

HP IT Executive Scorecard

For the Windows® operating system

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Content Extension Guide

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Develop New Content Using the Integrated Development Environment

The IDE enables you to develop new entities, as well as extend existing content using the Architect and Engineer contexts.

The Integrated Development Environment (IDE) allows you to develop content and model Data Warehouse schema. Once the entities are defined and mapped, they are saved in a JSON file and run through the ETL Gen to produce the metadata and workflows. You can then package the data into Content Packs for use in the Data Warehouse.

Learn More

Entity

An entity in a database definition is a table, or the schema for the table. Each column of a table has a name and a data type associated with it.

Context

A context in the IDE is the project you create in order to perform content extension and definition. The IDE contains the Architect and Engineer Contexts.

Content Packs

The connection from the data source to the Data Warehouse is called a Content Pack. Each Content Pack extracts the data from the specific data source. Content Packs contain all the artifacts needed to connect to the relevant data source and gather data from that data source.

Tasks

This following describes the various IDE processes:

["IDE Main Page and End-to-End Flow" on page 10](#)

["Getting Started " on next page](#)

["Discover Data Evidence" on page 14](#)

["Define New Content Pack Project" on page 15](#)

["Define the Target Model" on page 17](#)

["Perform Architect Context IDE Tasks" on page 18](#)

["Perform Engineer Context IDE Tasks" on page 27](#)

["Manage Validation" on page 39](#)

["Generate the ETL" on page 40](#)

Getting Started

This document assumes basic data warehouse modeling knowledge, understanding of the ETL concepts, good familiarity with databases, as well as SAP Business Objects Data Services. When creating or extending content make sure that you have set up Executive Scorecard as well as installed the contents of the IDE DVD. For IT Executive Scorecard installation and administration details, see the *Administrator Guide*.

Required for DWH Architects

- Understanding of Business Intelligence tools, data warehouse modeling and database design principles.
- XS DWH Target schema.

Required for DWH ETL Engineers

- Understanding ETL principles.
- Experience with BODS.
- Familiarity with the source schema.

Required for DWH Integration Engineers

- Java programming skills

Prerequisite knowledge for performing content development tasks:

- HP Unified Data Model (UDM).
- Target Model: The existing supported model of the DWH
- Basic architecture of the data warehouse and the advantages of the templates.
- Basic familiarity with the Integrated Development Environment (IDE).
- BODS and data modeling.

IDE DVD Set up

The IDE DVD contains the following folders:

- **IDE:** Unzip the file and double-click **eclipse.exe** to install the IDE Eclipse application.
- **ETL-Gen:** Must be installed on an Apache Tomcat server. It is recommended to copy the file under the existing Tomcat directory on the DWH server. The path is **Start Menu > All Programs > Tomcat > Tomcat Directory**.
- **IDE Content:** Contains the OOTB Content Packs.
- **Tools:** Contains the packaging tools used to create a new Content Pack to put in the DWH and activate, after the IDE content extension process.

Planning Phase

The development of new content comprises the following steps:

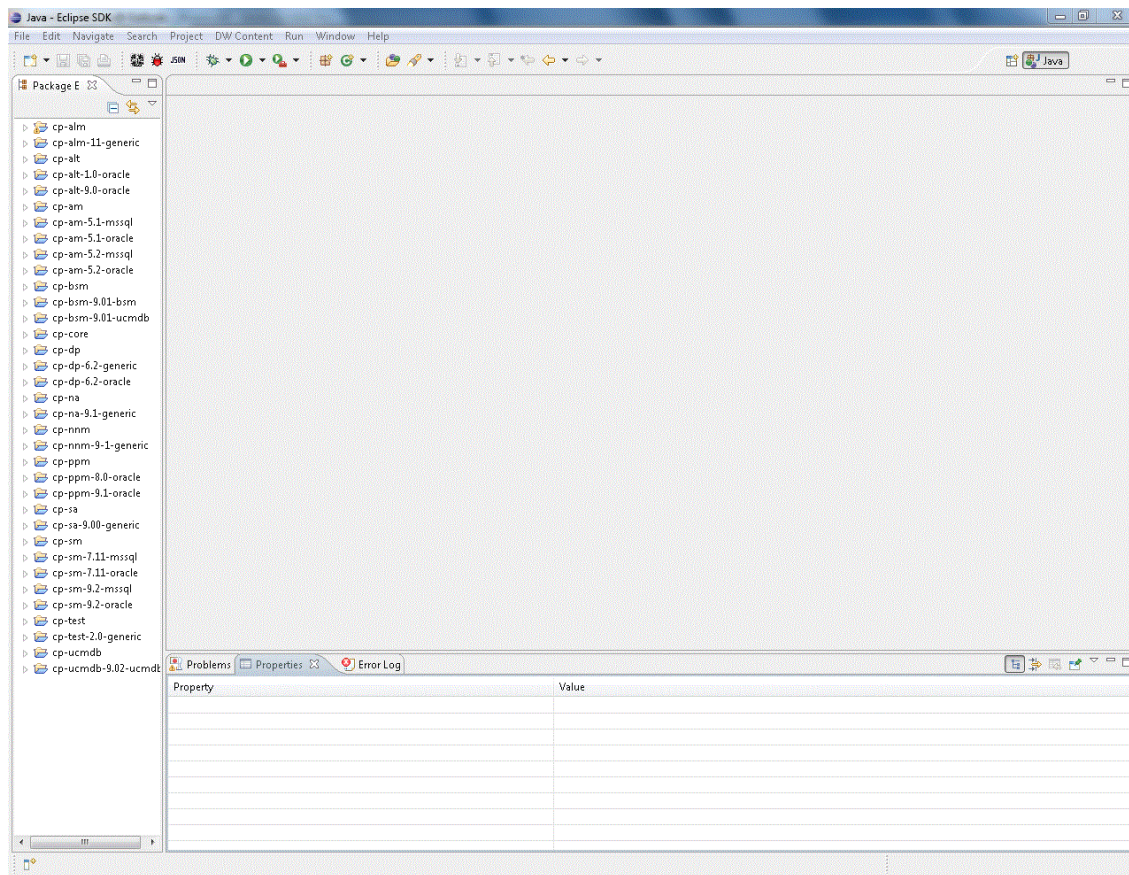
1. Data Evidence: Understanding what data needs to be included.
2. Define new Content Pack folders if required.
3. Modeling: The architect creates the Target model.
4. Data Source Integration: The engineer maps the data from the Source to Target.
5. ETL development and generation.
6. ETL orchestration and management through ABC.
7. Consolidation
8. Universe and Semantic layer adjustments.
9. KPIs additions and modifications.

IDE Main Page and End-to-End Flow




The IDE main page enables you to create contexts for the purpose of extending content to entities. The following describes the IDE main page and icons as well as the tasks and flow of the IDE process.

The IDE Eclipse Main Page









The IDE requires basic knowledge of Eclipse and its capabilities. The following describes the IDE layout and icons. Select **Window > Show View** to add to and change the view of the various tabs and areas.



User interface elements are described below (when relevant, unlabeled elements are shown in angle brackets>):

