

Troubleshooting Guide for SAP BW

Pyramid is a certified client tool for connecting to both BW and BW/4HANA. It uses the standard SAP connection framework for connecting to SAP BW and for consuming BW cubes and queries. In normal circumstances, connecting to BW requires a few settings. These are described in Pyramid's [online help](#) under administration. There, however, a variety of challenges that may be encountered if there have been many SAP customizations.

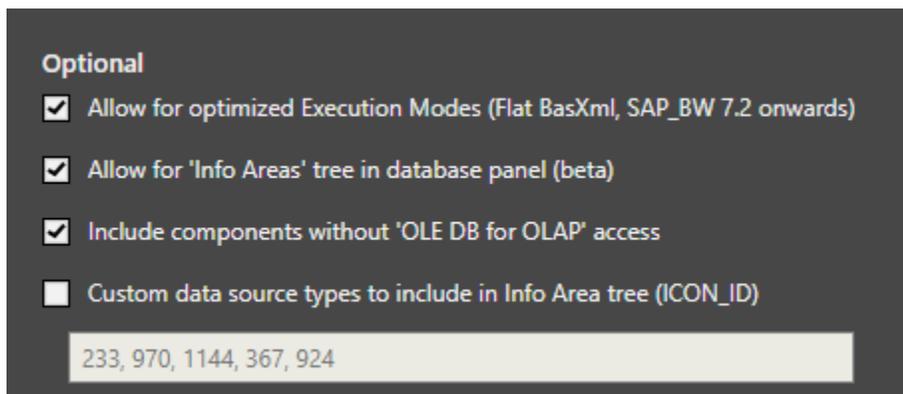
The following document provides details for resolving issues for connecting to SAP BW from Pyramid.

Contents

Data Source Options	3
Allow for optimized Execution Modes (Flat BasXml, SAP_BW 7.2 onwards)	3
Allow for “Info Area” trees in database panel	3
Include components without “OLE DB for OLAP” access	4
Custom data source types to include in Info Area trees.....	4
Troubleshooting Access	5
Access and Authorization.....	5
Connectivity to SAP BW BEx Queries	6
Other Issues	6
Missing Databases.....	6
Meta Data Issues.....	8
Query Issues	8

Data Source Options

There are several options for new SAP BW connections from Pyramid. These settings are in addition to the standard connectivity items required to connect as described in Pyramid's online help guide for administrators.

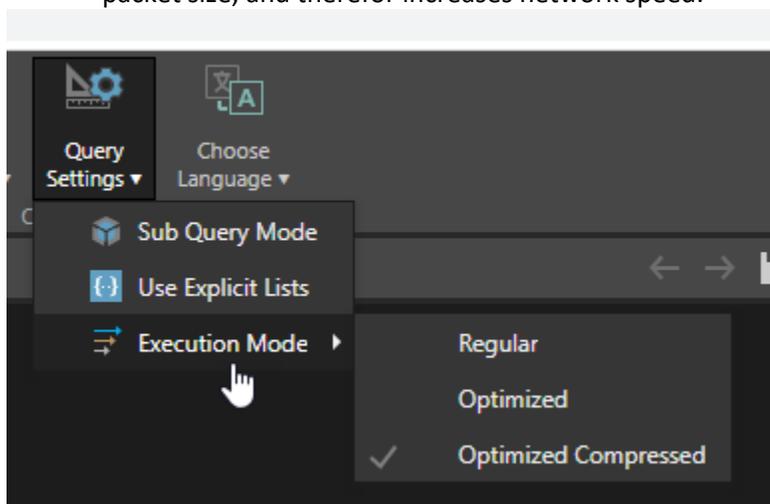


Allow for optimized Execution Modes

This setting allows you to execute the MDX statement using a flattening algorithm internal to the BW system. This can often yield faster query response times especially when dealing with larger result sets.

With this property checked a user now has the following options while in discovery:

- **Optimized:** Using the SAP-specific format for binary storage of XML files, the data is displayed without redundancy.
- **Optimized Compressed (default):** same as “Optimized” but adding a level of compression which reduces the packet size, and therefore increases network speed.



