

enlighten 4.2.2

enCapture Administrator's Guide

Geospatial Engineering Solutions





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Key Terms

- **Column Description:** Description of a database column in enCapture. This defines the link between columns in enCapture and the actual database columns. These descriptions define the behavior of the user environment. For example, if you have a number column described in enCapture, the user environment will only accept numeric data input into the column's field.
- **Database Column:** Refers to an actual database column – that is, where the data is stored.
- **Entity:** Any object that is defined by attribute data. Examples of entities include water pipes, cars, and buildings.
- **Entity Description:** Combination of all the information (data sources, columns, etc.) that defines a single entity.
- **Entity Instance:** A specific occurrence (record) of an entity.
- **Event:** An action that has or will occur on an entity. Examples of events include routine services, compliance tests, and inspections.
- **Event Description:** Combination of all the information (data sources, columns, etc.) that defines a single event.
- **Event Instance:** A specific occurrence of a particular event (i.e. a single record in an event table).
- **Inheritance:** Allows a single entity to describe an object using attribute information from multiple tables/databases. It defines the data columns that will be inherited by an entity.
- **Lookup Table:** Restricts user input to a predefined list of values that is presented to users in the form of a dropdown list.
- **Relationship:** Defines how entities are related to map layers.



Overview

The enCapture administration tools provide the functionality for setting up and managing the enCapture data management system. These tools allow the administrator to:

- Define the data sources that contain entity and event data.
- Define lookup tables to be used for selecting predefined information.
- Create data validation rules.
- Create entity and event definitions.
- Define exactly how information is to be displayed to users for each entity and event.
- Specify user/group permissions for entities and events.

To access the enCapture administration area, log on to enlighten using the administrator username and password and go to the enlighten 'Administration View' (refer to the enlighten Administrator's Guide for instructions on how to do this). In the enlighten 'Administration View', click on the 'Map Administration' link. In the 'Map Administration' list that appears down the left side of the browser you will find a link for 'enCapture'. Click on this link and you will be presented with the enCapture administration options.

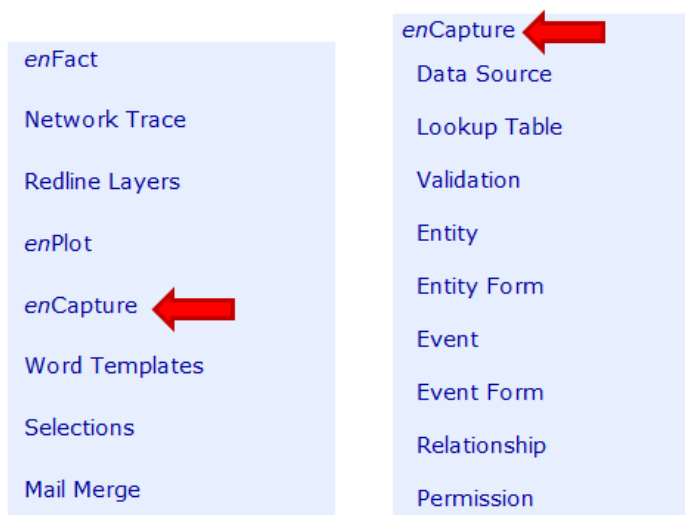


Figure 1. enCapture Administration Options



The data source administration area is used to store database connection information for the databases that contain entity and event tables.

To access this section, click on the 'Data Source' link in the enCapture administration list.

Define a New Data Source

To define a new data source, complete the following steps:

1. In the 'Data Source' administration screen, press the 'New' button.

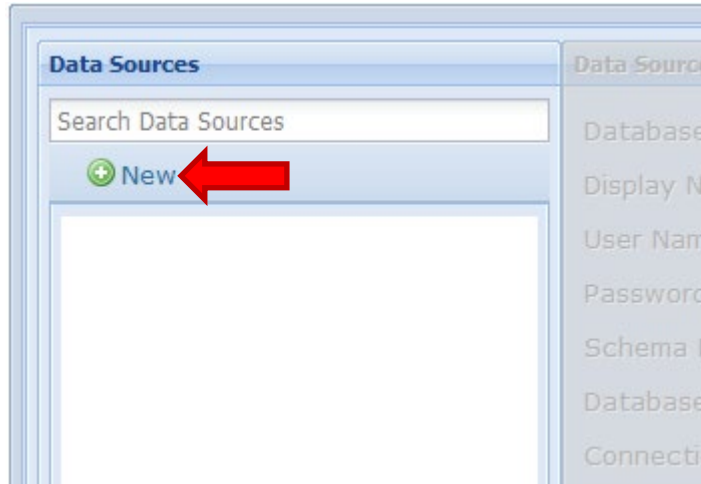
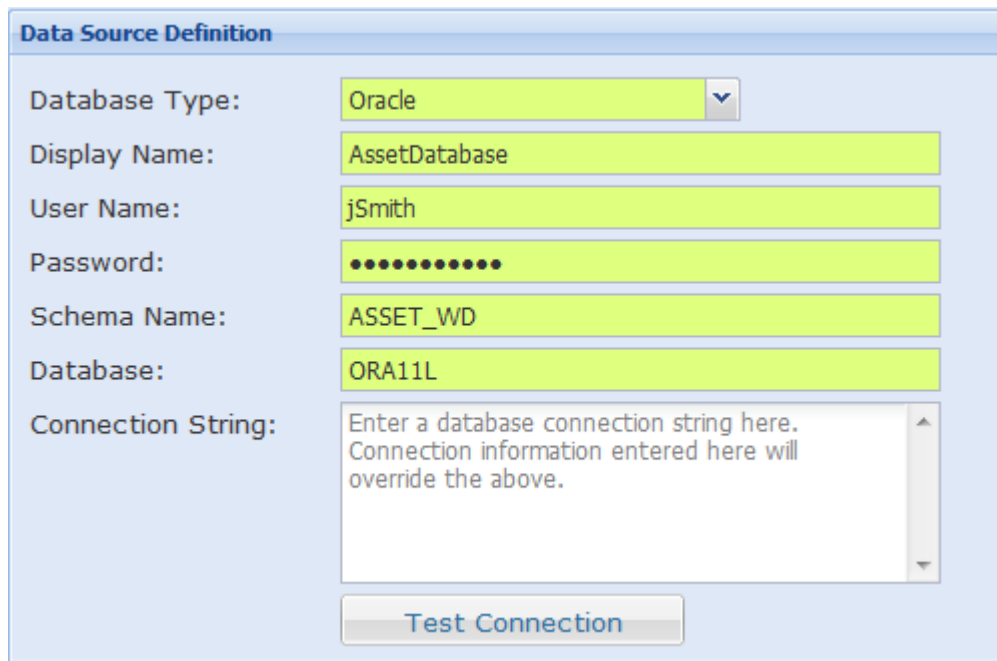