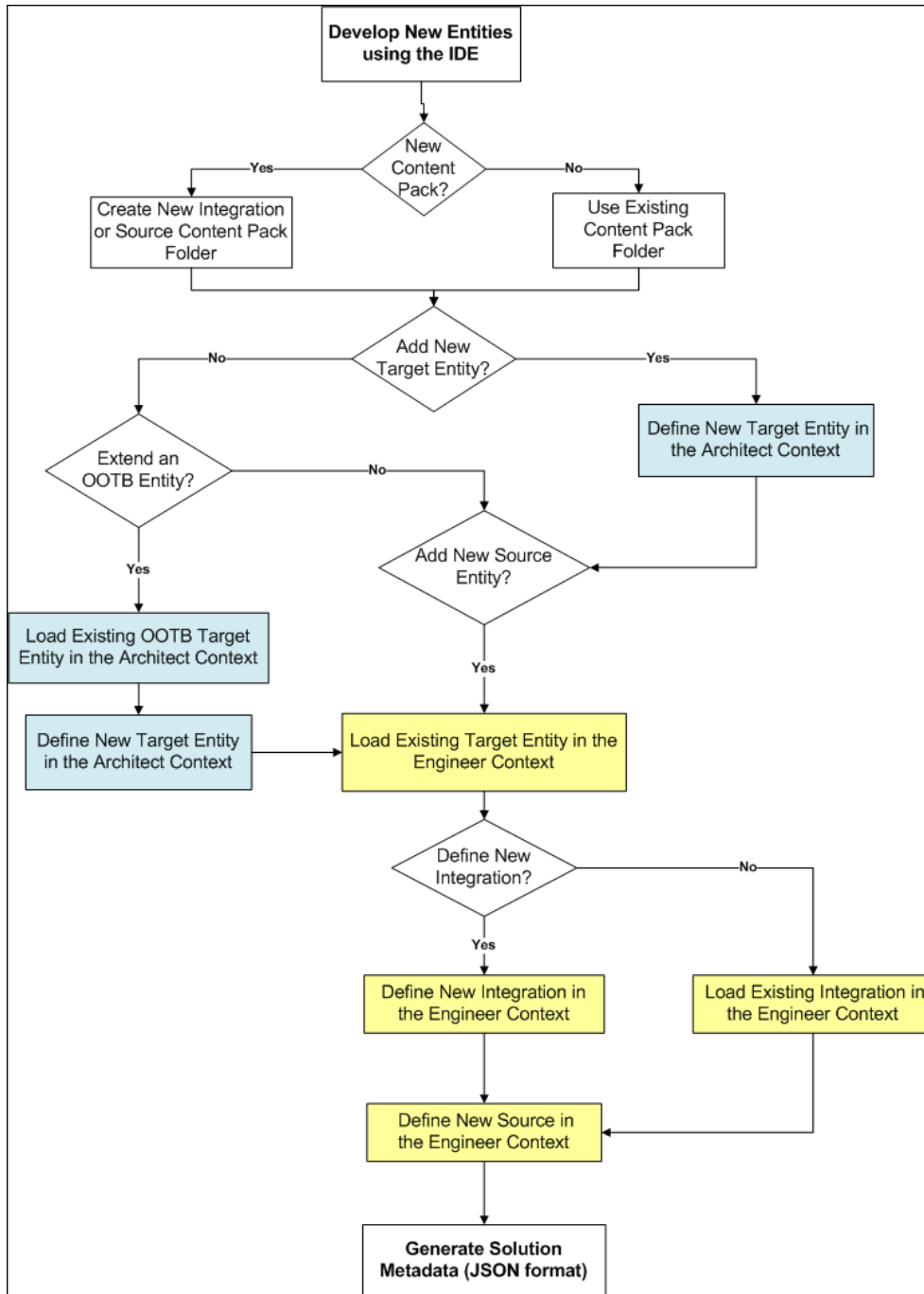
UI Element	Description
Package Explorer	A list all of the available loaded Content Packs and Contexts.
<Main Workspace>	A workspace is the general umbrella for managing resources in the Eclipse Platform
Problems	Displays validation errors and warnings.
Properties	Displays property tabs according to the selected entity in the context.
Error Log	Reports system errors.
	Report a Bug. Click and select the packages that are problematic and send the bug report.
	Generate JSON file. Click to begin the ETL Gen process. For details, see "Generate the ETL" on page 40.
	Save. Click to validate and save your mappings and configurations.

IDE Icons

Icon	Description
	Indicates a Fact entity column.
	Indicates a Dimension entity column.
	Indicates an association between Fact and Dimension entities.
	Indicates an association between Dimension entities.
	Indicates a column which exists both as a Fact and as a Dimension.
	Indicates an column before it has been designated a Fact or Dimension entity.
	Warning that appears when you save a problematic change to a mode that might cause an error at a later stage in the process. You can view the details by hovering over the icon on the model or in the Problems tab.
	Error that appears when there is a design problem with your model in a context. For example, the length of a column is too long. You can view the details by hovering over the icon on the model or in the Problems tab.

The IDE End-to-End Flowchart

The following illustrates the typical tasks and procedures in the IDE. The tasks correspond to the relevant tasks in the Architect and Engineer contexts.



Discover Data Evidence

It is necessary to understand and be familiar with the new data you want to develop. When there is a new source system involved, you must first understand how the data from the source appears and operates.

Data Evidence can be done as follows:

1. Understand how to extract the data.
2. Take sample files extracted from the source.
3. Examine different fields this source provides: It is important to recognize the fields and data which come from the source and to define the names of the fields as the source tables.
4. Define and plan in advance which extractors provide data for specific entities.
5. Understand variety, different lists of values, end-cases.
6. Observe data behavior over time:
 - a. Understand what happens with data across time – is it the same file, only different dates?
 - b. Sizes of rows and volumes by types of customers.
 - c. Identify how this data correlates with existing data in the Data Warehouse.

At the end you should have a good sense of what this data looks like and how to develop extraction code for it.
7. Identify:
 - a. What is the required data to be available in the Target schema to support required KPIs.
 - b. What is the data that can come out of the source (depending on technology).
 - c. Where do they meet in the middle, so eventually we have the outcomes of the extracted data and the DWH Target model.
 - d. For which columns do you want to preserve history.

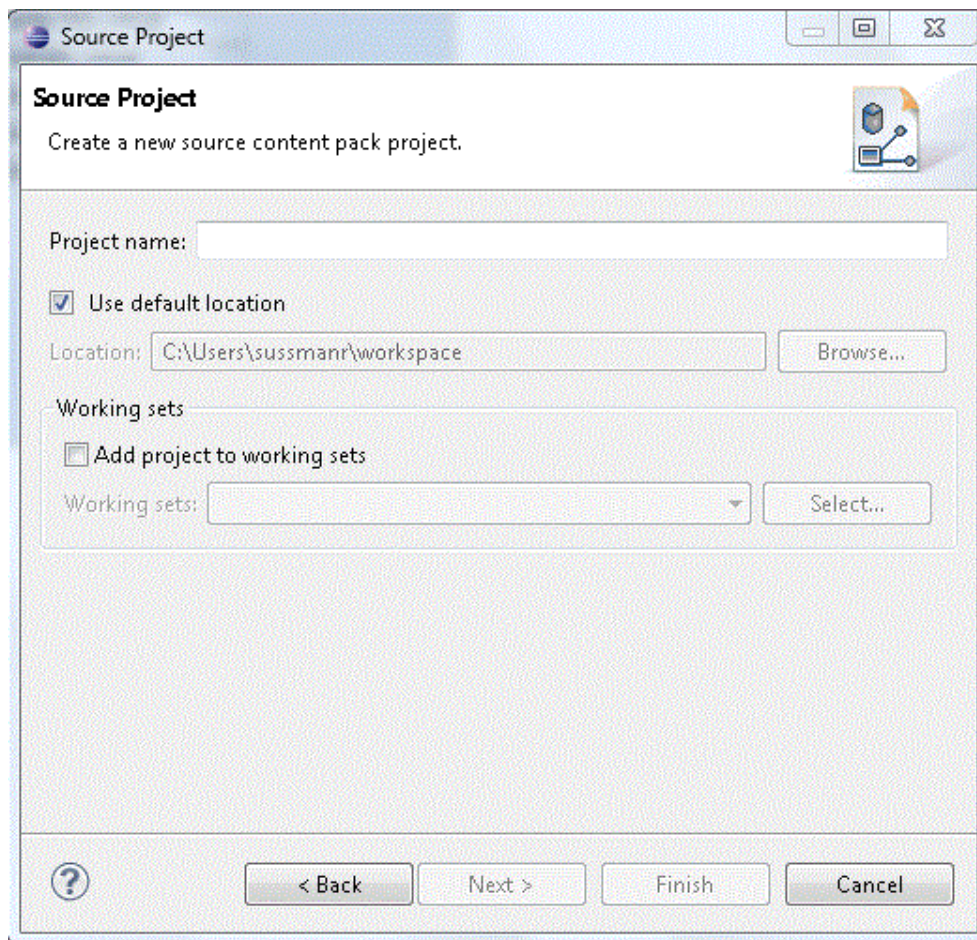
After mapping between the Source and the Target, the design process is complete.

Define New Content Pack Project

The IDE comes with OOTB Content Packs which you can use to add and extend content. You can also create projects based on data from new content folders, which you must manually add and define.

To create new projects from content folders:

1. Select **File > New > Other > DWH IDE > Content Pack**.
2. Select the type of project: **Source, Integration, or Target**.
3. Enter the project name for the new content.



