How to Enable Parallelization for Data Manager Packages and Consolidations
With SAP Planning and Consolidation 10 SP09, you can now load data in parallel, thus speeding up data loading. For example, on our internal HANA system, we loaded 4.5 million and 10.9 million records from an InfoProvider and the load time increased as much as 316% using the Overwrite Mode. The below graph is an actual customer's environment consisting of 15 dimensions including the Cost Center dimension containing 50k members. When importing data using the Overwrite Mode, the process chain first reads the source and applies any transformations and conversions using the Convert step. Then, it writes the data using the Load_IP step. As in this case, we were using the Overwrite Mode meaning the process chain was scanning target data to see if there were similar intersections of data. If so, it would overwrite that record with the source data. If we were doing an Append, the Load_IP would have much faster as it would not have read the target data before inserting the records.

This How To Guide will show the reader how to enable faster data loads, faster Consolidations, and faster data movement (Copy and Move process chains) as well as what to look out for.
ENABLING PARALLELIZATION

First, you will need to review note 1792408 which is the Planning and Consolidation Parallel Execution Framework central note. As stated in the note, the main parameter needed is ENABLE_PARALLEL_EXECUTION which needs to be set to X in transaction SPRO. To do this, type in transaction SPRO in the transaction field.

Click SAP Reference IMG

Navigate to Planning and Consolidation -> Configuration Parameters -> Set Global Parameters and click the Execute icon.
Click the Insert Icon

Insert **ENABLE_PARALLEL_EXECUTION** with a value of X

You can set the other parameters defined in note 1792408 the same way and it is recommended to take all of the defaults until proven otherwise. The other Global parameters are:

- **PARALLEL_SERVER_GROUP** – Name of the server group specifying where to run the DIA processes
- **MAX_SESSION_COUNT** – This controls the maximum number of DIA processes associated with Parallel Execution. The default is 12, but note 1884379, which will be released in SP11, changes the default settings of MAX_SESSION_COUNT from 12 to 2. As stated earlier, having 12 processes running in parallel does not increase performance a great deal unless your data files are extremely large (10+ million rows).
- **BUFFER_ROW_SIZE** – This specifies the amount of data per package or DIA process. The default is 40000 which is what we used.
- **BUFFER_MAX_ROW_SIZE** – This specifies the maximum amount of data per package. This is different than the previous parameter as the BUFFER_ROW_SIZE is setting the minimum or baseline amount
- **REFRESH_STATUS_INTERVAL** – This parameter sets, in seconds, the synchronization between the DIA worker processes and the master DIA process. While the default is 10, we used 4 which worked very well.
- **BUFFER_MAX_PART_COUNT** – Specifies the number of partitions one input buffer and use. The default is 1000 which we used in our internal testing.
- **BUFFER_WAIT_TIME_TO_EXIT** – Specifies in seconds the wait time if no data comes into another process. Again, we used the default of 5 seconds.
- **MONITOR_WAIT_TIME_TO_EXIT** – This parameter specifies how long the main (master) session waits until exiting. The default is 10 which is what we used in our internal testing.

*** Note *** Please be aware of the additional notes 1807063 and 1799073 when implementing the PEF (Parallelization Execution Framework)
Another important SPRO parameter is on Model level.

The parameter RECLEVEL_NR needs to be set at 10 (the default). If this parameter is set greater than 999, the application will be forced into individual row level locking which can overload the enqueue server. If this happens, you will receive an error stating “enqueue_server_busy” during large data loads.

BW Lock/Enqueue Server
After setting the parameters from note 1792408 in transaction SPRO, you may need to modify the BW Lock/Enqueue server settings, based on our recent customer experience. For more information, please refer to note 1594606.

To change the settings, go to transaction RSPLSE
Click on the Lock Table tab
Type “expert” for the transaction code and click Enter. You will notice four options will be available for updating.

To change the values, under the Lock Settings menu, click Display <-> Change. In our testing, we noticed the best performance without locks by setting Lock Attempts to 9 and Wait Time in Seconds to 3.
After you make your changes, click the Save icon (a restart of the system is not needed).

Data Manager Packages
Before you start customizing all of the process chains, you need to know which process chains can take advantage parallelization. The process chains that can take advantage of parallelization are:

- Data Loading
  - /CPMB/LOAD_INFOPROV_UI
  - /CPMB/LOAD_INFOPROVIDER
- Additional Process Chains
  - /CPMB/IMPORT_A_SEND_EMAIL
  - /CPMB/COPY
  - /CPMB/IMPORT USING FTP
  - /CPMB/IMPORT_APPEND
  - /CPMB/APPEND
  - /CPMB/IMPORT
  - /CPMB/MOVE will partially benefit from parallelization

Now that the settings behind the scenes have been set, you will now need to enable Parallelization for the Data Manager process chains. To do this, login to the EPM Add-in and connect to your model. Go to the Data Manager tab and select Organize -> Organize Package List. Since the below script is dynamic and could be different for each model, this modification will need to be done in each environment.
Highlight the process chain you want to change, right-click and select Modify Package. Technically, you can apply this setting for all packages that write data to the fact table, but loading transaction data from an InfoProvider will get the most benefit.

Click Modify Script

![Modify Package dialog box](image)
Click Advanced

Type `PARALLEL_EXECUTION(ON)`. This can either be entered on the first or the last line. I like to put it at the beginning as it will be the first thing I see, but either place will work.

To test this, log in SAP GUI and go to transaction SM66 (this transaction is the same as SM50 except it just shows the active processes).
Go back to the EPM Add-in and run a Data Manager data load package with the correct prompts. After the job starts, you will see in SM66 the number of Max Sessions plus one extra session which controls the worker sessions.

Running the Consolidation Process in Parallel
You can also run your consolidation process in parallel. In order to take advantage of parallelization for consolidations, take a look at the central consolidations note [1794758](#) as well as the related notes:

- [1799073](#) – Dead loop parallel framework output buffer
- [1799118](#) – Fix issue in parallel consolidation log
- [1802102](#) – Fix result error of parallel consolidation

Log into the SAP GUI and type in transaction code SPRO and click Enter

Click SAP Reference IMG
Navigate to Planning and Consolidation -> Configuration Parameters -> Set Model Parameters and click the Execute icon.

Enter the Environment, Model, and click the Execute icon.

Click the Insert icon.
At the prompt, enter `ENABLE_PARALLEL_CONS` and click Okay icon.

Enter X for the value and click the Okay icon.

Save the update to the Model parameters.

If your consolidations process contains a large number of transactional data, you may need to enter another Model parameter `LARGE_VOLUME_FACTOR`. To understand if this parameter is needed, please read note 1794758. No other updates to the logic script or business rules are necessary.
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