Figure 2. Defining a New Data Source

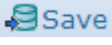
2. Enter the required database connection information in the 'Data Source Definition' pane. A definition for each of the required fields is listed below:
 - **Database Type:** select 'SQL Server' or 'Oracle'.
 - **Display Name:** type a name for the database connection. This name will be used to reference the data source throughout the rest of the enCapture administration area.
 - **User Name:** user name for database login.
 - **Password:** password for database login.
 - **Schema Name:** the name of the database schema to connect to.
 - **Database:** the name of the database to connect to.
 - **Connection String:** if more complex connection parameters are required, specify a full database connection string here. Anything entered here will override the connection parameters entered above.



The 'Data Source Definition' dialog box contains the following fields and controls:

- Database Type:** A dropdown menu with 'Oracle' selected.
- Display Name:** A text field containing 'AssetDatabase'.
- User Name:** A text field containing 'jSmith'.
- Password:** A text field containing ten dots (••••••••••).
- Schema Name:** A text field containing 'ASSET_WD'.
- Database:** A text field containing 'ORA11L'.
- Connection String:** A large text area with the placeholder text: 'Enter a database connection string here. Connection information entered here will override the above.'
- Test Connection:** A button located at the bottom right of the dialog.

Figure 3. Data Source Definition

3. Press the 'Test Connection' button. If the correct connection parameters have been entered you will be presented with a 'Connected Successfully' message.
4. Press the 'Save'  button located in the top-right of the 'Data Source' administration screen to save the connection information. The new data source will now appear in the 'Data Sources' list in the left pane of the admin screen.

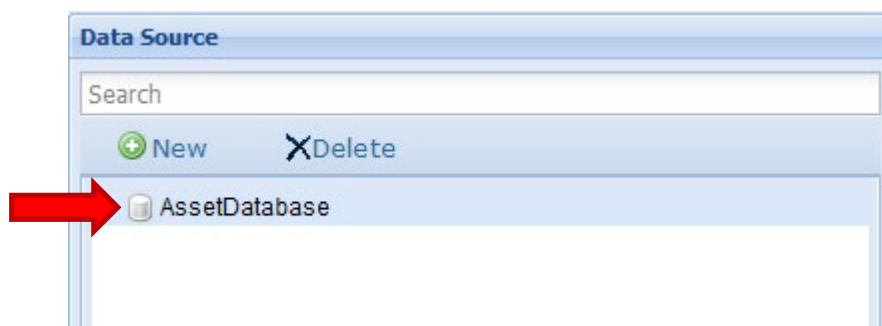


Figure 4. Data Source List

Modifying a Data Source Definition

To modify a data source definition, simply select the data source in the 'Data Sources' list in the left pane of the admin screen and update the required values in the 'Data Source Definition' section.

If a data source has entities, events, or lookup tables defined against it, the following fields will not be available for editing:

- Database Type
- Schema Name
- Database

These fields become disabled so as that data connectivity for entities, events, and lookups cannot be broken.

To view the entities, events, and lookup tables that reference the selected data source, select the applicable tab in the bottom right section of the 'Data Source' admin page.

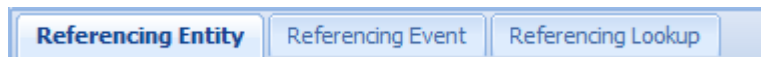


Figure 5. Referencing Entity Tab

Deleting a Data Source Definition

To delete a data source definition from your enCapture configuration, follow the steps listed below:

1. Select the required data source in the 'Data Sources' list in the left pane of the admin screen.
2. Press the 'Delete' button located above the 'Data Source' list. This will mark the selected data source record for deletion by putting a line through it and setting its text to grey.

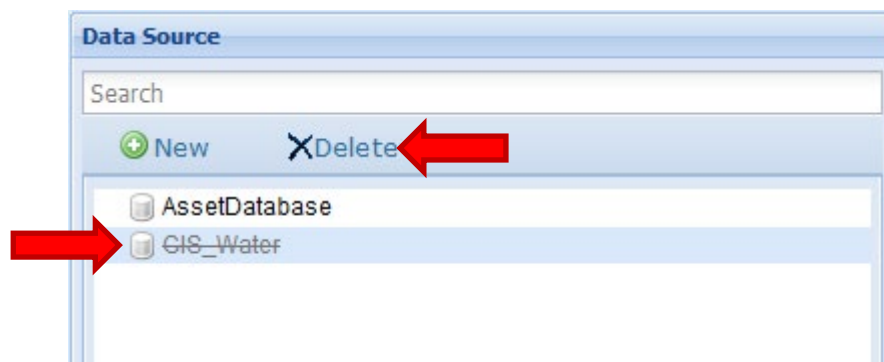
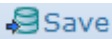


Figure 6. Deleting a Data Source Definition

3. To complete the deletion, press the 'Save'  button located in the top-right of the 'Data Source' administration screen.
- **Note:** Data sources that have entities, events, and/or lookup tables defined against them cannot be deleted from your enCapture configuration. To delete these data source definitions, you must first un-assign/delete all entities, events, and lookup tables that reference it. To view the entities, events, and lookup tables that reference the selected data source, select the applicable tab in the bottom right section of the 'Data Source' admin page.

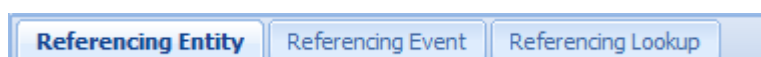


Figure 7. Referencing Entity Tab



Lookup Table

The Lookup Table administration area is used to define tables that will be used as input value lists for specifying attribute values in the user environment.

To access this section, click on the 'Lookup Table' link in the enCapture administration list.