Integration: cp- <name of the source product>. For example, cp-bsm

Make sure that after defining you can view the file under the Integration project
icp.dwmodelappintegration file.

Source: cp- <name of the source product>-<version>-<rdcms_type>. For example, cp-bsm-
9.01-ucmdb

Make sure that after defining you can view the file under the Source project scp.dwmodelappsources file.

Target: cp- <name>

4. Select the default location or browse to the location of the content folder.
5. Select **Add project to working sets** or select your new **Working Sets**.
6. Click **Next**.
7. Select the relevant Content Pack for the project:
 - For new Integration CP select the Target Content Pack for the project.
 - For new Source CP select the Integration Content Pack for the project.
8. Click **Finish**.
9. Proceed with defining the Architect and Engineer context projects. For details, see ["Perform Architect Context IDE Tasks" on page 18](#) and ["Perform Engineer Context IDE Tasks" on page 27](#).

Define the Target Model

Before working with a specific context, you should define the Target model and the related associations and mappings. The Target model describes the final version of the data that adheres to the design required by applications. Each table in the model contains both designed columns and static columns, which comprises the metadata, so that the administrator can have the visibility of ETL processing over the entity's data.

Target Model – Dimension or Fact: The target data models describe the format of the data that produces business intelligence analytics. The instantiated data models are dimension, fact, and hierarchy tables.

In the Architect context you use this model to link Dimensions and Facts to the Target entity.

Perform Architect Context IDE Tasks

The Architect context enables you to define a Target entity as well as link associations. Each Target entity in the Architect context contains columns of fact, or dimension and associations to other Target entities.

Architect contexts can contain one or more Target entities. Usually each Architect context includes several entities that are related to the same subject (context). Target entities can be included in several Architect contexts.

Note: It is recommended to create a separate general project in the Package Explorer for the Architect context files.

Learn More

The Architect Context enables the following:

- Create a new entity metadata which is translated into the Target model.
- Load an existing Target entity.
- Add columns which affect entity generation.
- Add associations between entities.
 - Link a Fact to Dimension
 - Link a Dimension to Dimension

Tasks

This section includes:

["To create a new Architect Context in the IDE:"](#) below

["To define a new Target entity:"](#) on next page

["To load an existing Target entity:"](#) on next page

["To add a column: "](#) on next page


["To link a Dimension to a Dimension:"](#) on next page

["To link a Fact to a Dimension:"](#) on next page


To create a new Architect Context in the IDE:

1. In the IDE main page, select **File > New > Other > DWH IDE Wizards > Architect Context** and click **Next**.
2. Select the parent folder and enter the file name for the context diagram and click **Next**.
3. Select the relevant Target Content Pack directory and click **Finish**.

To define a new Target entity:


1. In the Architect Context, in the palette area, select **New Target Entity** and click on the canvas.
2. Name the entity.
3. Add relevant columns to the entity.
4. Click  **Save**.

To load an existing Target entity:

1. In the Architect Context, in the palette area, select **Load Target Entity** and click on the canvas. The Resource Selector dialog box opens.
2. Select an entity. The entity is displayed with all of the previously added columns and dimensions.
3. Add relevant columns to the entity. You can then edit and configure columns in the Properties view.
4. Click  **Save**.

To add a column:

1. In the Architect Context, in the palette area, select **Target Column**.
2. Click in the Column area of your entity and enter the Column ID in the text box.

The column is added to the entity. You can then edit and configure columns in the Properties view.
3. Click  **Save**.

To link a Dimension to a Dimension:

1. In the Architect Context, in the palette area, click **Dimension to Dimension**.
2. Drag the arrow to from a Dimension to the Dimension you want it linked to.
3. The New Dimension to Dimension dialog box opens. The default name is displayed and can be edited. This relation links a Dimension entity to another Dimension.

Note: If you link to an entity from an existing association, you can connect using the arrow without naming the Associated Dimension.

The default Associated Dimension name is the Target entity.

4. Click  **Save**.

To link a Fact to a Dimension:

1. In the Architect Context, in the palette area, click **Fact to Dimension**.
2. Drag the arrow from the Fact column in the entity to the Dimension you want it linked to .

3. The New Fact to Dimension dialog box opens. The default name is displayed and can be edited. . This relation links a Fact entity to another Dimension.

Note: If you link to an entity from an existing association, you can connect using the arrow without naming the associated Dimension.

The default associated dimension name is the Target entity.

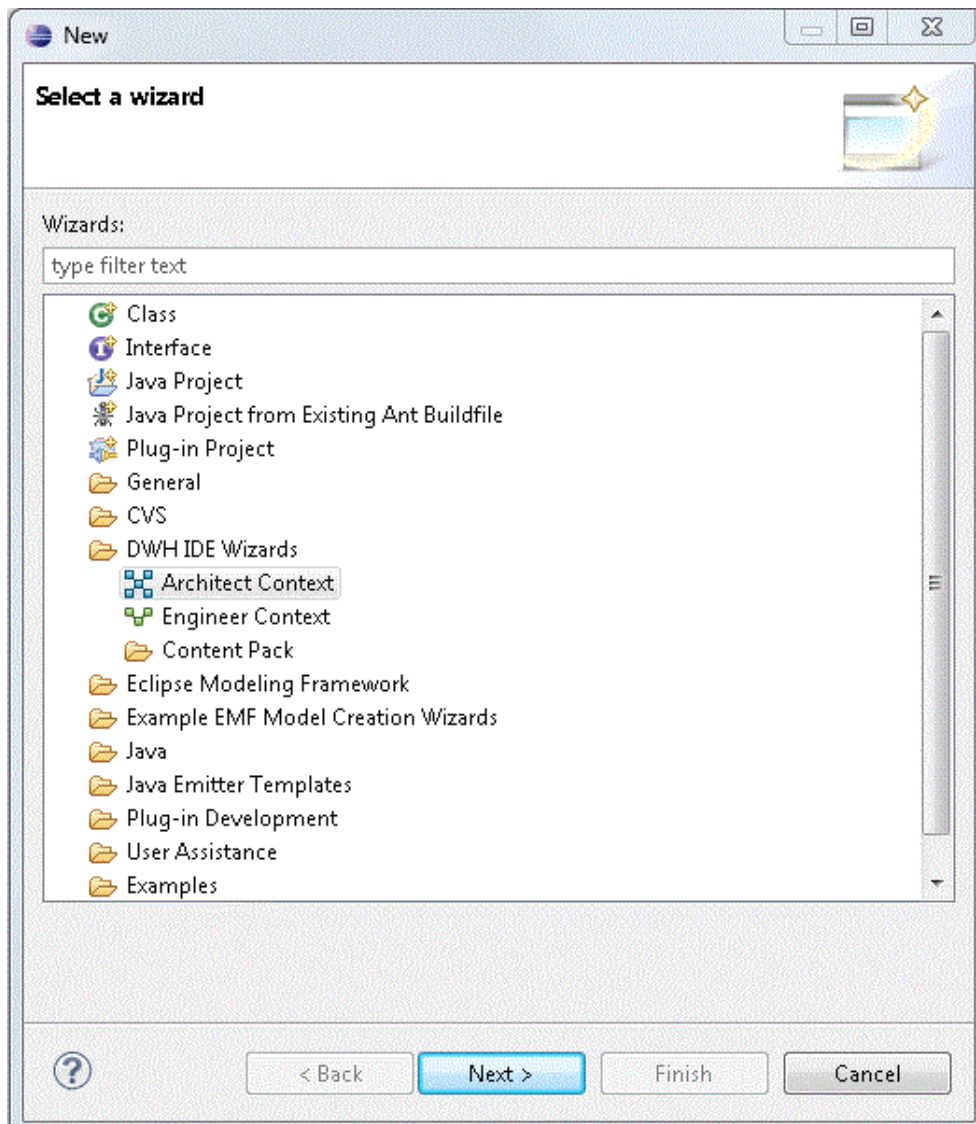
4. Click  **Save**.

