Master Data on the Fly in SAP BusinessObjects Planning and Consolidation 10.0, version for NetWeaver

Applies to:

SAP BusinessObjects Planning and Consolidation 10, version for SAP NetWeaver. For more information, visit the Enterprise Performance Management homepage.

Summary

Traditionally SAP BusinessObjects Planning and Consolidation 10, version for SAP NetWeaver, administrators maintain dimensions and their members in the BPC Administration Web client to ensure governance and consistency of master data. However under certain circumstances, it may be necessary to allow end users to create master data values themselves "on the fly" rather than having to wait for a central administrator to do it for them.

The how to guide contains step-by-step instructions on allowing authorized end users to create master-data-on-the-fly in the EPM add-in for Microsoft Office connected to SAP BusinessObjects Planning and Consolidation 10, version for SAP NetWeaver.

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Author Bio

Daniel Settanni has worked SAP Labs in the EPM CSA for the last 4 years. He specializes in SAP BusinessObjects Planning and Consolidation, both the Microsoft and NetWeaver releases.

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Overview

The business scenario focuses on planning processes that may require end users to create master data (such as Salary forecasting, project staffing planning or Marketing Event planning). We describe a framework that allows end-users to create dimension-members on-the-fly within SAP BusinessObjects Planning and Consolidation 10, version for SAP NetWeaver (hereafter referred to as BPC or BPC for NetWeaver).

Traditionally BPC administrators create and maintain dimensions and their members in the BPC Administration web client to ensure governance and consistency of master data across all applications.

However under certain circumstances, it may be necessary to allow end users to create master data values themselves "on the fly" rather than having to wait for a central administrator to do it for them. Examples include:
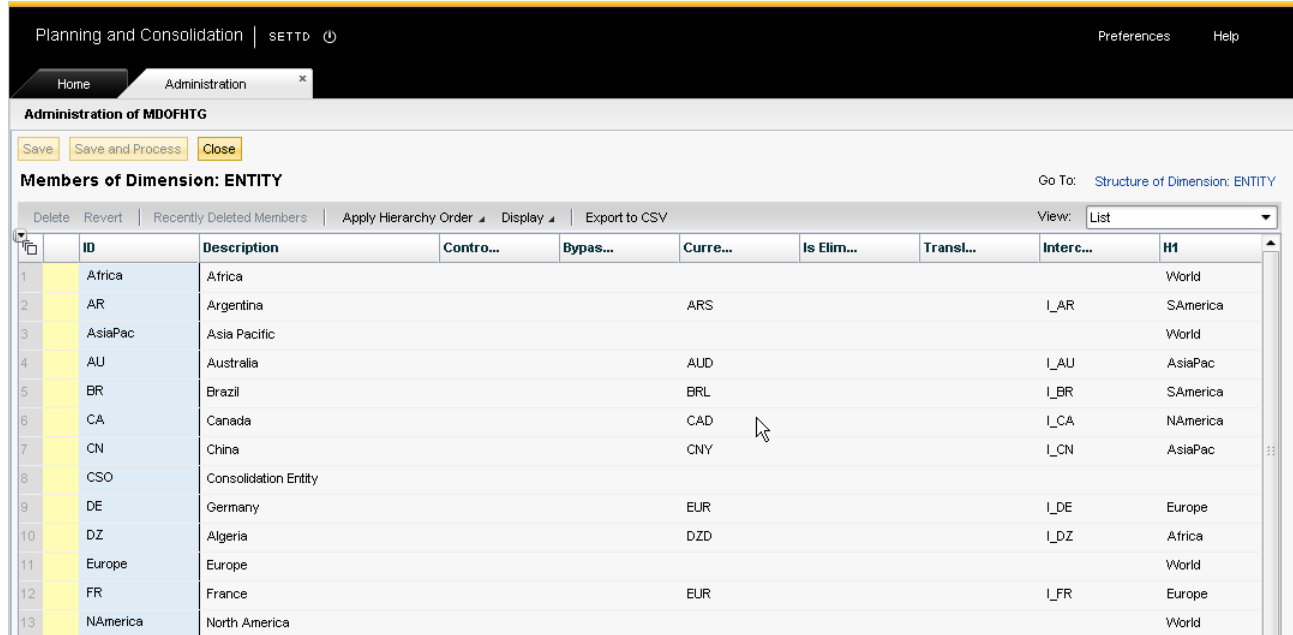
1. Creating new projects or marketing events that they would like to plan.
2. Create new employees or positions to plan salaries for their cost center.

These master data values are often referred to as pseudo objects (planning objects that do not exist yet within the organizations ERP system).

The how to guide contains step-by-step instructions on how to implement a mechanism to allow authorized end users to create master-data-on-the-fly in the Excel client for BPC for NW. I released a similar guide for BPC 7.5 for NetWeaver recently and the functionality here is basically the same. The major exception is that the code needed to be re-written to support the API's in the new release.

Business Scenario

Today, SAP BusinessObjects Planning and Consolidation solution allows selected business users to maintain master data and hierarchies in a zero footprint web interface.

Figure 1: Dimension member maintenance within the Planning and Consolidation Administration web interface.

There are also options to load master data from source systems such as SAP ERP or SAP NetWeaver BW into BPC to leverage this data for planning and consolidation. However, today there is no standard way to allow end users to create master data – for good governance reasons: if everybody creates and maintains master data, this quickly leads to inconsistencies and eventually chaos. The integrity of master data is a key requirement for an integrated solution for planning and consolidation.

There are cases however, where this rigid paradigm may hinder the flexible and efficient creation of plans and plan scenarios. For example the need for creating flexible salary, project staffing or marketing event plans containing planned master data objects such as new employees, planned events or expected projects.

Also, the challenge of getting the initial master data into BPC when there is no common underlying source system is often more easily overcome when the burden of entering the data is de-centralized to the data owners; rather than having to collect all master data via an offline process first in order for the central administrator to transfer it into BPC.

An example is the initial set-up of employees in BPC. If there is no central corporate wide HR system (with good data quality) that can be leveraged to load the employee data into BPC then it may make sense to simply have every cost center manager enter their respective employees. Cost center managers usually know exactly what employees' salaries are booked against their cost center. So, empowering cost center managers to enter their own employee and the respective salary plan against them, can lead to high data accuracy.

Today, the plan master data can be addressed in two different ways:
- The BPC administrator enters all planned master data and users inform him of their needs via an offline process (usually email or support ticket system)
- Dummy or pseudo members are created – such as employee1 or Director1 – to allow users to plan new staff. BPC comments can be used to add additional detail such as the person's name if known at the time of planning

The problem with the first method is that it is not self service and thus slow. A person trying to plan various projects with the associated staffed employees may need to switch things around multiple times within hours – creating new projects and staff members to see how numbers roll up. For him to contact the BPC admin would be cumbersome.

The challenge with the second method is the plan vs. actuals comparison. Multiple people can use the same dummy node, but potentially for different things. The manager of cost center 4711 will most likely use the dummy employee1 for something different that the planner for cost center 0815:

Cost Center	Employee	BPC Comment
4711	employee1	Scott
0815	employee1	Jens

Table: using the same dummy nodes for different employees

So, when the employee numbers for Scott and Jens are finally created in the underlying ERP, it is impossible to replace "employee1" with an employee number – because employee1 represents two employees – Scott and Jens.

Creating planner specific dummy nodes is an option to overcome this problem. But when having hundreds of planners on the system creating multiple dummy nodes would lead to large dimensions – and usually most of the dummy will not be used in the end, while there might be situations where none of the dummies fit and thus the administrator would have to be contacted anyways.