Define a New Lookup Table Definition

To define a new lookup table definition, complete the following steps:

1. In the 'Lookup table' administration screen, press the 'New' button.

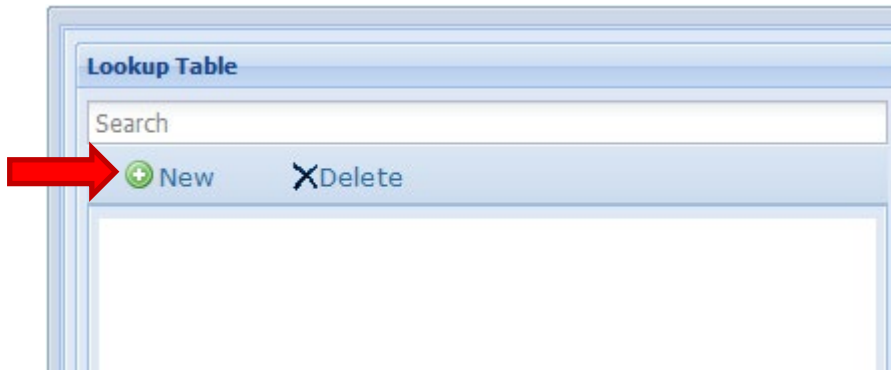


Figure 8. New Lookup Table

2. Enter the required information in the 'Lookup Table Definition' pane. A definition for each of the required fields is listed below:
 - **Data Source:** Select the data source where the lookup table resides.
 - **Lookup Table:** Select the required lookup table.
 - **Display Column:** Select the column that contains the values you wish to be displayed in a list to the users.
 - **Value Column:** This defines the column that contains the values that will be written to your database.

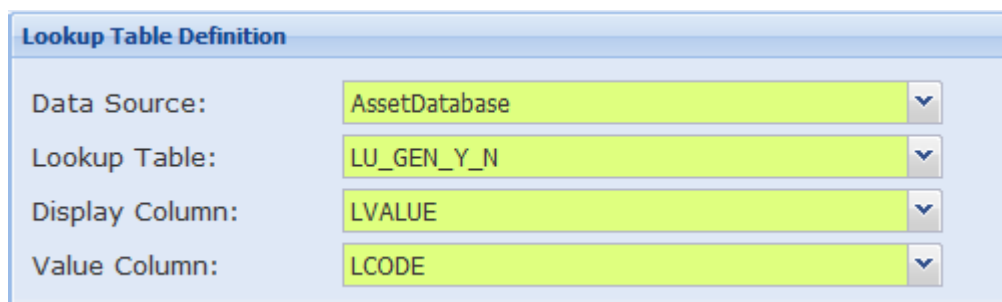
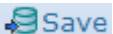
The image shows a 'Lookup Table Definition' pane. It contains four rows, each with a label and a dropdown menu. The first row is 'Data Source:' with 'AssetDatabase' selected. The second row is 'Lookup Table:' with 'LU_GEN_Y_N' selected. The third row is 'Display Column:' with 'LVALUE' selected. The fourth row is 'Value Column:' with 'LCODE' selected. All dropdown menus are highlighted in yellow.

Figure 9. Lookup Table Definition

3. Press the 'Save'  button located in the top-right of the 'Lookup Table' administration screen to save the lookup table definition. The new lookup table definition will now appear in the 'Lookup Table' list in the left pane of the admin screen.

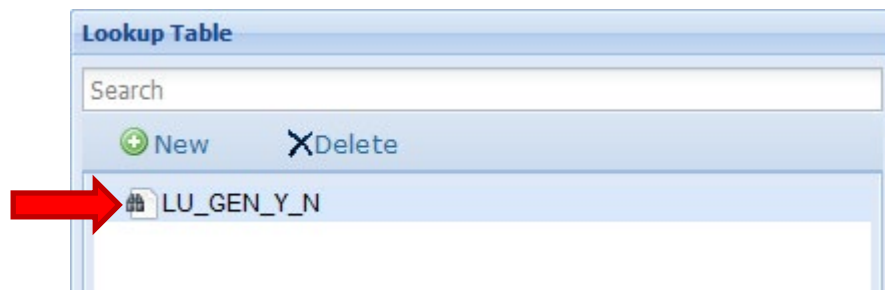


Figure 10. Lookup Table List

Modifying a Lookup Table Definition

To modify a lookup table definition, simply select the lookup table in the 'Lookup Table' list in the left pane of the admin screen and update the required values in the 'Lookup Table Definition' section.

If a lookup table has been assigned to any entity or event columns, the following fields will not be available for editing:

- Data Source
- Lookup Table

These fields become disabled to avoid disrupting the use of an already implemented lookup table.

To view the entity and event columns that reference the selected lookup table, select the applicable tab in the bottom right section of the 'Lookup Table' admin page.



Figure 11. Referencing Entity Column Tab

Deleting a Lookup Table Definition

To delete a saved lookup table definition from your enCapture configuration, follow the steps listed below:

1. Select the required lookup table in the 'Lookup Table' list in the left pane of the admin screen.
2. Press the 'Delete' button located above the 'Lookup Table' list. This will mark the selected record for deletion by putting a line through it and setting its text to grey.

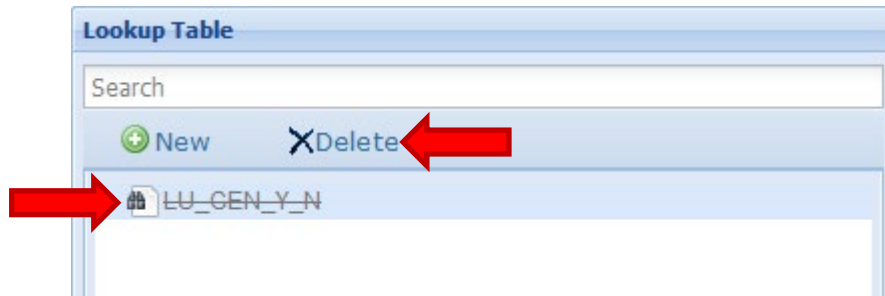


Figure 12. Deleting a Lookup Table


3. To complete the definition deletion, press the 'Save'  button located in the top-right of the admin screen.
- **Note:** Lookup tables that are referenced by entity and/or event columns cannot be deleted from your enCapture configuration. In this case, you have to un-assign the lookup table from all of the columns that reference it before proceeding with the deletion. To view the entity and event columns that reference the selected lookup table, select the applicable tab in the bottom right section of the 'Lookup Table' admin page.