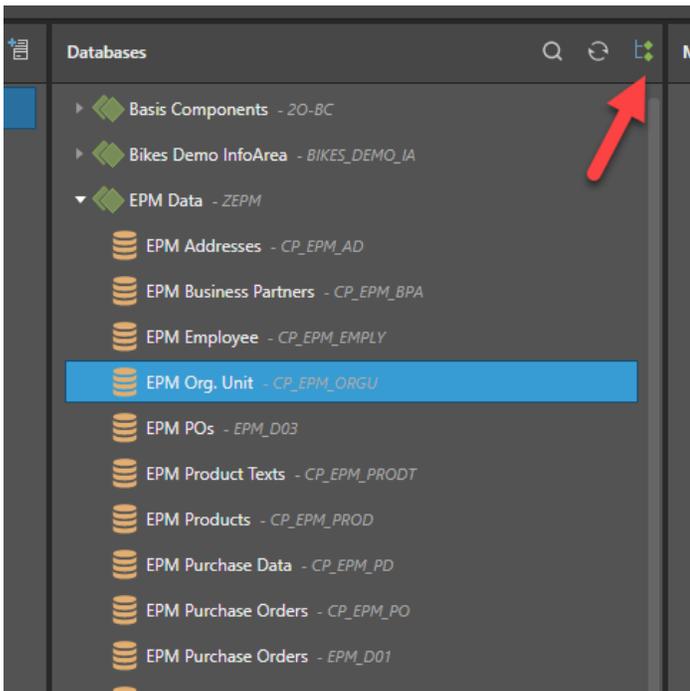
“Optimized” and “Optimized Compressed” make use of the following BAPIS while retrieving query results.

- [RSR_MDX_BXML_GET_DATA](#)
- [RSR_MDX_BXML_GET_GZIP_DATA](#)

Allow for “Info Area” trees in database panel

This is a feature which allows the user to choose to see the list of Info Providers in a tree format. When used, Pyramid is using the following BAPI to retrieve the Catalogs:

- [RSZ_X_INFOCUBES_GET](#)



Include components without “OLE DB for OLAP” access

In general the SAP BW system needs to grant access via enabling the “OLE DB for OLAP” property to expose BEx queries to the user (see “Connectivity to SAP BW BEx Queries”). Checking this option however allows Pyramid to access BEx queries without that property enabled. This feature is making use of the following BAPI:

- [RSZ_X_COMPONENT_LIST_GET](#)

Custom data source types to include in Info Area trees

The numbers in the text box map to **ICONID** field in the SAP BW system (see image below). They are used to filter the **LEAF** nodes when using either of the options detailed in points 2 and 3 above.

By default, Pyramid is filtering by the following ICONIDs: 233, 970, 1144, 367, 924, 1092, 245

ICONID	DISABLED_I	RBKEY	RELKEY	NODE	TECHNAME	TEXT	H	TEXT_FROM	TEX
232	232	X000016		33	ZEPM	EPM Data		EPM Data	
232	232	X000009		33	ZO-BW4	SAP BW/4HANA		SAP BW/4HANA	
232	232	X000001		33	OBWTCT	Technical Content		Technical Content	
232	232	X000012	X000001	33	OBWTCT_BPC	BPC IP Extension		BPC IP Extension	
1144	1144	X000010	X000009	14	ZCREPM_DEPSOV3	Department Sales Order		Department Sales Order	
367	367	X000021	X000016	14	EPM_D03	EPM POs		EPM POs	
367	367	X000017	X000016	14	EPM_D01	EPM Purchase Orders		EPM Purchase Orders	
367	367	X000019	X000016	14	EPM_D02	EPM Purchase Orders (Simple)		EPM Purchase Orders (Simple)	
232	232	X000002	X000001	33	OBWTCT_SCEN	Scenario Content		Scenario Content	
245	245	X000032	X000021	13	EPM_D03_AUTH	Authorisation query		Authorisation query	
245	245	X000035	X000021	13	EMP_D03_AUTH_NO_OLE	Authorisation query without OLE activation		Authorisation query without OLE activation	
0	0	X000013	X000012	14	3B0BPCBFFBP	BAdI provider for BPF system report		BAdI provider for BPF system report	
245	245	X000031	X000021	13	EPM_D03_CURR_CONV	Currency conversion		Currency conversion	
245	245	X000030	X000021	13	EPM_D03_CURR_CONV_VAR	Currency conversion with variable		Currency conversion with variable	
245	245	X000029	X000021	13	EPM_D03_CURR_CONV_VAR2	Currency Conversion with Variables #2		Currency Conversion with Variables #2	
232	232	X000003	X000002	33	OEPM_CONT_DELV	E-Procurement Management Model (NW Demo EPM)		E-Procurement Management Model (NW Demo EPM)	
245	245	X000018	X000017	13	EPM_D01_001	EPM Purchase Orders Basic (all data)		EPM Purchase Orders Basic (all data)	
245	245	X000020	X000019	13	EPM_D02_001	EPM_D02_001		EPM_D02_001	
245	245	X000034	X000021	13	EPM_D03_001	EPM_D03_001		EPM_D03_001	
245	245	X000033	X000021	13	EPM_D03_002	EPM_D03_002		EPM_D03_002	
245	245	X000028	X000021	13	EPM_D03_ORGU_NEW	Org. unit structure *new*		Org. unit structure *new*	
245	245	X000027	X000021	13	EPM_D03_ORGU_OLD	Org. unit structure *old*		Org. unit structure *old*	
245	245	X000026	X000021	13	EPM_D03_ORGU_VAR	Org. unit structure *variable*		Org. unit structure *variable*	
245	245	X000023	X000021	13	EPM_D03_W_HIER	Product with hierarchy		Product with hierarchy	