As mentioned in the beginning, for reasons around master data governance the two processes outline are valid processes. If they work well for you today, we wouldn't recommend switching over to the master-data-on-the-fly method described in this paper. However, if these highly governed processes are a pain-point in your organization then this paper offers a great alternative – empowering end-users to create master data themselves.

Especially if you are using the dummy-node process, this paper presents a great alternative.

Master Data Planning vs. Master Data on the Fly

The difference between Master Data Planning and Master-data-on-the-fly

To avoid confusion up front, it is important to understand the difference between master data planning and creating Master-data-on-the-fly to support planning transactional data.

Master data planning is the more complex of the two processes and involves the creation of a plan for organizational restructuring and hierarchy changes. The underlying transactional data – plan or actuals - is then aligned against the new master data structures and hierarchies to assess the impact of different scenarios.

Master-data-on-the-fly on the other hand is used to create the dimension members to input transactional plan data against. Master-data on-the-fly focuses on member creation – along with their properties – not on hierarchy changes or organizational remodeling.

Example of master-data-on-the-fly would be the creation of a new employee to plan in my cost center, a new material that we plan for next year, a new I/O that I plan to create in ERP to track my marketing campaign costs or a new project I'd like to plan and staff.

Master Data on the Fly

So, how do we allow an end-user to create Master Data on the fly while form the EPM Add-In for Excel?

One way to achieve this is to allow users to create master data from a Data Manager Package. The transport attached to this guide includes all of the components required to enable this functionality. Once installed, the administrator needs to create a new data manager package with the appropriate prompts to enable master data on the fly functionality on a given dimension.

End users can create new master data by executing the data manager packages created by administrators. The data manager packages will have two basic steps.

The first step allows users to select where to place the new member in the hierarchy.
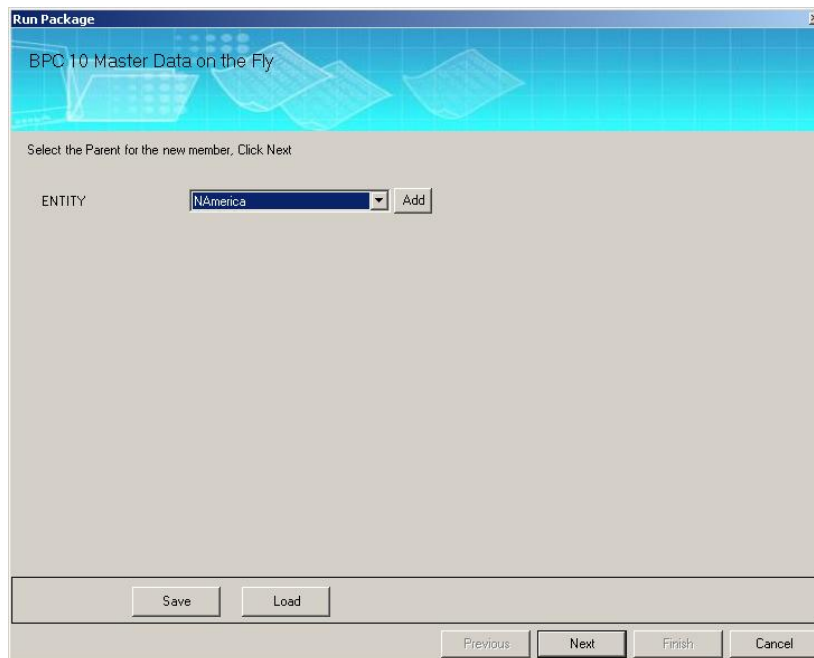
The subsequent steps allow users to assign property values.
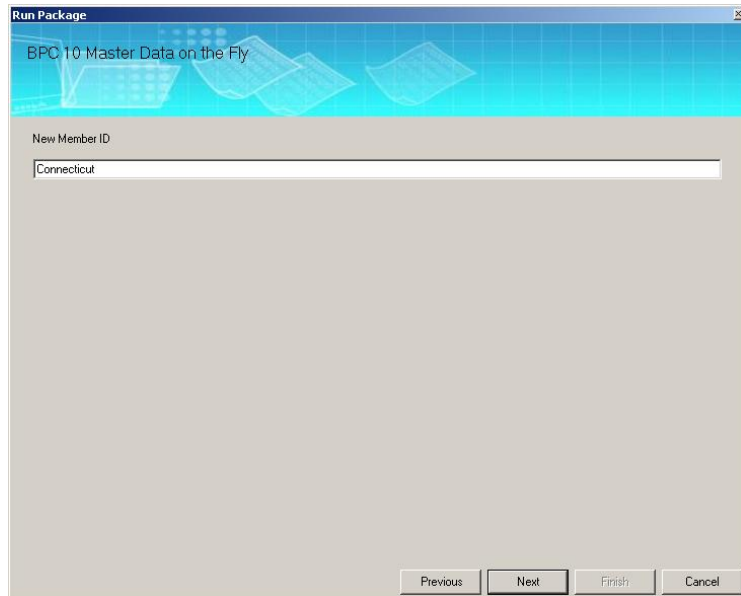
Lastly, users need to log out and back in to see the updated master data.

Note: An enhancement request to add a "Refresh Master Data" option in the EPM Add-In has already been entered and is tentatively scheduled for Q4 of 2011. After that point you should be able to update master data by clicking the appropriate button in the EPM Add-In.

Prerequisites

- SAP GUI / Developer Access to BW
- SAP BusinessObjects Planning and Consolidation, version for SAP NetWeaver
  - Version 10.0

Installation and Configuration Tasks

This How-To guide contains links to transport request files, K900480.EPM and R900480.EPM. This transport request contains all the NetWeaver objects that are required to complete this How-To Guide:

[Download transport request files](#)

As the process of importing a transport request is not covered here, it is suggested that you seek assistance from your basis administrator in order to have this transport request imported into your system.

What's included in the transport

The transport contains:

- A new process type named ZUJDXRL
- The class implementing the behavior of the ZUJDXRL process type, ZUJDX_MDOF_RUN_LOGIC
- A new process chain named ZUJDX_MDOF_PC / BPC 10: Extended Run Logic
- A BAdi enhancement implementation named ZUJDX_EI_MDOF_BADI
- A BAdi implementation named ZUJDX_CL_MDOF_BADI
- A class providing the actual master data on the fly functionality called ZUJDX_CL_MDOF
- A couple dictionary objects to help things along

Note: You can view all of the dictionary objects and classes in package ZUJDX_MDOF. The BAdi is based on the UJ_CUSTOM_LOGIC enhancement spot. The new process type and process chain can be reviewed in T-Code RSPC.

Post Installation Configuration

This section describes the required steps to create data manager packages enabling master data on the fly.

Creating the Script Logic File

This process requires some basic script logic that includes the *START/*END BAdi definition. This definition is generic, so it can be reused for multiple dimensions within each application.

Note: The screenshots for this section are built on a copy of Environmentshell. You can use the same procedure as documented the next two sections in your own copy of Environmentshell to get a working example.