Figure 13. Referencing Entity Column Tab



Validation scripts can be used to validate data entry in the user environment. Any attribute values that violate the rules specified in the applicable validation scripts will be flagged as errors and will require the user to correct the values before saving of the data will be permitted.

Creation of validation scripts occurs in the 'Validation' administration area of enCapture. Regular expressions (JavaScript) are used to define the scripts. Several common use validation scripts are shipped with enCapture for your convenience. You can also create any number of your own scripts to tailor the validation rules to your data needs.

To access this section, click on the 'Validation' link in the enCapture administration list.

Define a Validation Script

To define a new validation script, complete the following steps:

1. In the 'Validation' administration screen, press the 'New' button.

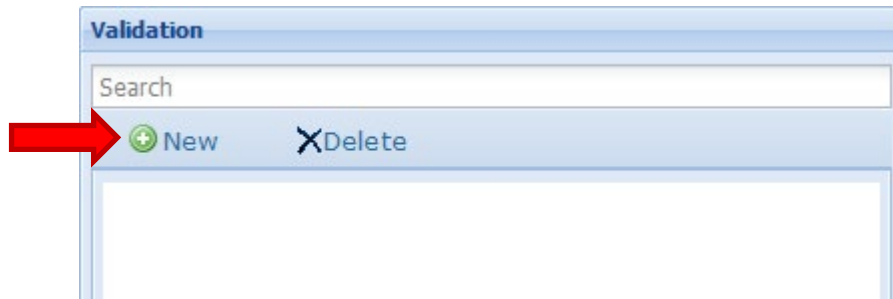
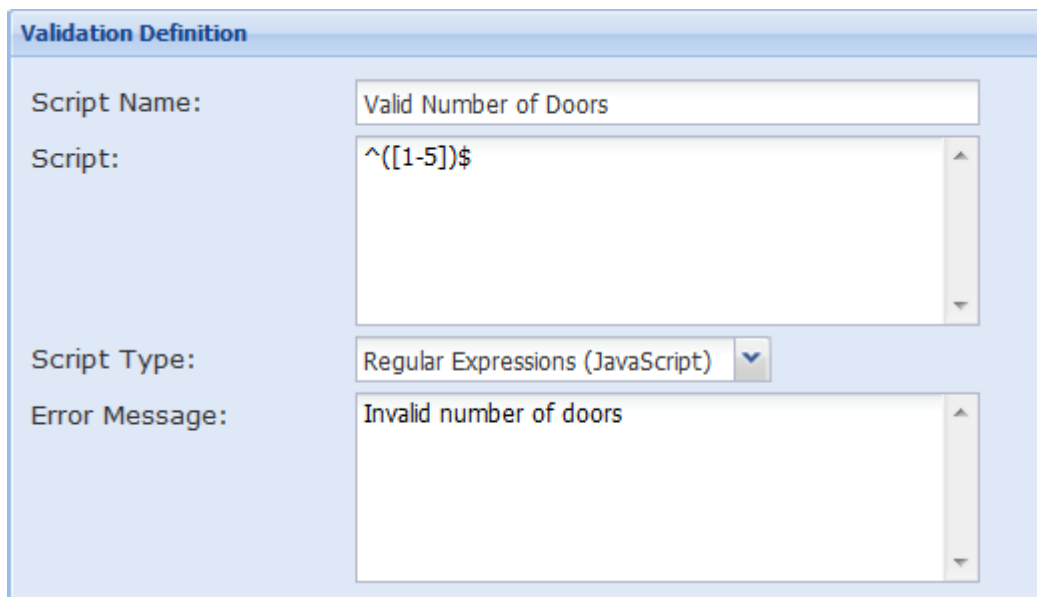


Figure 14. New Validation Script

2. Enter the required information in the 'Validation Definition' pane. A definition for each of the required fields is listed below:
 - **Script Name:** Name of the validation script. This is used in the 'Entity'/'Event' admin screens to assign the script to selected attribute fields.
 - **Script:** This is where you enter the Regular Expression (JavaScript) to be used to validate attribute values.
 - **Script Type:** Select the scripting language used to define the script. Currently, regular expressions (JavaScript) is the only supported scripting language.
 - **Error Message:** Type the message that you wish to display to users when an entered attribute value violates the rules of the validation script.

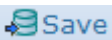
An example of a validation script to check that values entered by a user are a single digit number between one and five is shown below:



The 'Validation Definition' form contains the following fields:

- Script Name:** Valid Number of Doors
- Script:** ^([1-5])\$
- Script Type:** Regular Expressions (JavaScript)
- Error Message:** Invalid number of doors

Figure 15. Validation Definition

1. Press the 'Save'  button located in the top-right of the admin screen to save the validation script. The new validation script will now appear in the 'Validation' list in the left pane of the admin screen.

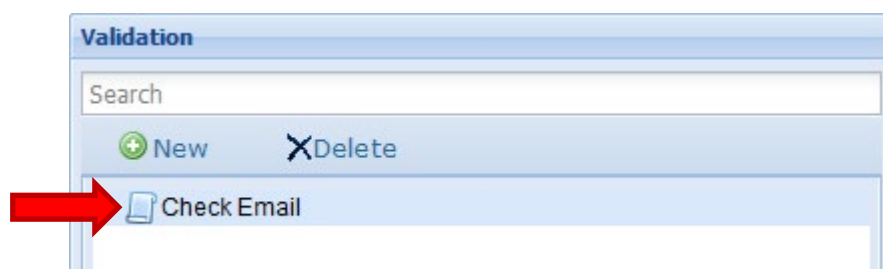


Figure 16. Validation List

Modifying a Validation Script

To modify a script definition, simply select the validation record in the 'Validation' list in the left pane of the admin screen and update the required values in the 'Validation Definition' section.

To view the entity and event columns that reference the selected validation script, select the applicable tab in the bottom right section of the 'Validation' admin page.



Figure 17. Referencing Entity Column Tab

Deleting a Validation Script

To delete a saved validation script from your enCapture configuration, follow the steps listed below:

1. Select the required validation record in the 'Validation' list in the left pane of the admin screen.
2. Press the 'Delete' button located above the 'Validation' list. This will mark the selected record for deletion by putting a line through it and setting its text to grey.