Troubleshooting Access

Access and Authorization

Assuming that SSO security has not been implemented, the SAP user that is connecting to the SAP BW data source needs access to a list of specific RFC function modules in order to retrieve data models and meta data from SAP BW's InfoProviders. These are usually on by default, but they should be checked. They include:

- BAPI_MDPROVIDER_GET_CATALOGS
- BAPI_MDPROVIDER_GET_CUBES
- BAPI_MDPROVIDER_GET_DIMENSIONS
- BAPI_MDPROVIDER_GET_HIERARCHYS
- BAPI_MDPROVIDER_GET_LEVELS
- BAPI_MDPROVIDER_GET_MEASURES
- BAPI_MDPROVIDER_GET_VARIABLES
- BAPI_MDPROVIDER_GET_PROPERTIES
- BAPI_MDPROVIDER_GET_MEMBERS
- BAPI_MDPROVIDER_GET_VAR_DEFVAL
- RSZ_X_COMPONENT_LIST_GET
- RSZ_X_INFOCUBES_GET

Pyramid also uses the following RFC functions for retrieving query results:

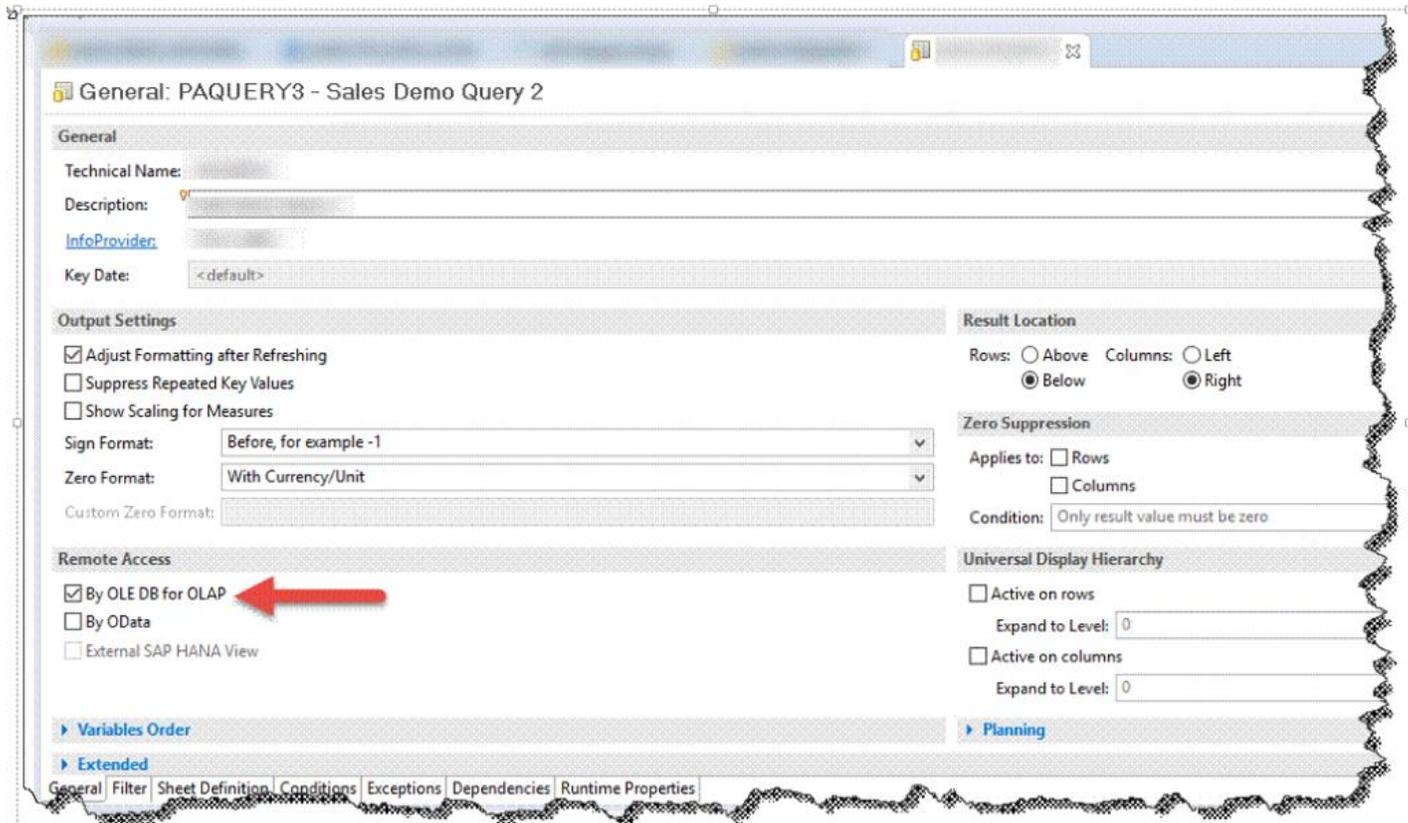
- BAPI_MDDATASET_DELETE_OBJECT
- BAPI_MDDATASET_CHECK_SYNTAX
- BAPI_MDDATASET_SELECT_DATA
- BAPI_MDDATASET_CREATE_OBJECT
- BAPI_MDDATASET_GET_AXIS_INFO
- BAPI_MDDATASET_GET_CELL_DATA
- BAPI_MDDATASET_GET_AXIS_DATA
- RSR_MDX_BXML_GET_INFO
- RSR_MDX_BXML_SET_BINDING
- RSR_MDX_BXML_GET_DATA
- RSR_MDX_BXML_GET_GZIP_DATA