To create the script logic file:

1. Log into the BPC web client and launch the "Planning and Consolidation Administration" client
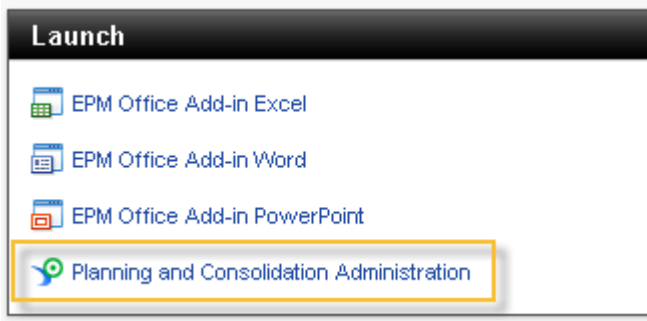
2. Navigate to Application -> Rules -> Logic Scripts
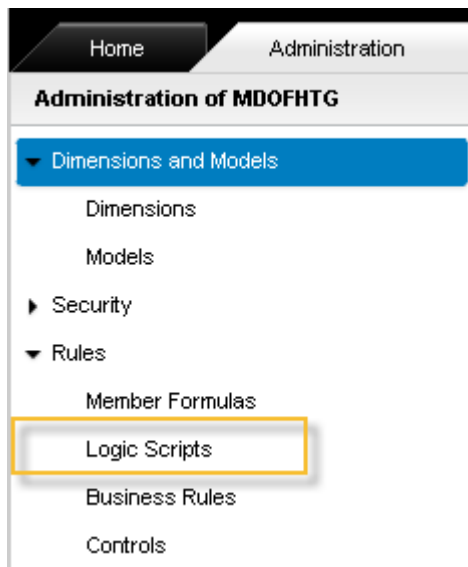
3. Select "Scripts for: Planning"

4. Click "New"
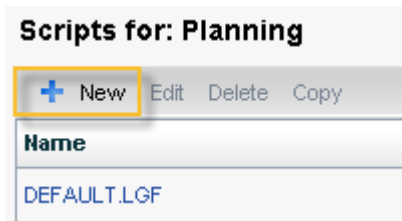
5. Name the new script logic file "MDOFX" and click Create.
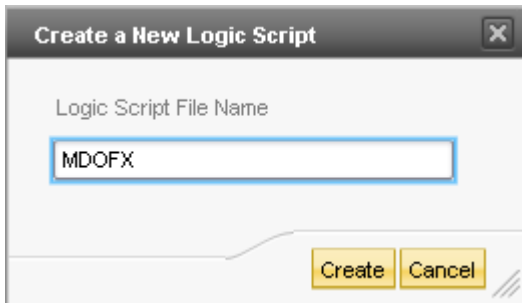
6. Copy and paste the following content into the new script logic file.

```
*START_BADI MDOFX
QUERY = OFF
WRITE = OFF
VARIANT = $VARIANT$
UNIQUE_ID = $UNIQUE_ID$
SELECTION = $SELECTION$
*END_BADI
```

7. Click "Save".

Creating the Data Manager Package

This section describes the process of creating and customizing the data manager package. A new data manager package needs to be created for each dimension that you want to enable this functionality for.

The data manager definition is the key component to this process. Most of the required information is passed to the BAdi via key / value combinations. The naming convention is REPLACEPARAM*X*_KEY and REPLACEPARAM*X*_VALUE where *X* equals a number in the range of 1 through 10. The information stored in these pairs is provided from the data manager prompts and passed through the process chain framework to the BAdi.

There are two required key / value pairs:

- Key "ID" – The value for "ID" key will become the ID of the new master data member.
- "TEMPLATE_MBR" – The value for "TEMPLATE_MBR" has to be an existing member. This member will act at the template for the new master data, so any property values not passed in from the data manager prompts will be inherited from this member.

Note: The "TEMPLATE_MBR" can be entered at runtime via a data manager prompt or hard-coded using the data manager info keyword.

The remaining key / value pairs can represent any other properties in the target dimension with the exception of PARENTH1, which we will discuss in a moment. To pass the value of a property from a data manager prompt simply "prompt" for the value, then pass it to the process chain using the "task" keyword.

You can use either the "TEXT" or "SELECT" prompt types in your data manager advanced script: use "TEXT" with properties that do not relate to dimension members (description, etc) and use "SELECT" with properties that should contain valid members from a dimension (currency, etc).

Example: To allow a user to set the description of a member from data manager you would add the following prompt and task commands to your data manager packages configuration:

```
PROMPT(TEXT,%PROP_EVDESCRIPTION%,"Description",)
TASK(ZBPC_RL_MDOF,REPLACEPARAM2_VALUE,%PROP_EVDESCRIPTION%)
```

The dimension and PARENTH1 member are configured by creating a select prompt in the data manager package. Only one member can be specified in the select prompt. A user will receive an error if they select multiple members or a base level member.

Example: The following select prompt would be used to add a member to the ENTITY dimension.

```
PROMPT(SELECT,%SELECTION%,,"Select the Parent for the new member, Click
Next","ENTITY")
```

Before we continue, it's worth noting a few limitations:

- Key's and Values passed from data manager have a 40 character length limitation. Any keys or values with greater than 40 characters will be truncated.
- The current code only addresses the ParentH1 hierarchy. One could change the target hierarchy in the code relatively easily.
- A user must log out and back in to see the newly created member in the EPM Add-In for Excel. This is due to the design of the EPM Add-In.

Note: An enhancement request to add a "Refresh Master Data" option in the EPM Add-In has already been entered and is tentatively scheduled for Q4 of 2011. After that point you should be able to update master data by clicking the appropriate button in the EPM Add-In.