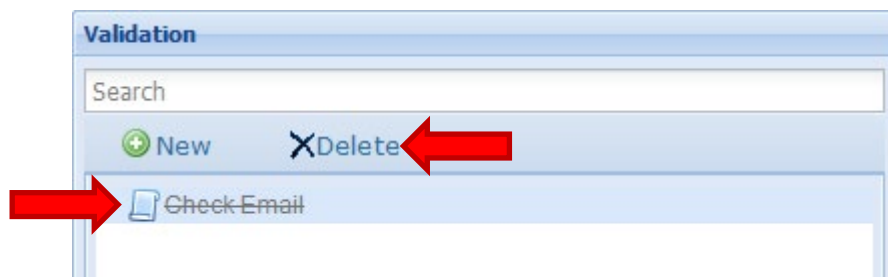
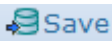


Figure 18. Deleting a Validation Script

3. To complete the deletion, press the 'Save'  button located in the top-right of the admin screen.

- **Note:** Validation scripts that are referenced by entity and/or event columns cannot be deleted from your enCapture configuration. In this case, you have to un-assign the validation script from all of the columns that reference it before proceeding with deletion. To view the entity and event columns that reference the selected validation script, select the applicable tab in the bottom right section of the 'Validation' admin page.



Figure 19. Referencing Entity Column Tab



An entity is any object that is defined by attribute data. Examples of entities include water pipes, cars, and buildings. They are the link between enCapture and your asset databases. The Entity administration area is used to create and maintain entity definitions.

To access this section, click on the 'Entity' link in the enCapture administration list.

Create a new Entity Definition

To create a new entity definition, complete the steps listed below.

1. In the 'Entity' administration screen, press the 'New' button.

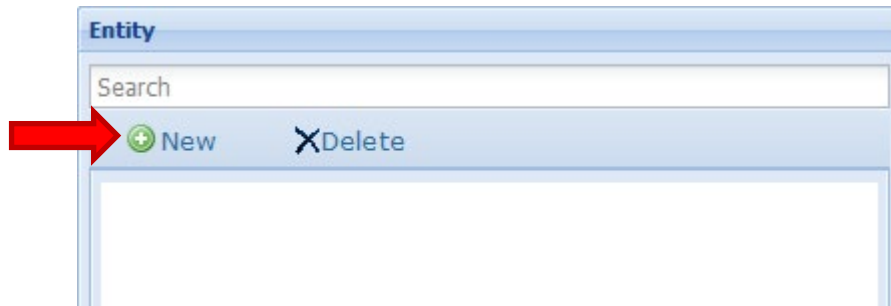


Figure 20. New Entity Definition

2. Enter the required information in the 'Entity Definition' pane. A definition for each of the required fields is listed below:

- **Data Origin:**

- **Native:** This option defines data that will be maintained through enCapture. This means a user can create, update, and delete records from the underlying data table. To qualify as 'Native', the underlying data table must contain the enCapture system columns (OUI_ID and OUI_TYPECODE).
- **Foreign:** This option defines data that is maintained by a system outside of enCapture. This means that a user will be able to read data from the underlying data table, but will not be able to modify it. These tables do not require enCapture system columns.

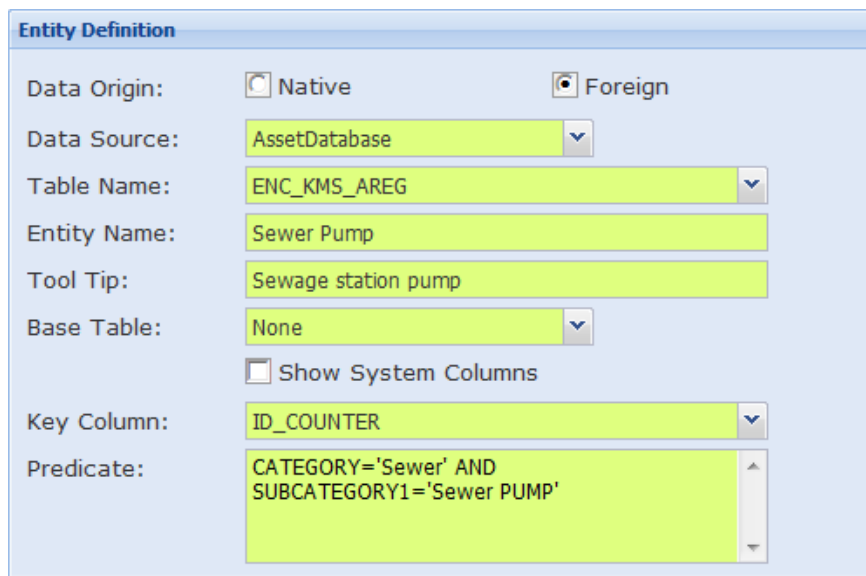
- **Data Source:** Select the data source that contains the entity's data table.

- **Table Name:** The table that will provide the attribute information for the entity.

- **Entity Name:** The name used to reference the entity.

- **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over an entity. This feature is not currently implemented.

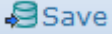
- **Base Entity:** If you wish for the current entity to inherit attributes from another entity, select that other entity here. The underlying tables will be joined on the OUI_ID (native entities) or primary key (foreign entities) of each entity's table. See below section on inheritance for more information on this.
- **Show System Columns:** Select this option if you wish to display the enCapture system columns (OUI_ID, OUI_TYPECODE) in the user environment.
- **Key Column** (foreign entities only): Specify the primary key of the selected table.
- **Predicate** (foreign entities only): An SQL statement used to return a specific selection of records from the entity's underlying data table. This is equivalent to creating a view of the table.



The screenshot shows the 'Entity Definition' pane with the following fields and values:

- Data Origin:** Radio buttons for 'Native' and 'Foreign'. 'Foreign' is selected.
- Data Source:** A dropdown menu showing 'AssetDatabase'.
- Table Name:** A dropdown menu showing 'ENC_KMS_AREG'.
- Entity Name:** A text field containing 'Sewer Pump'.
- Tool Tip:** A text field containing 'Sewage station pump'.
- Base Table:** A dropdown menu showing 'None'.
- Show System Columns:** A checkbox that is currently unchecked.
- Key Column:** A dropdown menu showing 'ID_COUNTER'.
- Predicate:** A text area containing the SQL statement: 'CATEGORY='Sewer' AND SUBCATEGORY1='Sewer PUMP''. The text is highlighted in yellow.

Figure 21. Entity Definition Pane

3. Press the 'Save'  button located in the top-right of the admin screen to save the entity definition. The new entity definition will now appear in the 'Entity' list in the left pane of the admin screen.

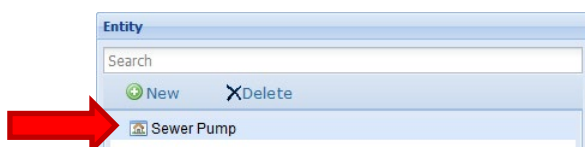


Figure 22. Entity List

Modifying an Entity Definition

To modify an entity definition, simply select the entity record in the 'Entity' list in the left pane of the admin screen and update the required values in the 'Entity Definition' section.

If a 'Native' entity has instances (records) defined in its underlying data table, the following fields will not be available for editing:

- Data Origin
- Data Source
- Table Name
- Base Table

If a 'Foreign' entity has event records defined against it, the following fields will not be available for editing:

- Data Origin
- Data Source
- Table Name
- Base Table
- Key Column
- Predicate

These fields are disabled to prevent potentially harmful edits being carried out on an entity definition that is already in use. To edit these fields requires either the deletion of all instances (records) of that entity in its underlying data table (native entities), or the deletion of all event records pertaining to the entity (foreign entities).

Deleting an Entity Definition

To delete an entity definition from your enCapture configuration, follow the steps listed below:

1. Select the required entity definition in the 'Entity' list in the left pane of the admin screen.
2. Press the 'Delete' button located above the 'Entity' list. This will mark the selected record for deletion by putting a line through it and setting its text to grey.

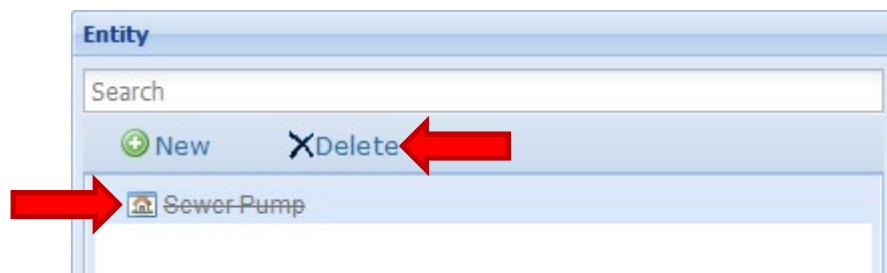
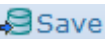


Figure 23. Deleting an Entity Definition

3. To complete the deletion, press the 'Save'  button located in the top-right of the admin screen.
- **Note:** Entity definitions that contain instances (native entities) or have event records defined against them (foreign entities) cannot be deleted from your enCapture configuration. In this case, you have to either delete of all instances (records) of that entity in its underlying data table (native entities), or delete all the event records pertaining to the entity (foreign entities).

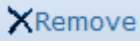
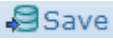
Modify an Entity Definition's Columns

A significant component of an entity's definition is the columns that will be used to capture attribute information for that entity. An entity's columns can be viewed by selecting the 'Entity Columns' tab in the lower right section of the 'Entity' admin screen.



Figure 24. Entity Column Tab

Remove Column Description

If the underlying data table of an entity contains columns that you do not wish to use, you can remove them from the entity description. To do this, select the column you wish to remove from the description and press the 'Remove'  button. Once you have removed the required columns from the description, press the 'Save'  button located in the top-right of the admin screen.

Delete Database Column (Alter Schema)

Deleting a column from an entity's underlying data table is a simple process using the 'Alter Schema' interface. The details of this process are outlined below.

Note: Use caution with this functionality. Alter Schema will delete a column and all of its data from an entity's database table. This operation cannot be undone.

1. Navigate to the 'Entity' admin screen and select the appropriate entity in the left entity list.
2. Press the 'Alter Schema' button located in the top right of the screen. This will open the 'Alter Schema' dialog. The 'Alter Schema' dialog consists of the following components:
 - **Entity Columns Panel:** On the left side of the dialog is the 'Entity Columns' panel. This panel contains a list of all of the columns described in the entity definition.
 - **Table Columns:** On the right side of the dialog is the 'Table Columns' panel. This panel lists all of the database columns of the entity's underlying data table.
 - **Display Columns:** In the bottom left of the dialog there are two options for the columns to display – 'All' and 'Differences'. A definition of these options is as follows:
 - The 'All' option will display all of the columns of the entity description and the entity's underlying data table in the 'Entity Columns' and 'Table Columns' panels.
 - The 'Differences' option will display only those columns that differ between the entity description and the entity's underlying data table. So, if the entity description contains a column that the underlying data table does not, it will be the only column displayed in the 'Entity Columns' section of the dialog. Similarly, if the underlying data table contains a column that is not described in the entity definition, it will be displayed in the 'Table Columns' section. This provides you

with a quick method for identifying differences between the entity description and the entity's underlying data table.



3. Tick the checkbox beside the column in the 'Table Columns' panel that you wish to delete and press the 'Delete' button. This will mark the ticked column for deletion by setting its text to grey and putting a strike through its name. Its associated column description will also be marked for deletion in the 'Entity Columns' panel.
4. To complete the column delete operation, press the 'Apply' button located at the bottom right of the 'Alter Schema' dialog. The column will be deleted from both the entity description and the entity's underlying data table.

■ **Note:** This operation cannot be undone, so be absolutely sure the right columns are selected before proceeding.

5. Once the required columns have been deleted, close the 'Alter Schema' dialog.

Add Column Description

To add a column description to an entity, follow the steps listed below:

1. Navigate to the 'Entity' admin screen and select the appropriate entity in the left entity list.
2. Press the 'Add'  **Add** button (foreign entity) or 'Create'  **Create** button (native entity) located in the lower left of the 'Entity Columns' panel.