Connectivity to SAP BW BEx Queries

When retrieving models out of SAP BW, Pyramid uses one of two RFCs. They are

- [BAPI_MDPROVIDER_GET_CUBES](#)
- [RSZ_X_COMPONENT_LIST_GET](#)

In the case of [BAPI_MDPROVIDER_GET_CUBES](#) the “By OLE DB for OLAP” property of the BEx query needs to be enabled, as shown below:



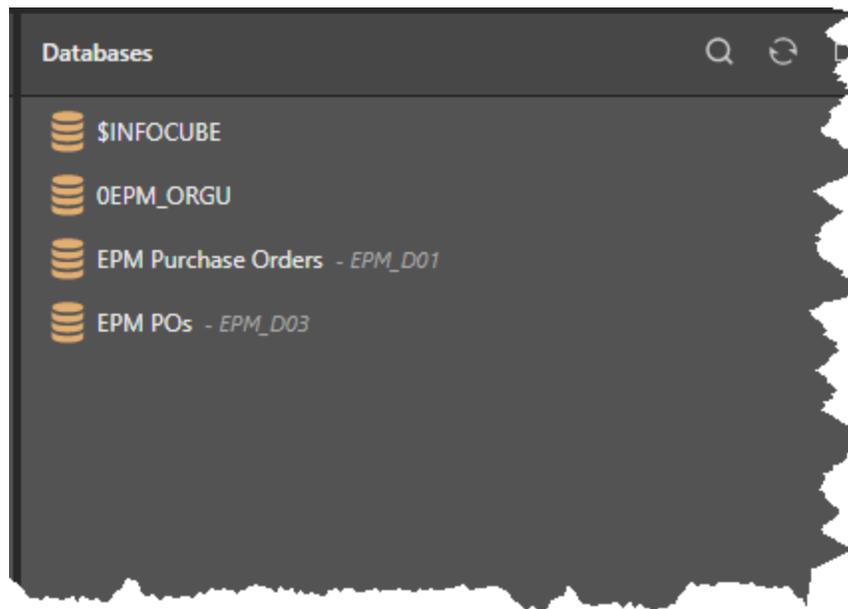
To instead use the second RFC, ensure the “Include components without ‘OLEDB for OLAP’ access option is enabled.

Other Issues

Missing Databases

In the event of missing databases from the “databases” panel

1. Open ‘SAP Logon’ and connect to the BW server *with the SAP user that is being used in Pyramid*
2. Execute transaction “**se37**” and run the following BAPI command: [BAPI_MDPROVIDER_GET_CATALOGS](#)
3. If you find the catalogs missing in the resultant list, check that the currently connected user has access rights to the desired database



In the event of missing models (BEx queries and otherwise)

1. If the “Include components without “OLE DB for OLAP access” is unchecked (see “Data source options and their implications” point 3)
 1. Open SAP Logon and connect to the BW server *with the user that is defined in Pyramid*
 2. Execute transaction “se37” and run the following BAPI command: BAPI_MDPROVIDER_GET_CUBES. You will need to enter the technical name of the parent database in the CAT_NAM field.
 3. If you find the models missing in the resultant list, then confirm the “by OLE DB for OLAP” property is checked (see above “Connectivity to SAP BW BEx Queries”). Otherwise check that the currently connected user has access rights to the desired Models
2. If the “Include components without OLE DB for OLAP access” is checked (see “Data source options and their implications” point 3)
 1. Open SAP Logon and connect to the BW server *with the user that is defined in Pyramid*
 2. Execute transaction “se37” and run the following BAPI command: RSZ_X_COMPONENT_LIST_GET
 3. In the tables results identify the E_T_COMP_F4 result
 4. In the resultant list find desired model and take note of its ICONID and RELKEY.

Check that the ICONID is either **245** or is included in the custom data source types list (see “Data source options and their implications” point 4)

1. If it isn’t, add it to the custom data source types list
2. If it is in the list, then find the row whose RBKEY matches to then RELKEY from step 2.2.4. Take note of this item’s ICONID and check it is in the custom data source types list. If it isn’t, add it to the custom data source types list

Meta Data Issues

When opening a model, the Dimension tree is blank.

1. Open 'SAP Logon' and connect to the BW server *with the SAP user that is being used in Pyramid*
2. Execute transaction "se37" and run the following BAPI command: [BAPI_MDPROVIDER_GET_DIMENSIONS](#).
3. You will need to enter the technical name of for both the CAT_NAM and CUB_NAM fields, which are the category and cube names respectively.

When opening a model, the meta data takes an extremely long time to appear.

1. See note [SAP Note 971164](#) for potential fix

Missing Variables/Parameters in Pyramid.

1. Open 'SAP Logon' and connect to the BW server *with the SAP user that is being used in Pyramid*
2. Execute transaction "se37" and run the following BAPI command: [BAPI_MDPROVIDER_GET_VARIABLES](#).
3. You will need to enter the technical name of for both the CAT_NAM and CUB_NAM fields, which are the category and cube names respectively.

Query Issues

While running a query in Pyramid you find any of the following issues:

- Incorrect result
- Slow running queries
- Incorrect number formatting

The screenshot displays the Pyramid Analytics administrative console. On the left is a navigation sidebar with categories like Licensing, Access, Data, Settings, Servers, Schedules, Logs, and Entries. The 'Entries' section is expanded to show 'Transaction' and 'Benchmark'. The main area is titled 'Transaction Logging' and contains a table with columns: Request ID, Server Name, Runtime Engine, Windows Connector, Database Type, Database Name, User Name, Start Time, Post Query (ms), and Engine (ms). A red arrow points to the 'Request ID' '6a56601-9884-43c5-90e3-6a038a2c767'. Below the table, the 'Request ID Data' section shows the 'Query Text' and 'Query Information'. The 'Query Text' contains an MDX query. The 'Query Information' shows 'Query Time: 112' and 'Total Time: 201'. A red arrow points to the 'Copy To Clipboard' button in the top right of the query information panel.

Request ID	Server Name	Runtime Engine	Windows Connector	Database Type	Database Name	User Name	Start Time	Post Query (ms)	Engine (ms)
6a56601-9884-43c5-90e3-6a038a2c767	data0	q3prodnew.DEV.pyramidanaly	q3prodnew.DEV.pyramidanaly	MS OLAP	Pyramid Demo 2013	se	9/3/2020, 6:54:37 PM	0	202

```
WITH
  /* --- Pyramid 2020.12.044 MAIN by es@pyramidanalytics.com --- */
MEMBER [Promotion].[Promotions].[combo] AS AGGREGATE({ ([[[L1] 2] ] ) }, Scope_Isolation=NONE
SET [measure_ext] AS DISTINCT([Measures].[Quantity per Customer])
SELECT
  {[[measure_ext]]}
ON COLUMNS
FROM [Pyramid Sales Demo]
WHERE ([Promotion].[Promotions].[combo])
CELL PROPERTIES VALUE
```

Query Information #0
Query Time: 112
Total Time: 201

1. After running the query in Pyramid, grab the MDX that was run from the transaction log in the administrative panel (see image below).
2. Open SAP Logon and connect to the BW server *with the user that is defined in Pyramid*
3. Got to transaction MDXTEST and paste the mdx (from step 1) into the editor window
4. Execute the query and compare the results to those in Pyramid.