1. Log into EPM Add-In for Excel
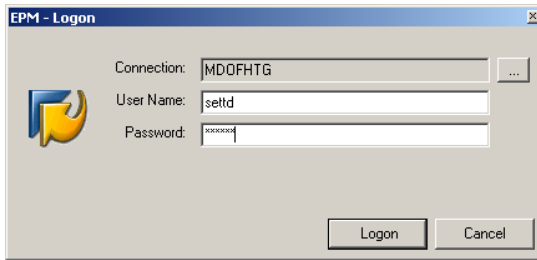
2. Select Organize > Organize Package List from the Data Manager ribbon.
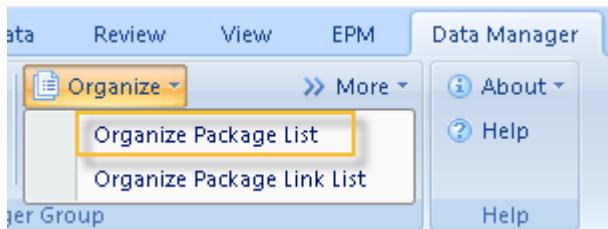
3. Click "Add Package" from the Package menu item.
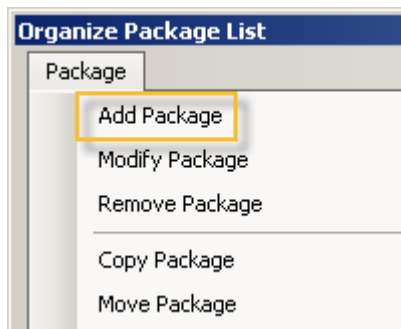
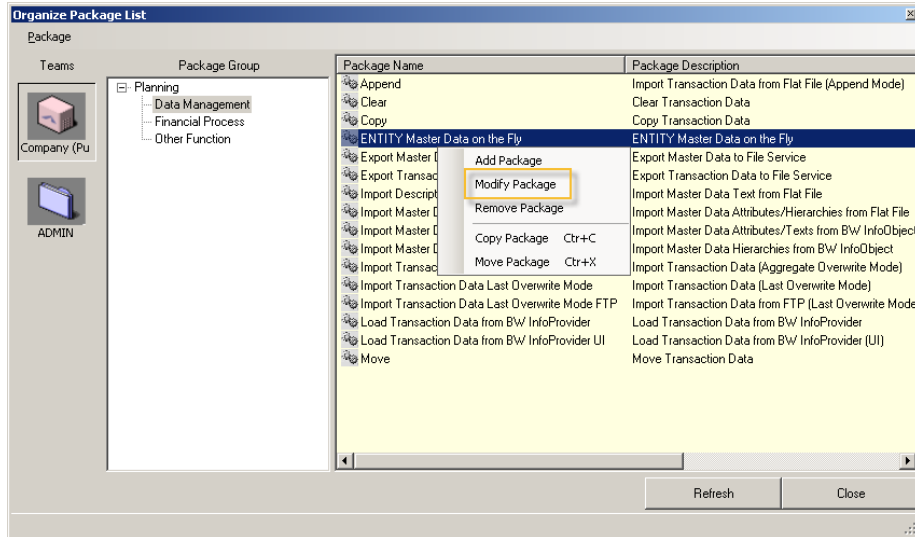4. Click "Select" in the Process Chain section.
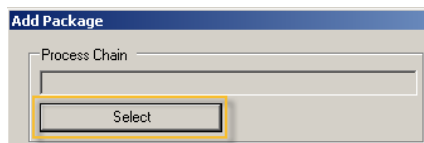
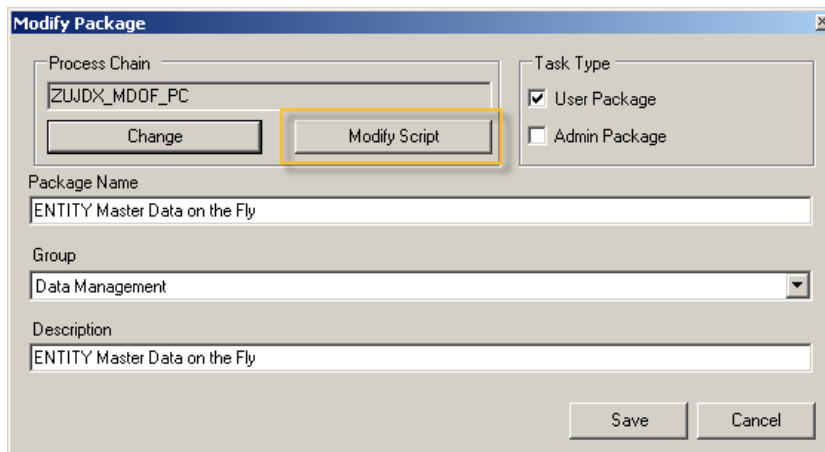5. Select the "ZUJDX_MDOF_PC" process chain in the Business Planning & Consolidation: Script Logic group.
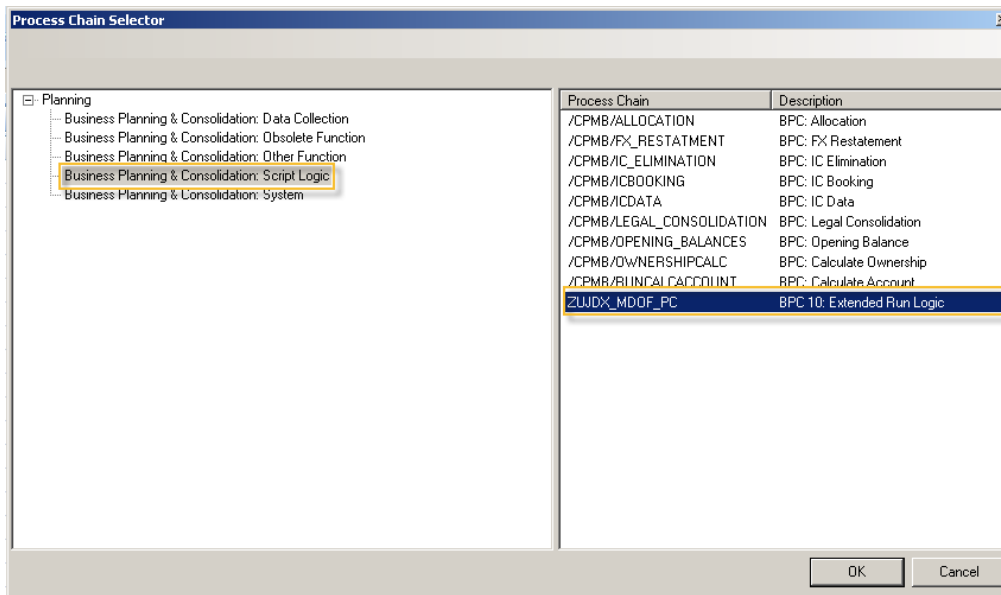
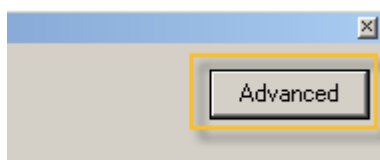6. Enter the Package Name, Description and Task Type. Click "Add".
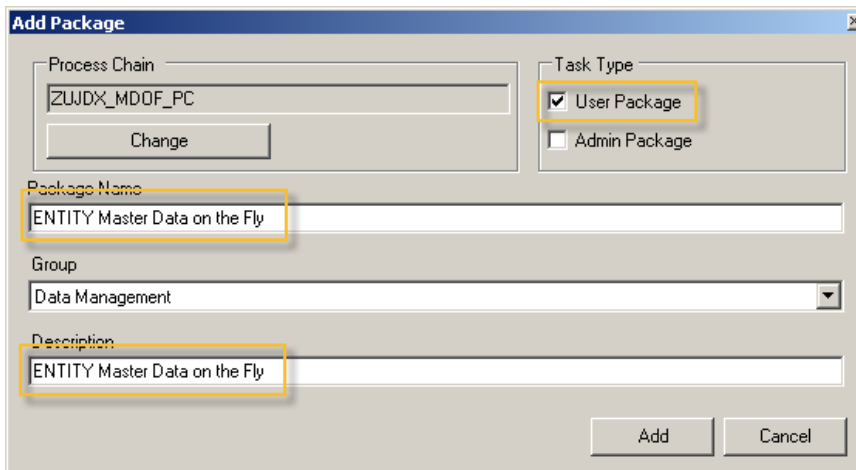
7. Right click on the newly created package and select "Modify Package".

8. Click "Modify Script".

9. Click "Advanced".

10. Paste the following into the Data Manager Dynamic Script editor:

```
PROMPT(TEXT,%PROP_ID%,"New Member ID",)
PROMPT(TEXT,%PROP_EVDESCRIPTION%,"Description",)
PROMPT(SELECT,%SELECTION%,,"Select the Parent for the new member, Click
Next","ENTITY")
PROMPT(SELECT,%PROP_CURRENCY%,,"Select the appropriate Currency for the new member,
Click Next","RPTCURRENCY",)
PROMPT(SELECT,%TEMPLATE_MBR%,,"Select the Template Member (default property values
will be copied from this member), Click Next", "ENTITY")
INFO(%EQU%,=)
INFO(%TAB%,;)
TASK(ZUJDXRL_VARIANT,TAB,%TAB%)
TASK(ZUJDXRL_VARIANT,EQU,%EQU%)
TASK(ZUJDXRL_VARIANT,SUSER,%USER%)
TASK(ZUJDXRL_VARIANT,SAPPSET,%APPSET%)
TASK(ZUJDXRL_VARIANT,SAPP,%APP%)
TASK(ZUJDXRL_VARIANT,SELECTION,%SELECTION%)
TASK(ZUJDXRL_VARIANT,LOGICFILENAME,MDOFX.LGF)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM1_KEY,ID)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM1_VALUE,%PROP_ID%)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM2_KEY,EVDESCRIPTION)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM2_VALUE,%PROP_EVDESCRIPTION%)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM3_KEY,CURRENCY)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM3_VALUE,%PROP_CURRENCY%)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM4_KEY,TEMPLATE_MBR)
TASK(ZUJDXRL_VARIANT,REPLACEPARAM4_VALUE,%TEMPLATE_MBR%)
```

Note: In this example we will be creating master data in the ENTITY dimension and setting the EVDESCRIPTION and CURRENCY properties in addition to the required ID and TEMPLATE_MBR keys.

11. Click "OK".
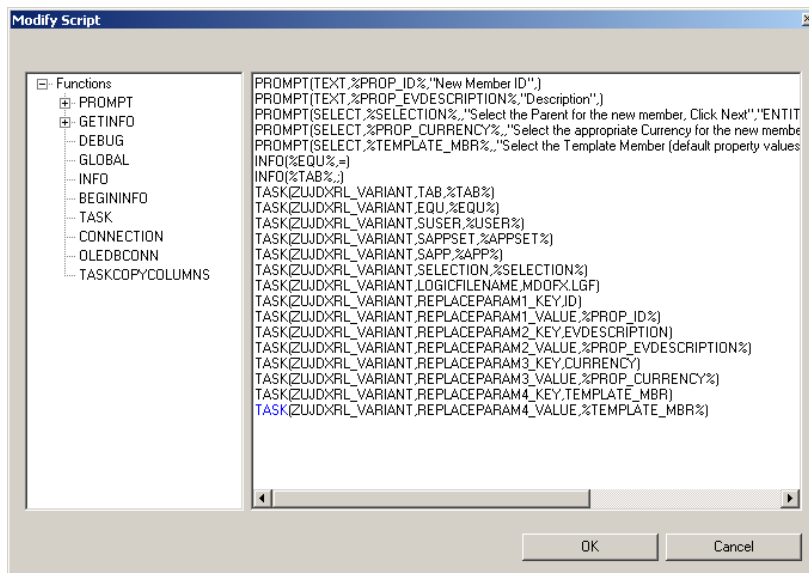
12. Click "Save".
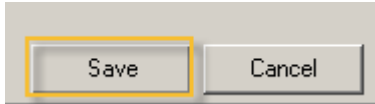
13. Click "Save".
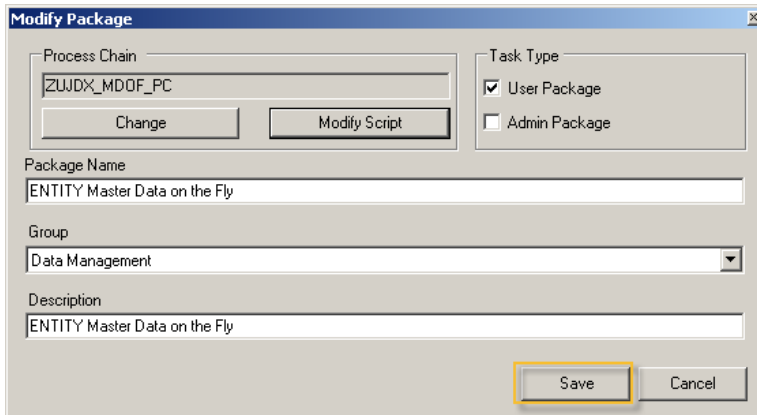
14. Click "Close".
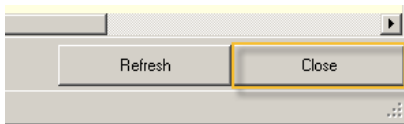
Example Master Data on the Fly Use-Case

This section describes the process of executing the data manager package we just created demonstrating create master data on the fly.