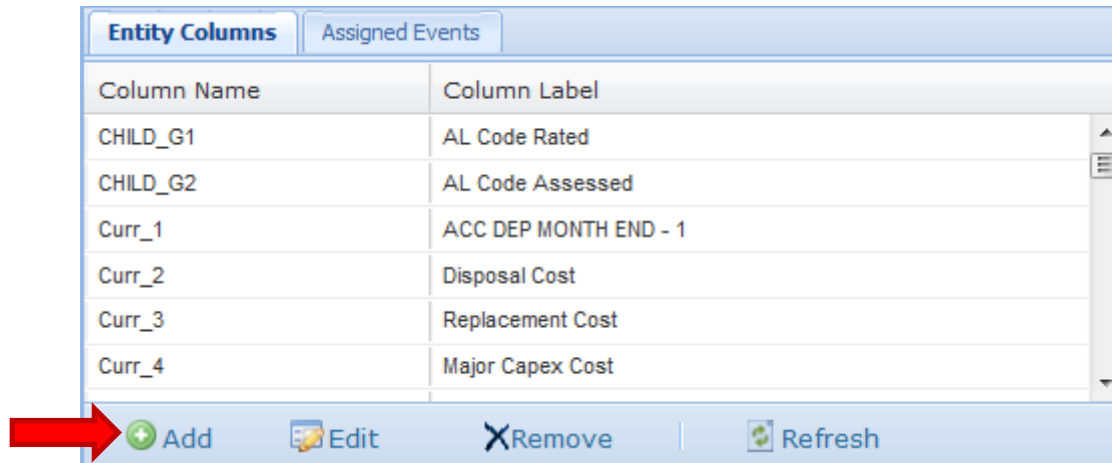


Figure 25. Add Column Description

3. You should now see the 'Add Column' dialog. A definition for each of the fields is listed below:
 - **Column Name:** Name of the column to add to enCapture. You can either select the name of an existing database column here that is not already described in the entity, or you can type a new column name to create an entirely new column.
 - **Column Label:** Label for this field that will be presented to users in the user environment.
 - **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over the entity column in the form view panel.
 - **Variable:** Name used to refer to the column in pre-population scripts.
 - **Validation:** Validation script (as defined in the 'Validation' admin area) to be applied to this field in the user environment.
 - **Column Type:** Data type of the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
 - **Column Constraint:** Database constraints on the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
 - **Data Type:** The data type of this field in the user environment. This data type can differ from the field's underlying database column type. Only those data types compatible with the associated database column will be available in this dropdown. This option defines the acceptable values a user can enter in the user environment.

- **Length:** The maximum allowed length of a character string that a user can enter in this field in the user environment. This only applies to character and text data types.
- **Precision:** The maximum number of digits a user can enter into this field in the user environment. This only applies to number data types.
- **Scale:** The maximum number of digits to the right of the decimal point (decimal places) a user can enter in the user environment. This only applies to number data types.
- **Lookup:** Lookup table (as defined in the 'Lookup Table' admin area) that will be used to select input values for this field in the user environment.
- **Default Value:** Value that will be pre-populated into the field when a user creates a new instance of the entity in the user environment. This can be a static value, such as a number or word, or it can be a value calculated using a pre-population script (*see tips and tricks section*).
- **Mandatory:** Defines if a field MUST obtain user input before saving a record through the user environment.


4. Complete the fields of the 'Add Column' dialog as required and press the 'OK' button.

Figure 26. Add Column Dialog Box

5. The added column will now appear at the bottom of the 'Entity Columns' list.

Column Name	Column Label
YesNo5	YesNo5
YesNo6	YesNo6
YesNo7	YesNo7
YesNo8	YesNo8
ZONE CODE	ZONE CODE
CONDITION	CONDITION

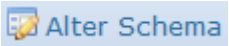
Figure 27. Entity Column List


- To complete the column addition, press the 'Save'  button located in the top-right of the admin screen.

Create Database Column (Alter Schema)

enCapture facilitates the creation of database columns in an entity's underlying database table. This process can only be completed for 'Native' entities.

The details of this process are outlined below:

1. Create a description of the desired entity column following the steps outlined in the above ['Add Column Description'](#) section.
2. Once the new column description has been added, press the 'Alter Schema'  button located in the top right of the entity administration screen. This will open the 'Alter Schema' dialog. The 'Alter Schema' dialog consists of the following components:
 - **Entity Columns Panel:** On the left side of the dialog is the 'Entity Columns' panel. This panel contains a list of all of the columns described in the entity definition.
 - **Table Columns Panel:** On the right side of the dialog is the 'Table Columns' panel. This panel lists all of the database columns of the entity's underlying data table.
 - **Display Columns:** In the bottom left of the dialog there are two options for the columns to display – 'All' and 'Differences'. A definition of these options is as follows:
 - The 'All' option will display all of the columns of the entity description and the entity's underlying data table in the 'Entity Columns' and 'Table Columns' sections.
 - The 'Differences' option will display only those columns that differ between the entity description and the entity's underlying data table. So, if the entity description contains a column that the underlying data table does not, it will be the only column displayed in the 'Entity Columns' section of the dialog. Similarly, if the underlying data table contains a column that is not described in the entity definition, it will be displayed in the 'Table Columns' section. This provides you with a quick method for identifying differences between the entity description and the entity's underlying data table.
3. To easily find the newly described column, select the 'Differences' option located in the bottom left of the 'Alter Schema' dialog. The newly described column should now be the only column displaying in the 'Entity Columns' panel.

4. In the 'Entity Columns' panel, tick the checkbox beside the column that you wish to create in the entity's underlying data table and press the arrow  in the center of the dialog to move the column from the 'Entity Columns' list to the 'Table Columns' list. The selected column should now appear in the 'Table Columns' list.

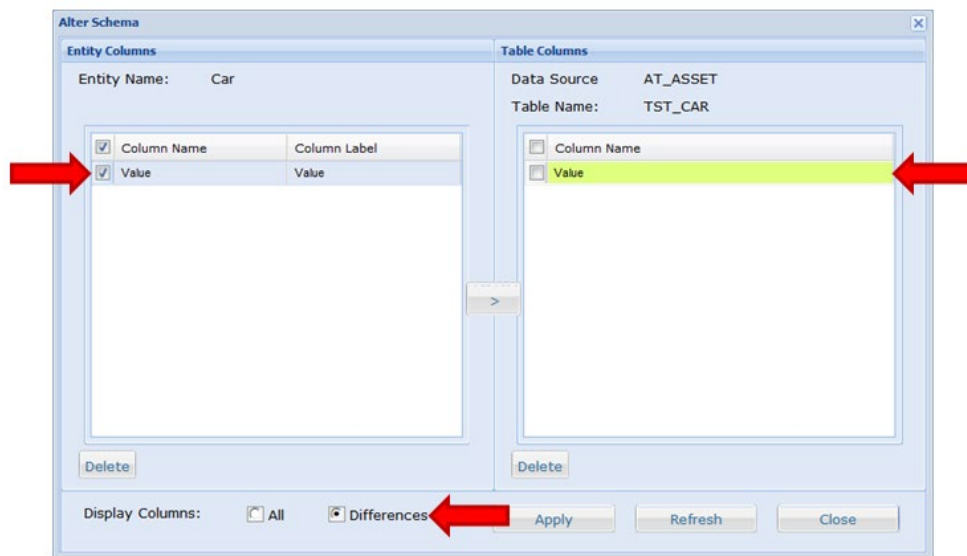


Figure 28. Alter Schema

5. To complete the column creation process, press the 'Apply' button located in the lower right of the dialog. This will create the new column in the entity's underlying table (i.e. in the table named in the 'Table Columns' panel).

If the column addition was successful you will see a "Schema Modification Successful!" message.

If you had the 'Differences' option selected, the added column will disappear from both the 'Entity Columns' and 'Table Columns' lists. The column disappears from these lists because the differences option only displays those columns that are different between the entity description and database table. With the column now existing in both the entity description and the database table, it is no longer detected as a difference and will not be displayed. To see this column, simply choose the 'All' option. You will now see the applicable column in the 'Table Columns' list as well as the 'Entity Columns' list.

6. Once all the required database columns have been created, close the 'Alter Schema' dialog by pressing the 'Close' button in the lower left of the dialog.

Modify Column Description

There are several things that can be modified for an individual column description. To modify a column's definition, follow the steps outlined below:

1. Select the column you wish to edit in the entity's column list and press the 'Edit' button.

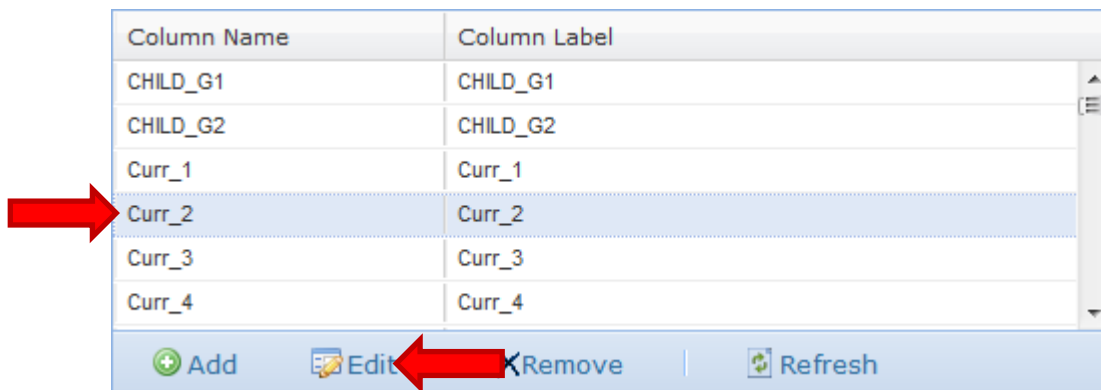


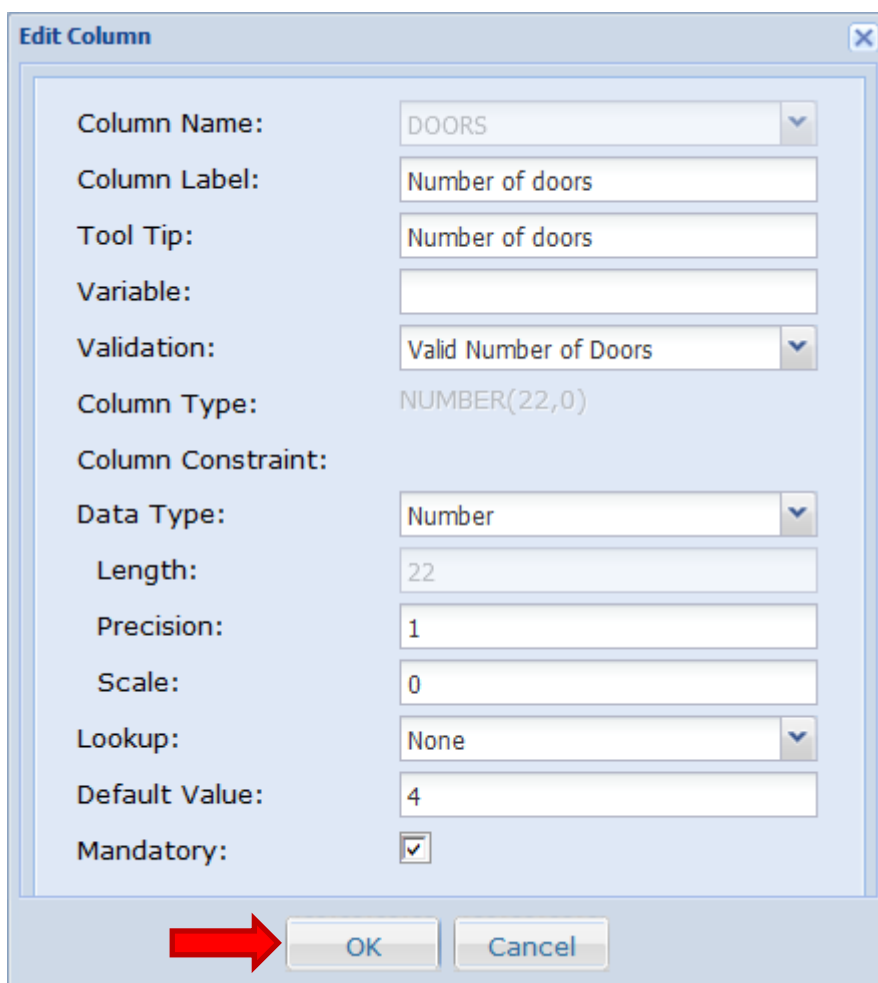
Figure 29. Modify Column Description

2. You should now see the 'