bid offers from below location using pdrLoader during 'Parallel table run' mode of the upgrade (over 02 trading days). This is to ensure latest forward bid offers are available (if applicable) on _DM53 tables.

\Import\BASELINE

10. To load all versions of forward bid offers participants can run the stored procedure 'insert_FORWARD_bidoffer_PreRelease' from MMSDM_Bidoffer_Transition folder.
11. Participants need to ensure that they are satisfied with bidding data populated in the newly added BIDDAYOFFER_DM53 and BIDOFFERPERIOD_DM53 tables.
12. After checking, participants can run the switching script which will rename tables as below:

Source Table	Renamed to
BIDDAYOFFER	BIDDAYOFFER_PRE53
BIDOFFERPERIOD	BIDOFFERPERIOD_PRE53
BIDDAYOFFER_DM53	BIDDAYOFFER
BIDOFFERPERIOD_DM53	BIDOFFERPERIOD

13. DM5.3 Pre-Release upgrade is finally completed after the above step.
14. Since the Bidding tables contains very large data sets, participants will either need to ensure there is sufficient space in the database to keep the duplicate copy of data during migration or need to remove data from the source table after each batch has been committed into the target table.
15. Along with Data Model upgrade Pre-release installers, AEMO will also provide Oracle-package/SQLserver-procedures to help transitioning legacy bid offer data to this new table structure.

DM 5.3_PreRelease Upgrade

DM 5.3_PreRelease Upgrade steps

- Check your installed Data Model version by running the below query in your database. Prerequisite is Data Model 5.2.

```
select a.installation_date,a.install_type,a.script_version from  
mms_data_model_audit a order by a.installation_date desc ;
```

- Pre-release upgrade steps as below:

1. Apply pdrLoaderConfig by placing below file release location in pdrLoader\Reports directory

MMS_Data_Model_pdrLoader_Configuration_preproduction_v5.3_PreRelease.zip

2. Ensure the above config file is loaded by querying pdr_reports_records table.

```
select * from pdr_report_records t where t.destination_table in  
( 'BIDDAYOFFER_DM53', 'BIDOFFERPERIOD_DM53' );
```

3. Stop pdrLoader application.
4. Apply below Data Model 5.3 PreRelease using Data Model Manager as standard upgrade installation.

MMSDM_upgrade_v5.3_PRE.zip

5. When Data Model upgrade is successfully applied, start pdrLoader for business continuity. New bid offer data will be inserted to both legacy/new bid offer tables in 'Parallel table run' mode.
6. Participants participating actively in the bidding systems will need to follow below steps to ensure latest forward bids are available. Other participants can choose to skip this step.

- a. Participants will need to populate the FORWARD bid offers manually by placing the forward bid offer baseline file from Import\BASELINE directory (if applicable).
- b. Wait for the next BASELINE file and repeat loading the same to cover any gap between the generation of the baseline applied.
- c. To load all versions of forward bid offers before the switch participants can run the below stored procedure. This procedure copies data from 'legacy BIDOFFER' tables to new _DM53 tables.

File- MMSDM_Bidoffer_Transition

Procedure- insert_FORWARD_bidoffer_PreRelease

For SQLSERVER, please adjust the database before running the scripts.

7. Apply necessary access privileges to BIDDAYOFFER_DM53 and BIDOFFERPERIOD_DM53 tables (same as for BIDDAYOFFER and BIDOFFERPERIOD tables). This is to ensure other user applications have access to these new tables once the upgrade is finally completed by using table rename scripts.
8. Check and verify data on _DM53 tables are up to date.
9. Stop the pdrLoader application.
10. Complete the final step of DM5.3_PreRelease upgrade by running the "Switch_Bidoffer_Table_Names.sql" script manually from the releases location from below file:

MMSDM_Switch_Bidoffer_Table_Names.zip

11. At the conclusion of this phase, we have transitioned the operational dependencies to the new structures, which are populated with all forward offers and have a short history of NEXT_DAY bid offer data.
12. Start the pdrLoader application to load bid offer data to new tables.
13. Provided BIDOFFER_TRANSITION package/procedures can be used to copy data from _PRE53 tables with calculated DIRECTION values to

the new tables. As these tables consists large data sets, participants will need to engage a DBA resource to assist.

14. BIDDAYOFFER_D and BIDPEROFFER_D table are not required for parallel run. Therefore, renamed and new empty tables are created as per DM5.3 format during the prerelease upgrade.

Historical Data Migration

- Use the provided BIDOFFER_TRANSITION package/procedures.

Option1:

Update the DIRECTION column values on historical data in _PRE53 tables using BIDOFFER_TRANSITION 'update' package/procedures. Choose the most recent date range for the update so the most recent data can be migrated to the new DM5.3 table first. Database expdp/impdp, bcp tools can be used to export/import.

Relevant procedures:

update_direction_bidoffer (updates the DIRECTION column on BIDDAYOFFER_PRE53, BIDOFFERPERIOD_PRE53 tables.)

update_direction_bidoffer_D (updates the DIRECTION column on BIDDAYOFFER_D_PRE53, BIDPEROFFER_D_PRE53 tables.)

Option2:

Inserts the data into new tables with calculated DIRECTION values using data available in _PRE53 tables. Use BIDOFFER_TRANSITION 'insert' package/procedures. Choose the most recent date range history for the insert so the most recent data can be migrated to the new tables.

Relevant procedures:

insert_bidoffer (inserts data into BIDDAYOFFER, BIDOFFERPERIOD tables with calculated DIRECTION values using data available in BIDDAYOFFER_PRE53, BIDOFFERPERIOD_PRE53 tables.)

insert_bidoffer_D (inserts data into BIDDAYOFFER_D, BIDPEROFFER_D tables with calculated DIRECTION values using data available in BIDDAYOFFER_D_PRE53, BIDPEROFFER_D_PRE53 tables.)

- It is important for participants to apply the most recent PUBLIC_PARTICIPANT_REGISTRATION_BASELINE using pdrLoader to ensure registration data in DUDETAIL is up-to-date prior to the execution of BIDOFFER_TRANSITION procedures
- Participants need to install the BIDOFFER_TRANSITION package/procedures using the scripts provided.

Oracle: procedures are created with package BIDOFFER_TRANSITION

SQLServer: individual procedures are created.

Below is the summary on the packages/procedures. Performance statistics provided below are based on the smaller data sets.

Stored Procedure Name	Functionality	Oracle performance	SQL server performance
insert_bidoffer	Inserts data into the new DM5.3 compliant BIDDAYOFFER/BIDOFFERPERIOD tables using the data on existing DM5.2 compliant BIDDAYOFFER_PRE53/BIDOFFERPERIOD_PRE53 tables.	11 min/Day 27 million rows/Day	8 min/Day 27 million rows/Day
update_direction_bidoffer	Updates DIRECTION column value on DM5.2 compliant BIDDAYOFFER_PRE53/BIDOFFER_PRE53 tables. Once the DIRECTION column values are updated data can be copied to new DM5.3 tables using expdp/impdp, bcp	3.5 min/Day 27 million rows/Day	2.5 min/Day 27 million rows/Day
insert_bidoffer_D	Inserts data into the new DM5.3 compliant BIDDAYOFFER_D/BIDPEROFFER_D tables using the data on existing DM5.2 compliant BIDDAYOFFER_D_PRE53/BIDPEROFFER_D_PRE53 tables	20 sec/Day 0.4 million rows/Day	20 sec/Day 0.4 million rows/Day
update_direction_bidoffer_D	Updates DIRECTION column value on DM5.2 compliant BIDDAYOFFER_D_PRE53/BIDPEROFFER_D_PRE53 tables. Once the DIRECTION column values are updated data can be copied to new DM5.3 tables using expdp/impdp, bcp	5 sec/Day 0.4 million rows/Day	10 sec/Day 0.4 million rows/Day

- Participants need to review these stored procedures and review their database structures before running these.
- Recreate any database statistics on the newly created tables to ensure optimal query execution plans.

BIDOFFER_TRANSITION stored procedures

Installation:

1. Download the Bidoffer_Transition_*.zip Installer from Releases location.

Oracle: Bidoffer_Transition_Oracle.zip

SQLServer: Bidoffer_Transition_SQLServer.zip

2. Unzip to a local directory and run following scripts to create the package/procedures in the same schema as Data Model schema (INFOSERVER) of the target database.

Oracle: create_package_BIDOFFER_TRANSITION.sql

create_package_body_BIDOFFER_TRANSITION.sql

SQLserver: create_proc_insert_bidoffer.sql

create_proc_insert_bidoffer_D.sql

create_proc_update_direction_bidoffer.sql

create_proc_update_direction_bidoffer_D.sql

create_proc_insert_FORWARD_bidoffer_PreRelease.sql

(edit the database name in all the SQLSERVER scripts, e.g. use [NEMP])

Execution

Following sql scripts are provided to execute the procedures with necessary parameters. Edit the script for parameters 'StartDate', 'EndDate' and the log file location for the procedures.

1. The maximum period to run the procedures is restricted to 31 days.
2. Check if sufficient tablespace/filegroup space is available for the period to run.
3. Check Archive/redo log space is sufficient. Significant archive logs are generated (even if using NOLOGGING, as index updates are always logged) and some monitoring is required by the DBA.
4. Schedule to run at a suitable non busy time.

Script Name	Procedure call
run_insert_bidoffer.sql	execute procedure insert_bidoffer
run_insert_bidoffer_D.sql	execute procedure insert_bidoffer_D
run_update_direction_bidoffer.sql	execute procedure update_direction_bidoffer
run_update_direction_bidoffer_D.sql	execute procedure update_direction_bidoffer_D

5. Procedure Parameters

Procedure Parameter	data Type	Description
p_start_date	date	start date for the bidoffer transition.
p_end_date	date	End date for the bidoffer transition. (max period 31 days)
p_check_target	varchar2	set value 1 to check if partial data already exists in target table for the date range. (only for insert)
p_nologging	number	set value to 'NOLOGGING' for setting the target table to NOLOGGING and to use insert /*+ APPEND */ Note when NOLOGGING is used, other inserts cannot be applied to target table using pdrLoader.
p_info	varchar2	set value to 'INFO' for detailed log output based on BidType. Note the generated log file will be significantly large if used. Keep as NULL. Use only for 1 day run id detailed logs are required.

Monitoring

1. Monitor available free space on Tablespaces
2. Check on Archive log generation and destination space
3. Schedule Data Migration tasks during non-critical business hours with suitable date range to match with data base resources.
4. If using NOLOGGING make sure the same tables are not loaded via pdrLoader
5. If the DM5.2 tables were using 'table partitioning' use truncate each partition after successfully migrated to the historical data to new tables. (this could help managing space requirements)

Database versions supported

Oracle	Oracle 12c , 19c
MSSQLServer	2014/2017