1. Log in to the EPM Add-In, click "Run Package" from Data Manager ribbon.
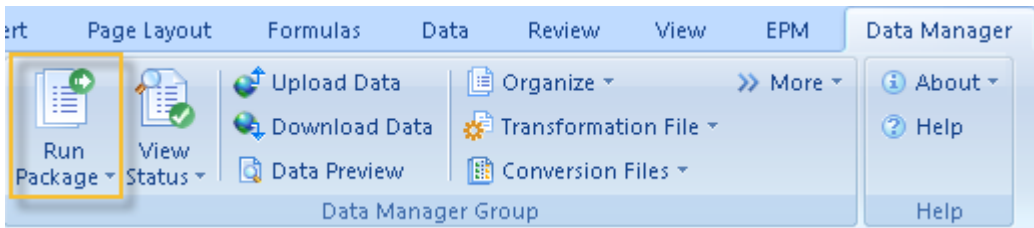
2. Select the package created in the previous section and click "Run".
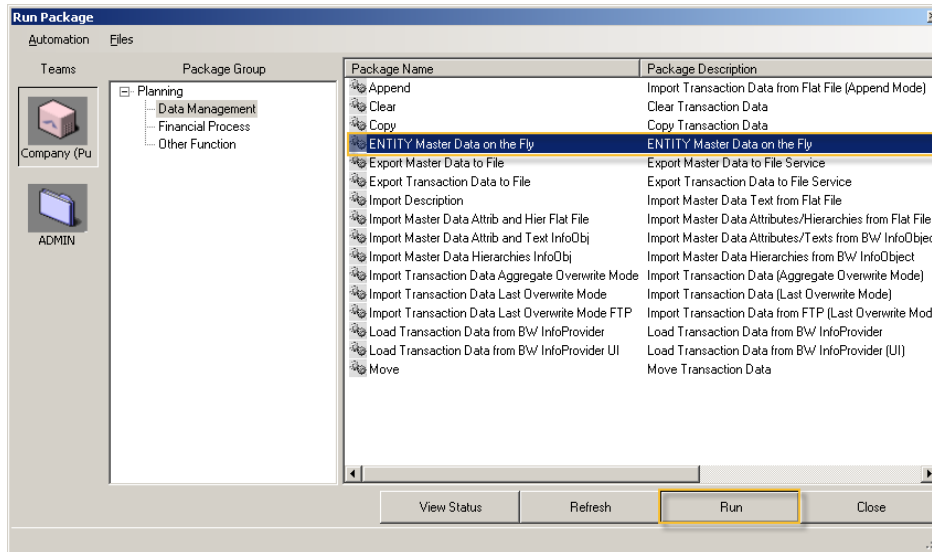
3. Enter "HTGTest" as the new member ID. Click "Next".
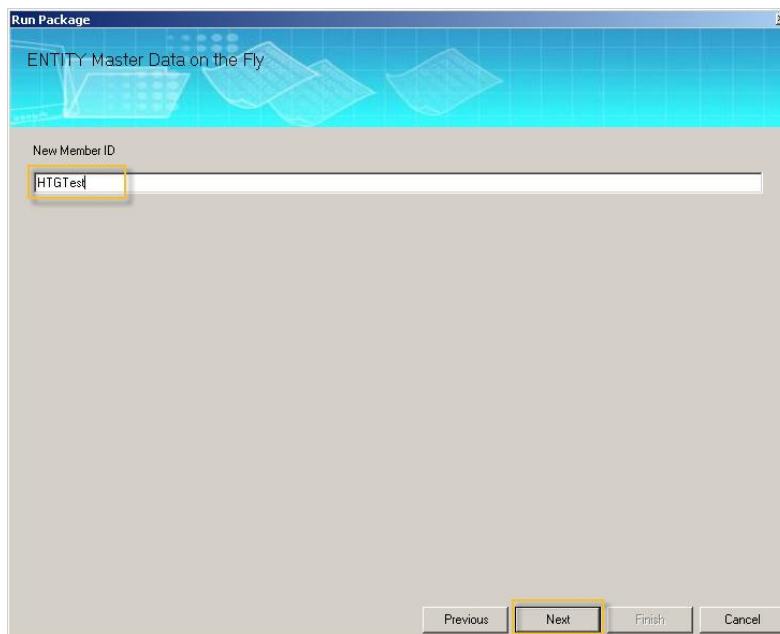
4. Enter a Description. Click "Next".
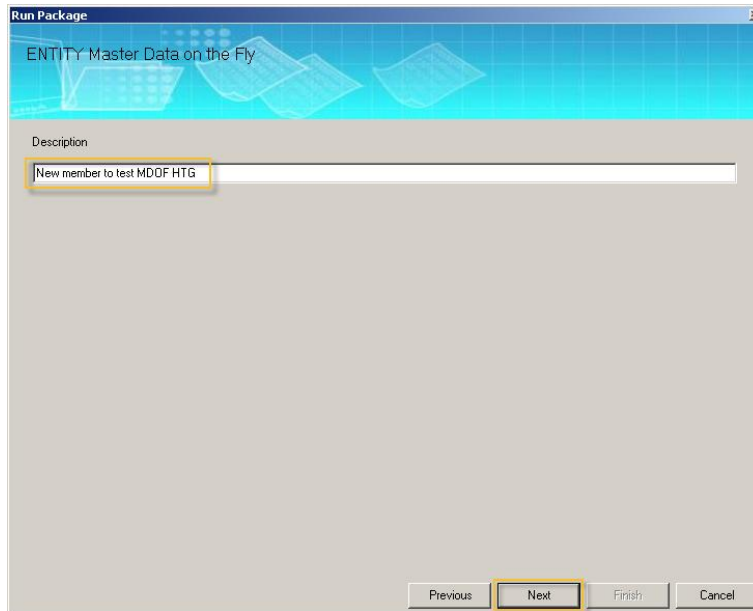
5. Click the "Add" button to select the parent for our new member.
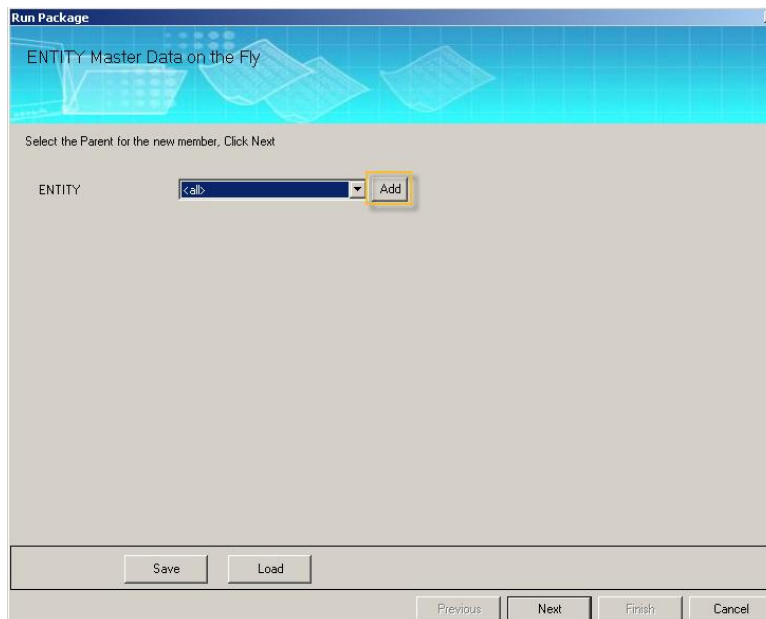
6. Check the box to the left of the World member and click the Right arrow. Click "OK".
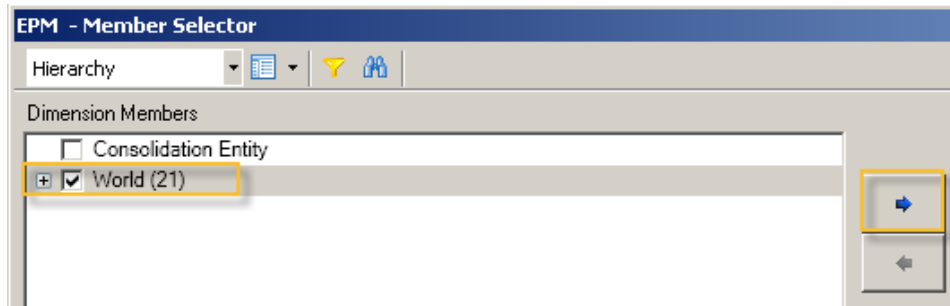
7. Click "Next".
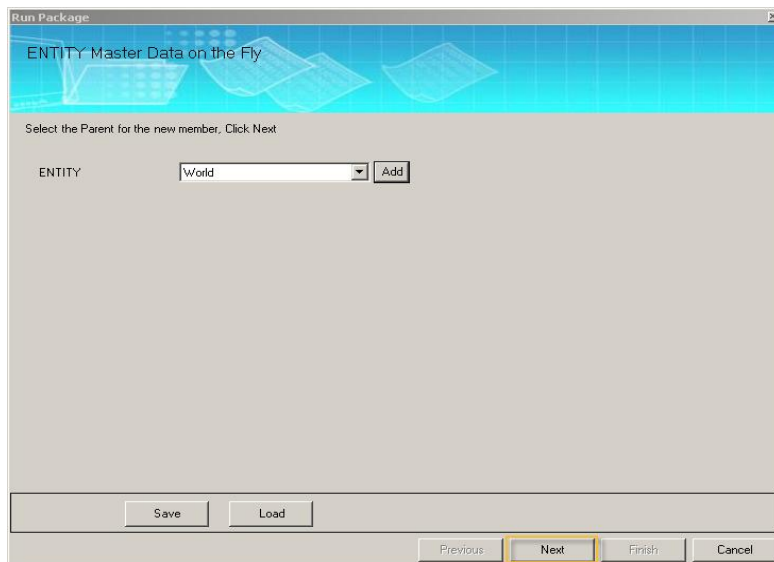
8. Click the "Add" button to select the Currency for our new member.
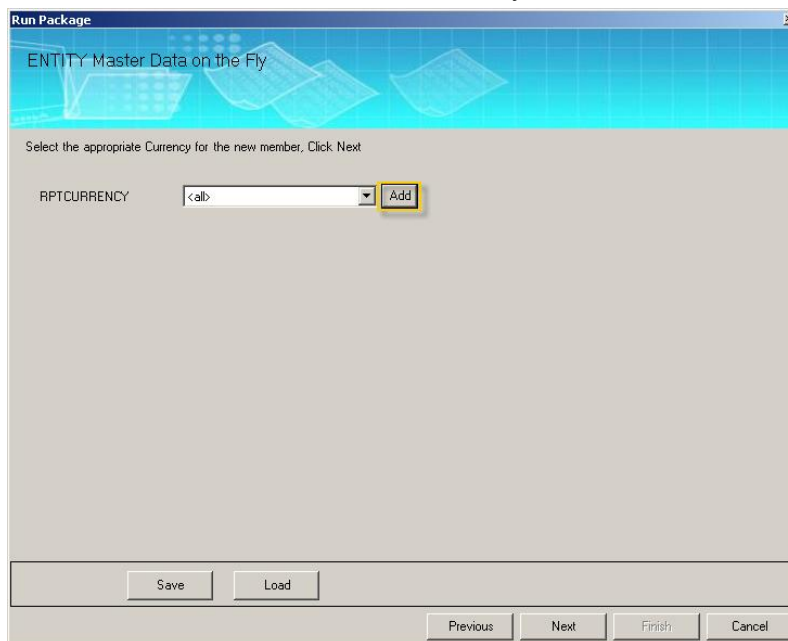
9. Check the box to the left of the "US Dollar" member and click the Right arrow. Click "OK".
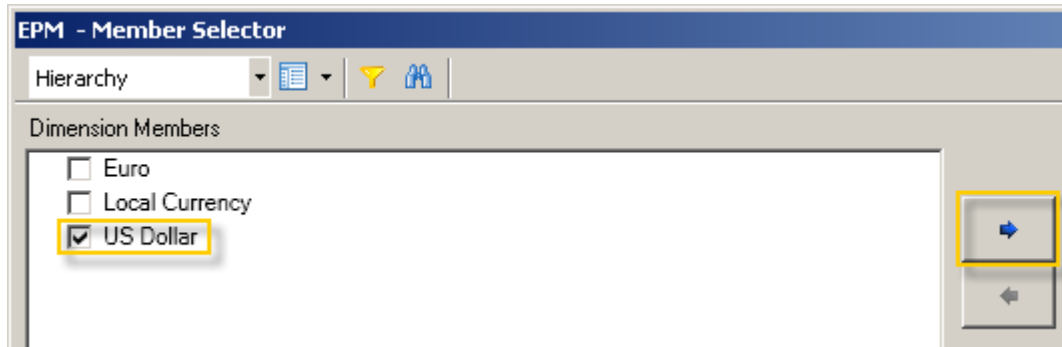
10. Click "Next".
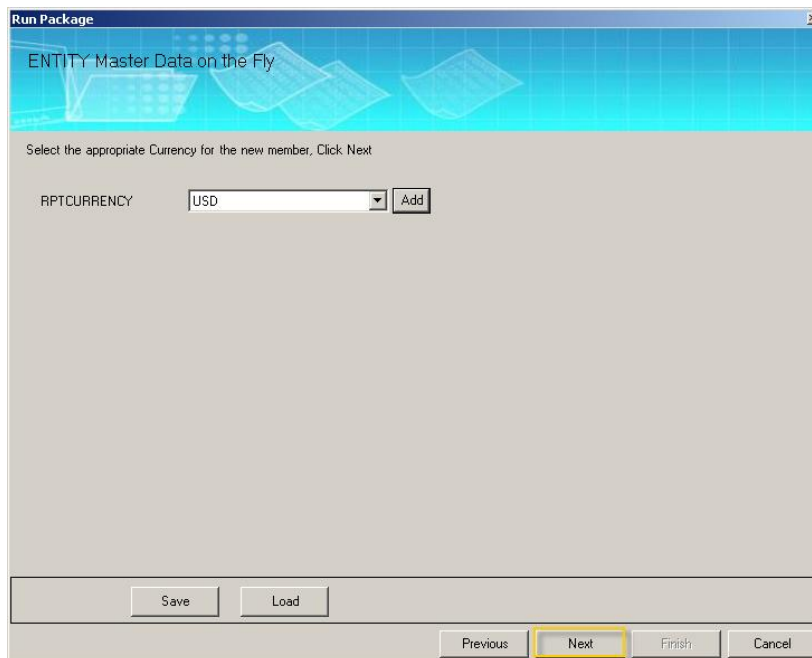
11. Click the "Add" button to select the template member.
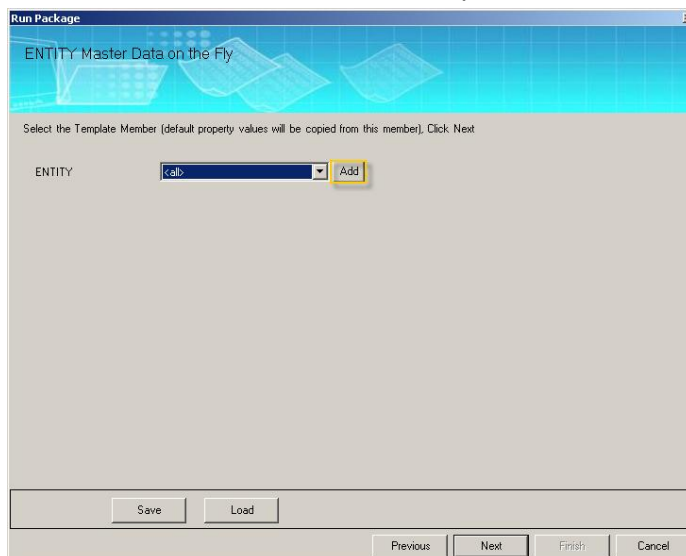
12. Check the box to the left of the "United States" member and click the Right arrow. Click "OK".
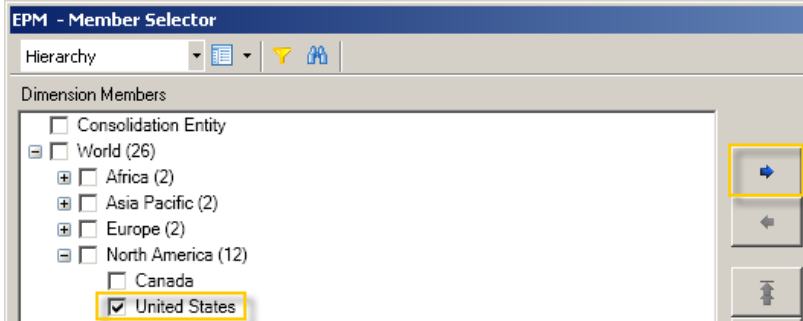
13. Click "Next".
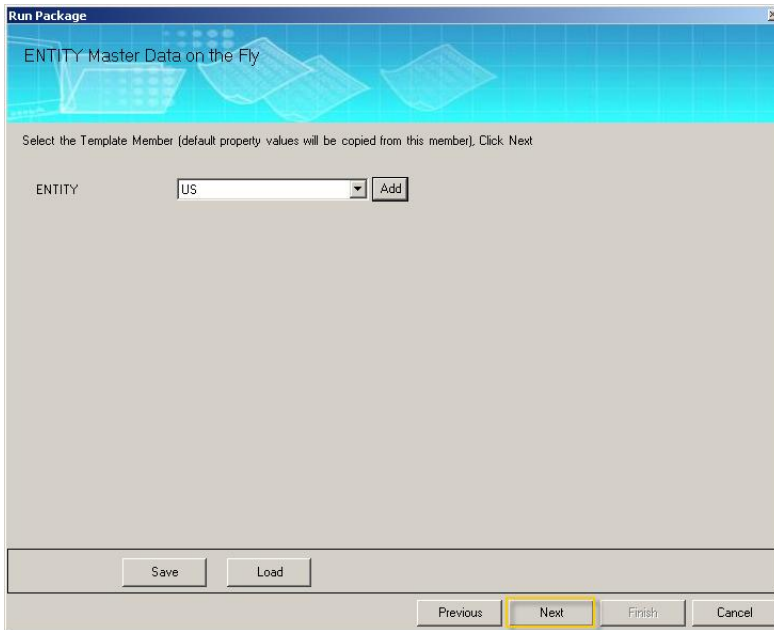
14. Click "Finish".
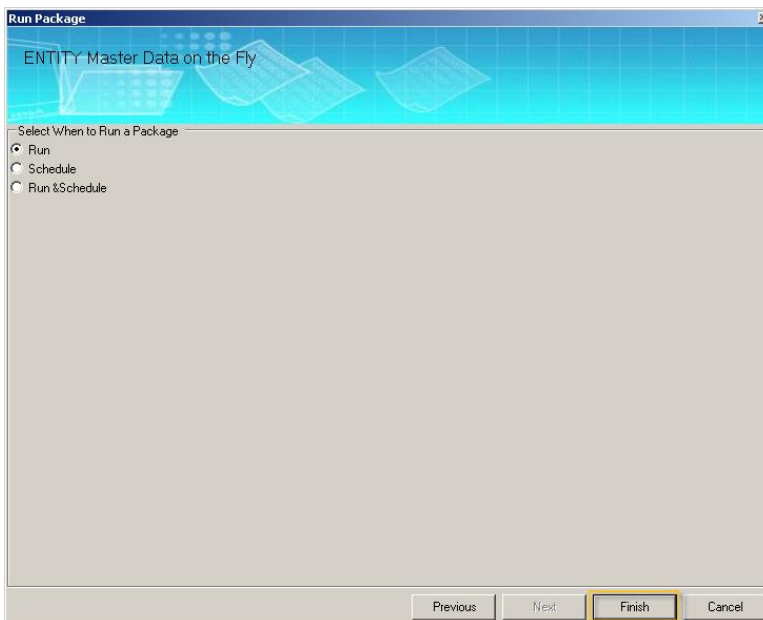
15. Click "View Status".
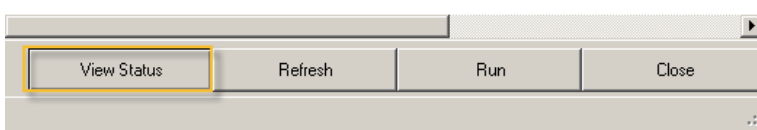
16. Double click on the package entry to view the log details.
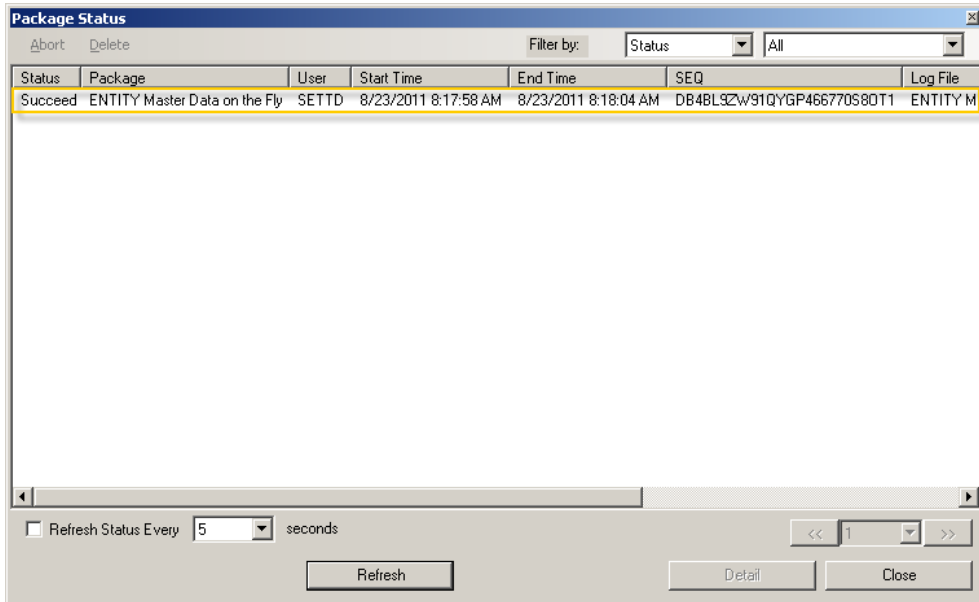
Note: If your package status is Running click the Refresh button until it's status is Succeed or Failed.

17. Review the Log.
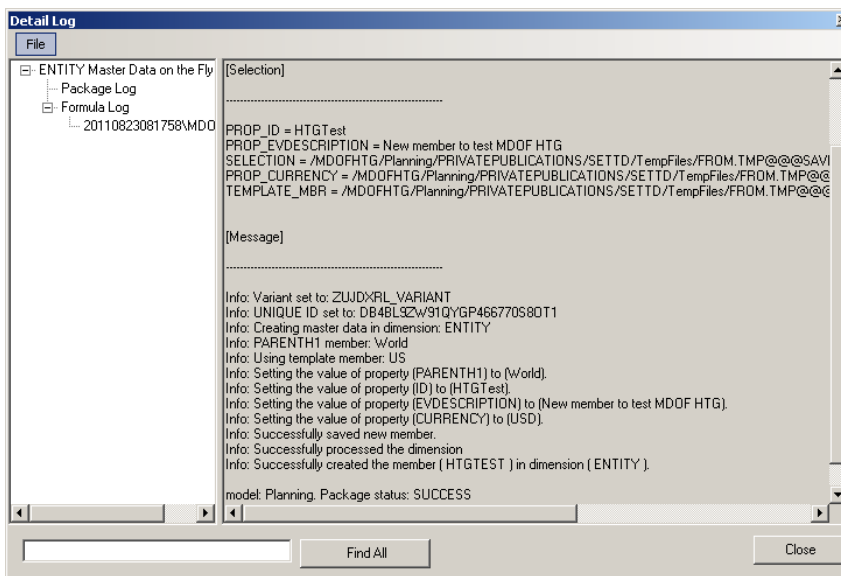
18. Close the package log, and all other data manager windows.

19. Refresh your dimension members by logging out and back into the EPM Add-In for Excel.

Note: An enhancement request to add a "Refresh Master Data" option in the EPM Add-In has already been entered and is tentatively scheduled for Q4 of 2011. After that point you should be able to update master data by clicking the appropriate button in the EPM Add-In.

20. Click the "ENTITY" drop down in the EPM Context and click "Select Other Members...".
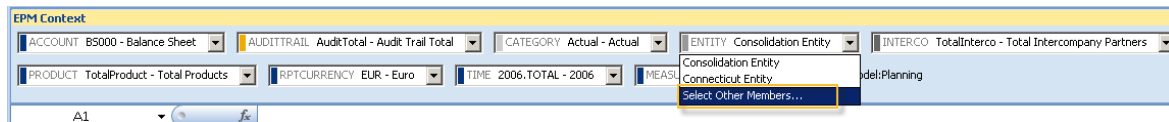
21. Expand "World". Note that newly added member and its description now appear as valid master data.
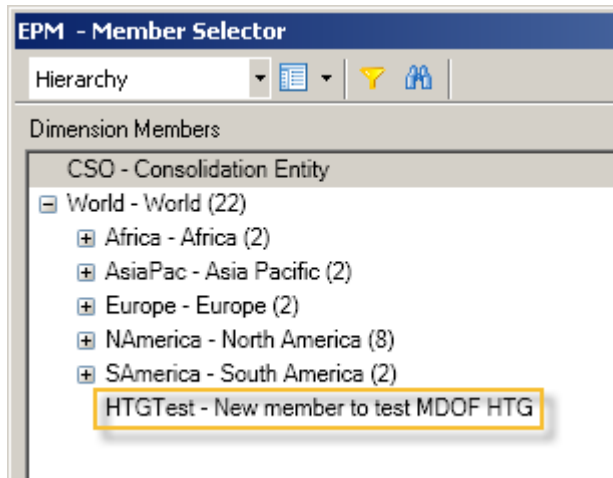
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