UI Description

To access:

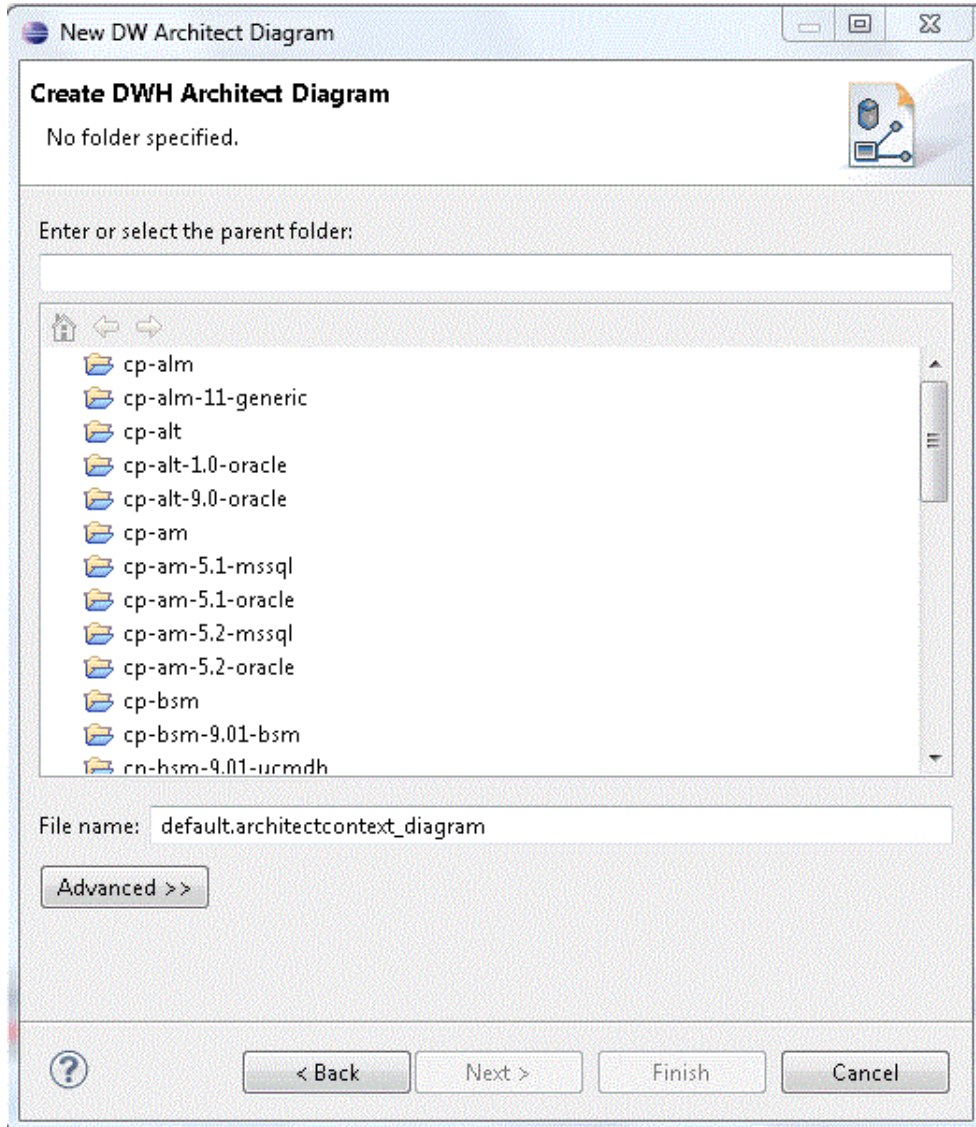
In the IDE main page, Select **File > New > Other > DWH IDE Wizards > Architect Context**.

Architect Context Wizard



Wizard Map	<p>The context wizard contains:</p> <p>Select a Wizard > New DW Architect Diagram > Target Content Pack selection.</p>
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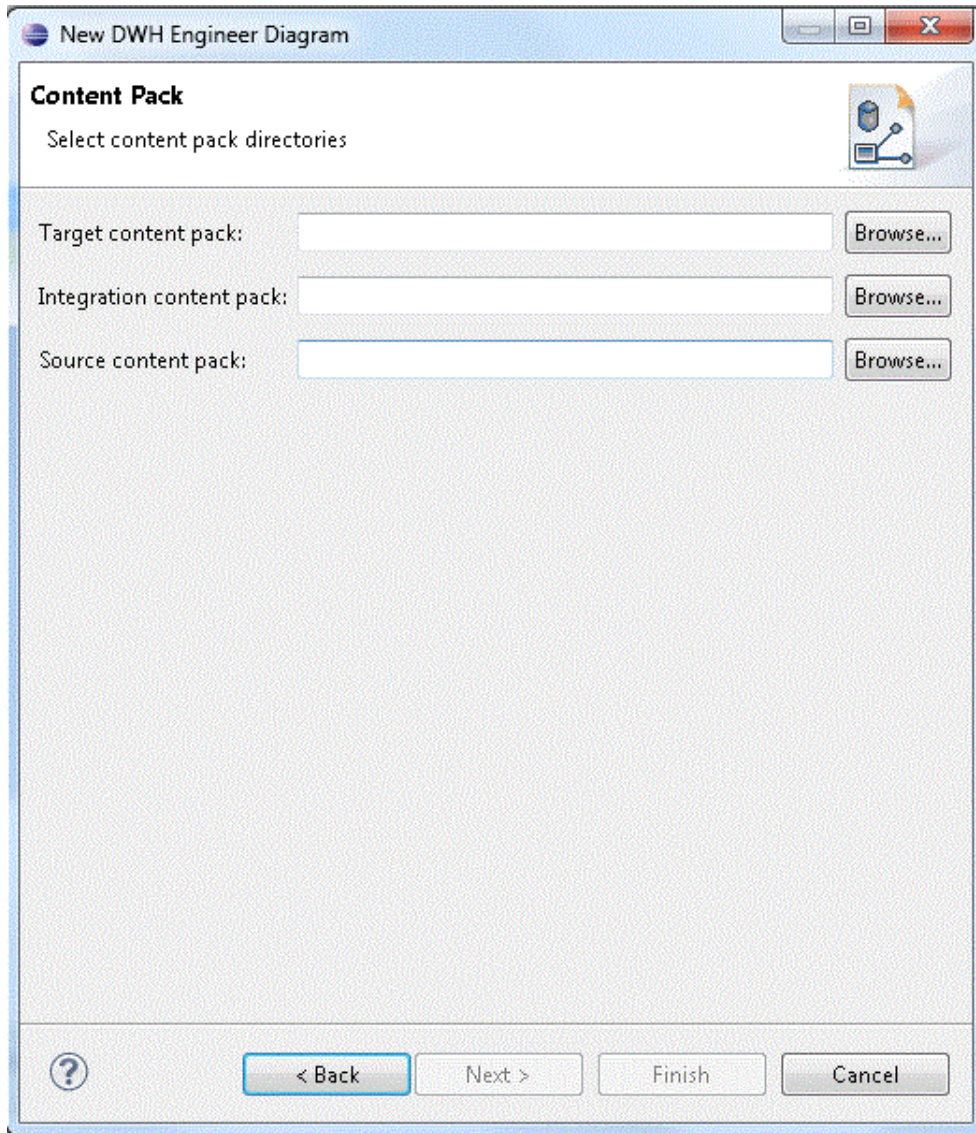
New DW Architect Diagram



User interface elements are described below:

UI Element	Description
Enter or select the parent folder	Select the folder from the folder list.
File Name	Enter a file name for your context diagram.

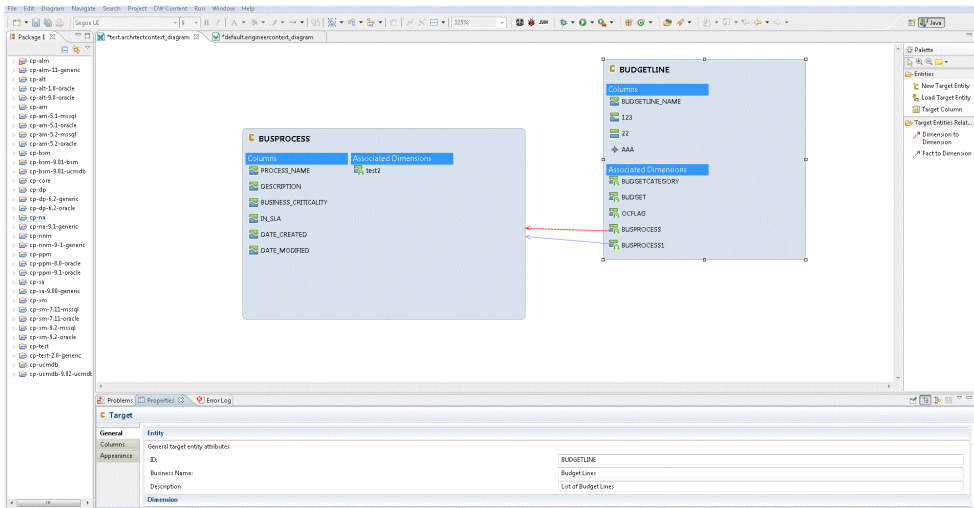
Target Content Pack selection.



User interface elements are described below:






UI Element	Description
Target Content Pack	Select or browse for the Target Content Pack directory.

Architect View



User interface elements are described below (when relevant, unlabeled elements are shown in angle brackets>):

Palette Area

UI Element	Description
<p>Target Entity</p>	<p>Contains the following Core entity options:</p> <ul style="list-style-type: none">  New Target Entity.  Load Target Entity. Opens the Resource Selector dialog box. Select the relevant entity for your model. <div data-bbox="462 546 1360 1144" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <p style="text-align: center; margin: 0;">Resource Selector</p> <div style="border: 1px solid gray; padding: 5px; min-height: 200px;"> <p>CORE</p> <p>PERIOD / PERIOD</p> <p>ACTUALCOST / Actual Cost Lines</p> <p>APPLICATION / Applications</p> <p>BACKUP_POLICY / Backup Policys</p> <p>BACKUP_SESSION / Backup Session</p> <p>BUDGET / Budgets</p> <p>BUDGETLINE / Budget Lines</p> <p>BUSINESS_APP_STATUS / Business Application Status</p> <p>BUSPROCESS / Business Process</p> </div> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </div> </div>  Target Column. Adds columns to entities. Column properties, for example column type, can be edited in the Properties tab. <p>Each added attribute impacts the relevant entity generations.</p>
<p>Target Entities Relation</p>	<p>Click a tool to create connections for building the model.</p> <ul style="list-style-type: none">  Dimension to Dimension. Link from one Dimension to another Dimension. A red arrow is displayed between the entities.  Fact to Dimension. Link from a Fact to a Dimension. This type of relation requires that the fact type was defined in the entity properties. A blue arrow is displayed between the entities.

Properties tab for Target entity and specific fields

To view the Properties tab, right-click on the specific entity and click **Show Properties View**.

You first configure the Target entity properties, and then the properties for each specific column.

UI Element	Description
General tab	<p>Displays the Entity, Dimension and Fact attributes for the target entity.</p> <p>General Target entity attributes:</p> <ul style="list-style-type: none"> • ID: The ID of the entity. • Business Name: The complete business name. • Description: Enter a description of the entity. <p>Dimension attributes:</p> <ul style="list-style-type: none"> • Type: Select Primary for a Dimension, select None for a Fact and select the fact attributes. • Conformed: Select True, False, or None. <p>Fact attributes:</p> <ul style="list-style-type: none"> • Type: Select an attribute for a Fact, select None for a Dimension and select the Dimension attributes.
Columns tab	<p>Displays information for each column in the Target entity:</p> <ul style="list-style-type: none"> • ID. The ID of the entity. • Business name. The complete business name. • Description. Enter a description of the entity. • Data Type. Varchar, Int 16, Int 32, Float, Localized Date Time • Length. Only for Varchar data type. • Null Allowed. Select if the field can have the value NULL. • SCD Type. Slowly Changing Dimension type can be either 1 or 2. Only for Dimension. SCD1: For update. SCD2: For preserving history. • Measure. Select only for Fact. • Calculation Formula. The calculation of the measure. • Summary. Select SUM, MIN, MAX, or AVG.
Appearance tab	<p>Displays font and appearance information.</p>

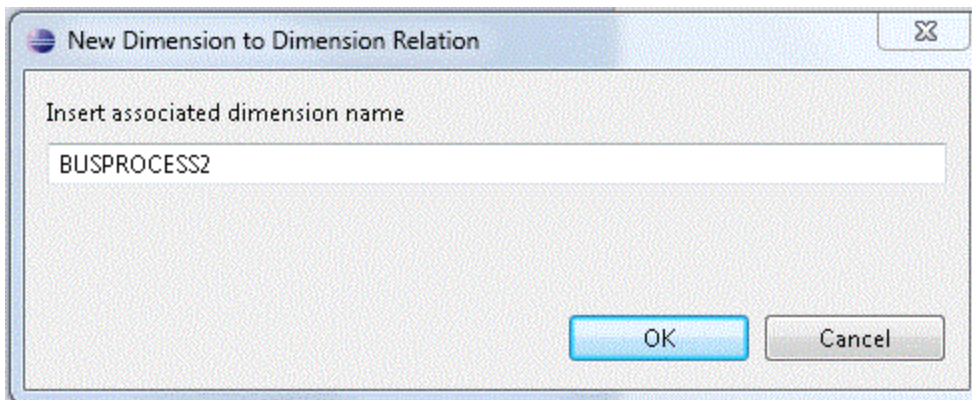
Properties tab for Associated Dimensions

To view the Properties tab, right-click on the specific entity and click **Show Properties View**.

UI Element	Description
Associations tab	Displays Dimension association information: <ul style="list-style-type: none"> • ID. The ID of the entity. • Business Name. The complete business name. • Description. Enter a description of the entity. • Type. Select Dimension, Fact, or Both. • SCD Type. For Dimension only. • From Target. The Target entity. • To Target. The Associated Dimension
Appearance tab	Displays font and appearance information.

New Associated Dimension Dialog Box

When you link to an unlinked Dimension, the following dialog box opens.



Edit an Associated Dimension name. The default is the Target entity name.

Perform Engineer Context IDE Tasks

The Engineer context enables you to define the integrations and how they are transformed and connected. This view defines the mapping relations for the entity from the source to the target.

Learn More

The Engineer context enables you to extend and add content from the Integration and Source Content Packs into the target model. Using a new or existing Target entity, you can add new or existing content from the Integration and Source entities. You then perform SSI and Source Integration mapping for new and pre-loaded entities. The Source, Integration and Target entities are mapped using the SSI Mapping connector, which creates a new SSI mapping entity. All further mapping is done to the new entity.

Note: All Source entities must be connected to an Integration entity.

Entities in the Engineer context are mapped as follows:

- **Source Entity:** Mapping to the correct source, meaning the version the data is extracted from.
- **Integration Entity:** Contains the mapping of all fields.
- **Target Entity:** Several consolidation entities can be consolidated into one entity.

It is recommended to map from the Source to the Target.

Source Extractors:

OOTB set of existing supported extractors are:

- **Generic Extractors**
 - **DB Extractor:** Supports MSSQL, Oracle and MySQL databases.
 - **File Extractor:** Supports general CSV file.
- **Source Specific Extractor**
 - **BSM API Extractor:** Supporting both GDE and REST calls
 - **DP CLI Extractor**
 - **SA SDK Extractor**
 - **NNM Optimized file Extractor:** Holds mass volumes of NNM files.

Connecting to the integration:

ETL Gen templates in the back-end generate integration templates which utilize File Based Integration (FBI).

Load the Source metadata to the IDE and then map it to the correct consolidation entity in the relevant fields.

Important Information

Note: Creating new Target entities with Associated Dimensions can only be done in the Architect context.

Tasks

This section includes:

"To create a new Engineer Context in the IDE:" below

"To define a new Target entity:" below

"To load an existing Target entity:" below

"To define a new integration entity:" on next page

"To load an existing integration entity:" on next page

"To define a new source entity:" on next page

"To load an existing source entity:" on next page

"To add a column:" on next page


"To map from the Integration to Target:" on page 30

You can create new integrations based on graphical diagrams, using the Engineer context in the IDE tool.

To create a new Engineer Context in the IDE:

1. In the IDE main page, select **File > New > Other > DWH IDE Wizards > Engineer Context** and click **Next**.
2. Enter or select the parent folder and enter the file name for the context diagram and click **Next**.
3. Select the Target, Integration, and Source Content Pack directories and click **Finish**.


To define a new Target entity:

1. In the Engineer Context, in the palette area, select **New Target Entity** and click on the canvas.
2. Name the entity.
3. Add relevant columns to the entity.
4. Click  **Save**.


To load an existing Target entity:

1. In the Engineer Context, in the palette area, select **Load Target Entity** and click on the canvas. The Resource Selector dialog box opens.
2. Select an entity. The entity is displayed with all of the previously added columns and

dimensions.

3. Add relevant columns to the entity. You can then edit and configure columns in the Properties view.
4. Click  **Save**.


To define a new integration entity:

1. In the Engineer Context, in the palette area, select **New Integration Entity** in the Integration section and click on the canvas. An integration entity is displayed.
2. Enter a name. An Integration entity is created.
3. Click **Integration Column** to add a column to the entity.
4. Perform mapping if required.
5. Click  **Save**.

To load an existing integration entity:

1. In the Engineer Context, in the palette area, select **Load Integration Entity** in the Integration section and click on the canvas. The Resource Selector dialog box opens.
2. Select an entity. The entity is displayed with all of the previously added mappings.


To define a new source entity:

1. In the Engineer Context , in the palette area, select **New Source Entity** in the Source section and click on the canvas. An Source entity is displayed.
2. Click **Source-Integration Relation** and drag the display arrow from the Source entity to an Integration entity. All columns from the Integration entity are copied to the Source entity with default values.
3. Click  **Save**.

To load an existing source entity:

1. In the Engineer Context , in the palette area, select **Load Source Entity** in the Source section and click on the canvas. The Resource Selector dialog box opens.
2. Select an entity. The entity is displayed with its mapped integration entity.

To add a column:

1. In the Engineer Context, in the palette area, select **Target Column** or **Integration Column**.
2. Click in the Column area of your entity and enter the Column ID in the text box.
The column is added to the entity.
3. Click  **Save**.

Note: Source data is replicated from the integration entity. If you add or delete columns from


the Integration, however, it is not automatically done in the Source.

To add: Once you have added the column in the properties tab, delete the mapping link and re-map from the Source to Integration.

To delete: Right-click the deleted column, delete the mapping link and re-map from the Source to Integration.

To map from the Integration to Target:

Once you have added columns to the Integration entity you can perform SSI mapping.

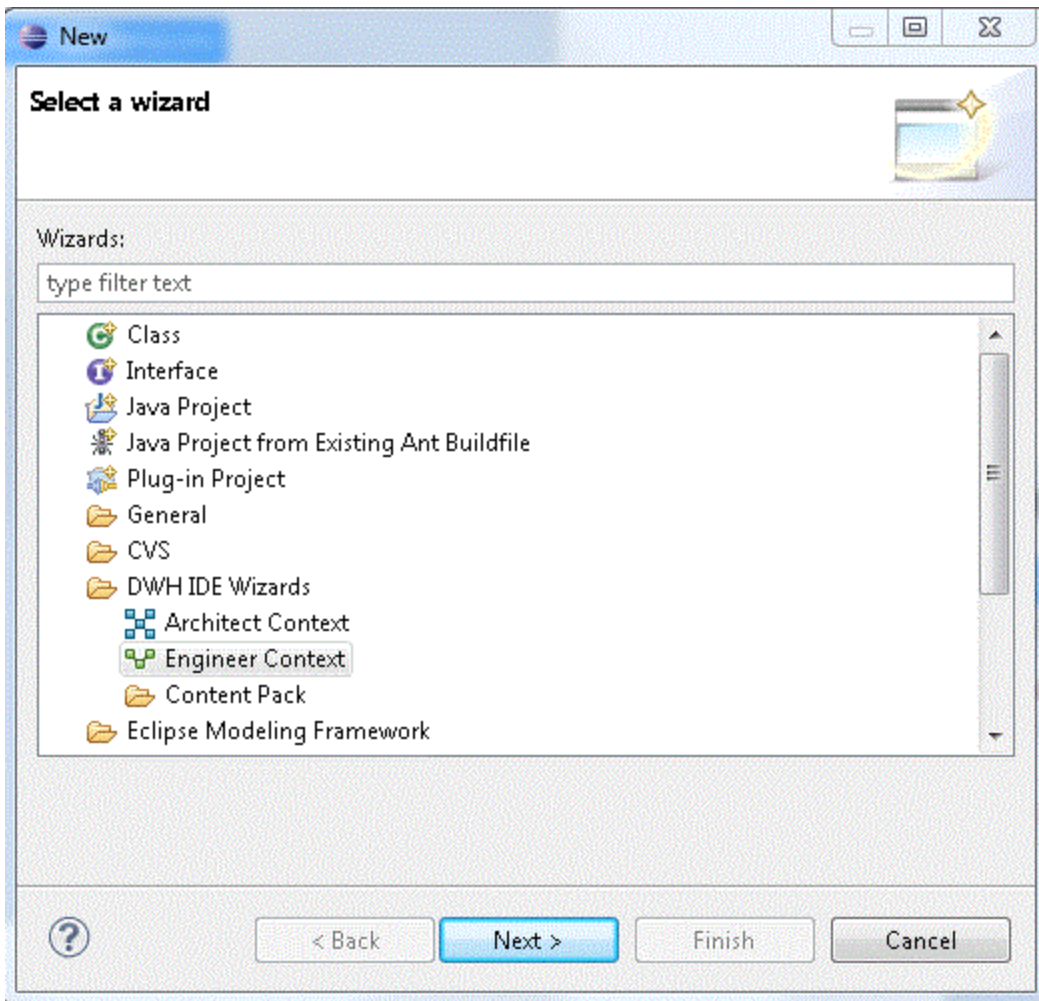
1. In the Engineer Context, in the palette area, click **Column Mapping** in the Relations section to map the Integration to the Target entity.
2. Drag the arrow from the Integration column to the Target column.
3. After you have performed the first SSI mapping, a transformation SSI entity is created to which you can perform further mapping. Any integration entity from the same CP that should be mapped to this Target, must be mapped to the transformation entity.
4. Click  **Save**.

UI Description

To access:

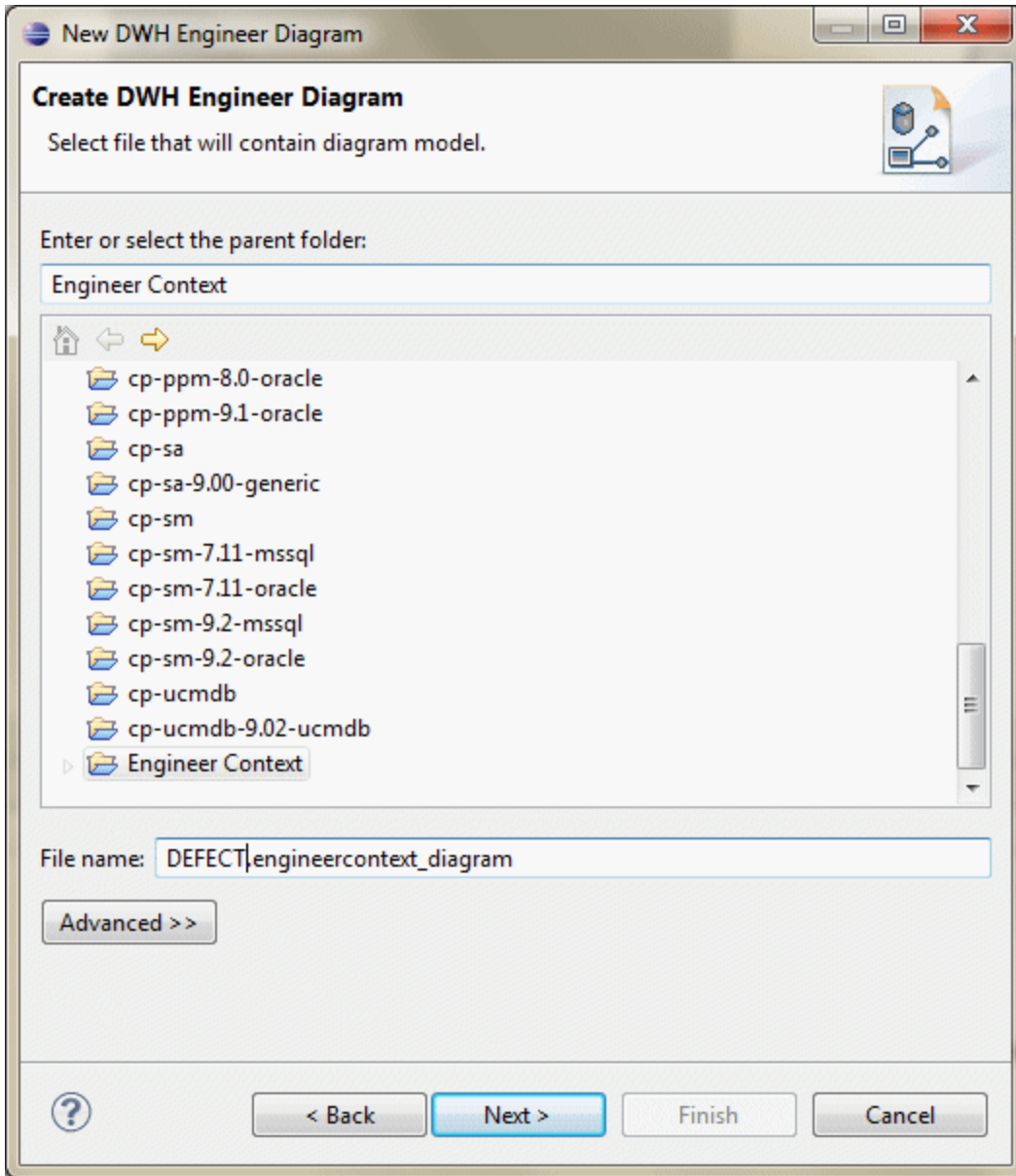
In the IDE main page, Select **File > New > Other > DWH IDE Wizards > Engineer Context** .

Engineer Context Wizard



Wizard Map	The context wizard contains: Select a Wizard > New DW Engineer Diagram > Content Pack selection.
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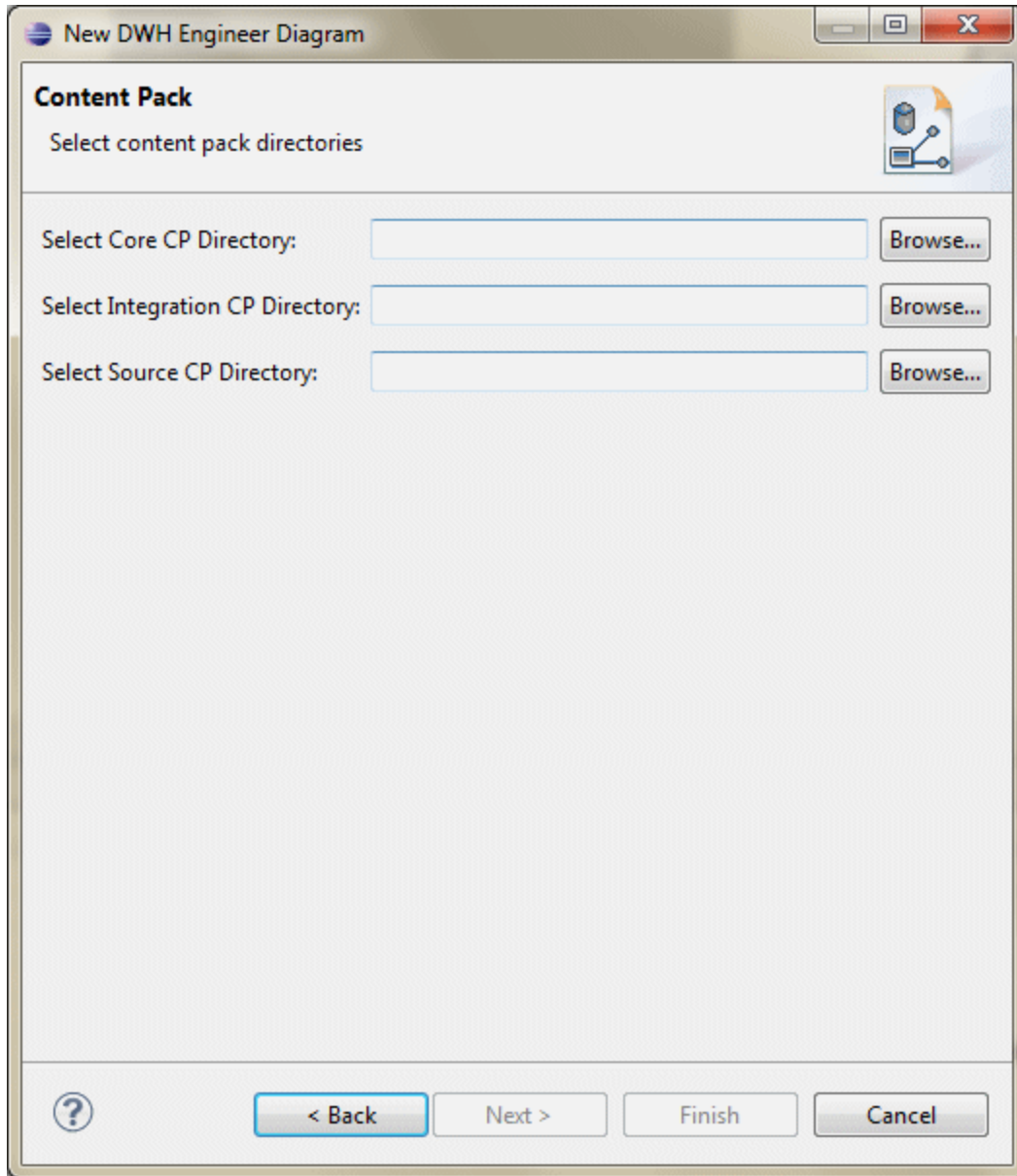
New DW Engineer Diagram



User interface elements are described below:

UI Element	Description
Enter or select the parent folder	Enter or select the folder from the folder list.
File Name	Enter a file name for your context.

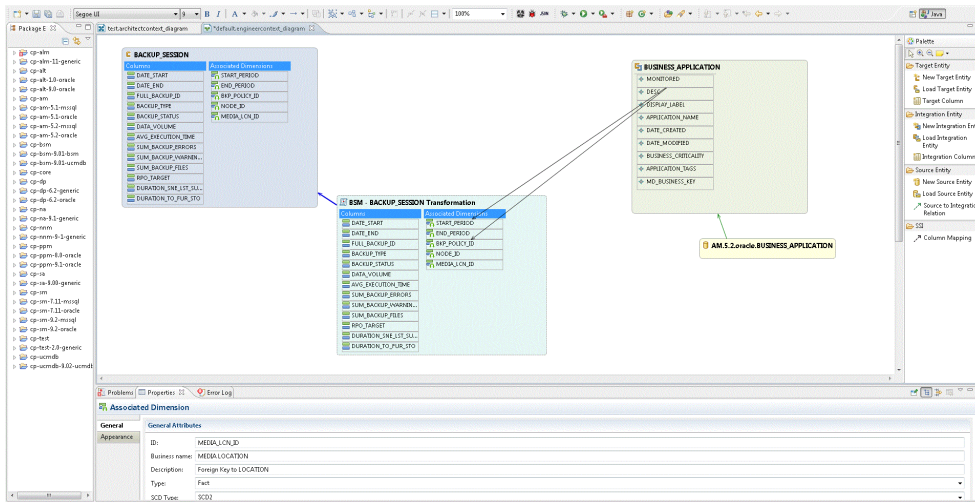
Content Pack selection






User interface elements are described below:




UI Element	Description
Select Target CP Directory:	Browse for the Target Content Pack directory.
Select Integration CP Directory:	Browse for the Integration Content Pack directory.
Select Source CP Directory:	Browse for the Source Content Pack directory.





Engineer Context



Palette Area

UI Element	Description
Target Entity	<ul style="list-style-type: none">  New Target Entity. Select to display a new Target entity.  Load Target Entity. Opens the Resource Selector dialog box. Select the relevant entity for your model. <div data-bbox="479 1060 1377 1661" style="border: 1px solid gray; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Resource Selector</p> <p>CORE</p> <p>PERIOD / PERIOD</p> <p>ACTUALCOST / Actual Cost Lines</p> <p>APPLICATION / Applications</p> <p>BACKUP_POLICY / Backup Polycys</p> <p>BACKUP_SESSION / Backup Session</p> <p>BUDGET / Budgets</p> <p>BUDGETLINE / Budget Lines</p> <p>BUSINESS_APP_STATUS / Business Application Status</p> <p>BUSPROCESS / Business Process</p> <p style="text-align: right;">OK Cancel</p> </div> <ul style="list-style-type: none">  Target Column. Adds columns to entities. Column properties, for example column type, can be edited in the Properties tab. <p>Each added attribute impacts the relevant entity generations.</p>

UI Element	Description
<p>Integration Entity</p>	<p>Contains the following Integration entity options:</p> <ul style="list-style-type: none">  New Integration Entity. Select to display a new Integration entity.  Load Integration Entity. Opens the Resource Selector dialog box. Select the relevant entity for your model. <div data-bbox="479 510 1075 905" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <p>Resource Selector</p> <div style="border: 1px solid gray; padding: 5px; min-height: 150px;"> <p>ALT</p> <p>AM</p> <p>BSM</p> <p>DP</p> <p>T_OBJECT / NODE</p> <p>T_MEDIA / LOCATION</p> <p>T_SESSION / T_SESSION</p> <p>NA</p> <p>NNM</p> <p>PPM</p> </div> <div style="text-align: right; margin-top: 5px;"> <input type="button" value="OK"/> <input type="button" value="Cancel"/> </div> </div> <ul style="list-style-type: none">  Integration Column. Adds columns to entities. Column properties, for example column type, can be edited in the Properties tab. <p>Each added attribute impacts the relevant entity generations.</p>

UI Element	Description
<p>Source Entity</p>	<p>Contains the following Source entity options:</p> <ul style="list-style-type: none"> •  New Source Entity. Select to display a new Source entity. •  Load Source Entity. Opens the Resource Selector dialog box. Select the relevant entity for your model. <div data-bbox="479 504 1075 898" style="border: 1px solid gray; padding: 5px; margin: 10px 0;"> <p>Resource Selector</p> <ul style="list-style-type: none"> ▷ AM.5.1.mssql ▷ AM.5.1.oracle ▷ AM.5.2.mssql ▷ AM.5.2.oracle ▷ BSM.9.01.BSM ▷ BSM.9.01.UCMDB ▲ DP.6.2.GENERIC <ul style="list-style-type: none"> T_MEDIA T_SESSION ▷ DP.6.2.oracle <p style="text-align: right;">OK Cancel</p> </div> <ul style="list-style-type: none"> •  Source to Integration Relation. The Source must be mapped to the Integration in order to map to the Target. A blue arrow is displayed between the entities.
<p>SSI</p>	<p>Click to map the displayed entities.</p> <ul style="list-style-type: none"> •  Column Mapping. Mapping between the Integration and Target columns. First time mapping is done from the Integration column to the Target column. A black arrow is displayed between the entities. <p>First-time mapping creates a new entity for SSI Transformation. Subsequent mappings are done to the new SSI Transformation entity.</p>

Properties tab for Integration

To view the Properties tab, right-click on the specific entity and click **Show Properties View**.

Note: Properties data is replicated in the Integration and Source columns. If you add or delete columns from the Integration, however, it is not automatically done in the Source.

To add: Once you have added the column in the properties tab, delete the mapping link and re-map from the Source to Integration.

To delete: Right-click the deleted column, delete the mapping link and re-map from the Source to Integration.

UI Element	Description
General tab	Displays the General entity attributes.
Columns tab	Displays column information: <ul style="list-style-type: none"> • ID. The ID of the entity. • Business name. The complete business name. • Description. Enter a description of the entity. • Data Type. Varchar, Int 16, Int 32, Float, Localized Date Time • Length. Only for Varchar data type. • Null Allowed. Select if the field can have the value NULL. • Business Key. Primary key of the Integration field order.

Properties tab for Source

To view the Properties tab, right-click on the specific entity and click **Show Properties View**.

UI Element	Description
General tab	<p>General attributes:</p> <ul style="list-style-type: none"> • ID. The entity ID. • Content Pack. The Source Content Pack information. <p>Data Source SQL Clauses:</p> <ul style="list-style-type: none"> • Group by. The section in the SQL Query for the aggregation. • Table Name/Join Condition. Default is Integration entity name. If you change the table name, you must also change it in the columns. Enter the Join Condition for an SQL query with join. • Where. Where to extract for the SQL query for filtering data from the source.

UI Element	Description
Columns tab	<p>Displays column information. The Source entity receives all of the Integration entity properties.</p> <ul style="list-style-type: none">• ID. The ID of the entity.• Type. Select Fixed, Direct, or Rule. If you select Fixed, you must enter a Fixed Value. if you select Rule, you must enter the Calculation Rule.• Not Applicable.• Table Name. Based on table name entered in the General tab.• Column Name. The field name. Must be what appears in the Source entity.• Fixed Value. The fixed value of the column.• Calculation Rule. The calculation rule of the column.

Manage Validation

The IDE performs validations on the entities created in the Architect and Engineer contexts. Make sure all entities have been configured properly according to the following validations:

Validation	Source	Integration	Core
Length of column names	Up to 30 characters	Up to 30 characters	Up to 26 characters
Length of entity names	Up to 30 characters	Up to 14 characters	Up to 20 characters
Prevent the option to generate JSON before the column type is defined (attribute/measure)			x
Prevent the option to generate JSON before the join/union table defined	x		
Prohibit using special characters in the Integration names and in the columns Database Constraints: <ul style="list-style-type: none"> Length identifier and suffixes must be up to 30 characters. First character must be a letter [a-z][A-Z]. Next characters should be a letter, a digit, or '_', '\$', or '#'. Must not start with one of the DW Platform reserved prefixes: MD_ or DI_. 	x	x	x
Make sure that the Business Key is specified. In case of more than one Business Key, they must be in order (1, 2, 3) without spaces in the numbering.		x	
Make sure that the column ID is unique.		x	x

Generate the ETL

You can generate the relevant schemas and ETLs that are required for the integration.

ETL Gen generates the required artifacts based on the modeling in the previous steps. The artifacts contain BODS workflows that are imported into the BODS repository as well as data models XML files that are imported into the Data Warehouse metadata repository. Once the metadata has been loaded, the schema generation mechanism performs the schema changes in the target and the staging databases.

To create a new entity with the ETL Gen:

1. Click **JSON** to generate the JSON file from your entities.
2. Install the ETL-Gen from the IDE DVD (IDE Prerequisite).
 - a. Open Apache Tomcat folder. It is recommended to use the Apache Tomcat that is installed on the DWH server.
 - b. Copy the ETL-Gen WAR file to the webapps folder of the Apache Tomcat directory.
 - c. Restart Apache Tomcat. A new folder called **etl-gen-9.30.00-SNAPSHOT** is displayed under the webapps folder of the ETL-Gen folder.
3. Generate the artifacts.
 - a. Copy the JSON file generated by the IDE to the schema-metadata folder found under the ETL-Gen folder.
 - b. Open ETL-Gen UI in your web browser (Firefox and Chrome are supported) by entering the following address:
<MACHINE_NAME>:<PORT>/etl-gen-9.30.00-SNAPSHOT/etl-generator.html.

ETL Generator

Use standard metadata Use custom ETL metadata

XS ETL Version 9.30 ▾

XS ETL Path GEN ▾

Product/Source Application BSM ▾

Product Version 9.01

Entity TESTETL

Generate ETL

- c. Select the **XS ETL Version (9.03/9.30)**, the **XS ETL Path (GEN/CUSTOM)**, and the **Product/Source Application**.
 - d. Enter the **Product Version** and **Entity** name you are adding.
 - e. Click **Generate ETL** (this step may take a few seconds).
 - f. Click **Continue** (this step may take some time), the generated files name are displayed on screen.
4. Copy the artifacts.
- a. Open the **generated_files** folder under the ETL-Gen folder.
 - b. Copy Content Pack folder to the ContentPacks folder in your DWH installation.
 - c. For new i-CPs:
 - i. Run dw_ds_automation with register task: dw_cp_register.bat -addInstance -name <CP_NAME>.
 - ii. Run dw_ds_automation with deploy task: dw_ds_automation.bat -cp <CP_NAME> -task Deploy.
 - iii. Run dw_ds_automation with activate task: dw_ds_automation.bat -cp <iCP name> -task Activate.
 - d. For previously activated i-CPs: Run dw_ds_automation with redeploy task.

- `dw_ds_automation.bat -cp <iCP name> -task Redeploy.`
- `dw_ds_automation.bat -cp Core -task Redeploy.`

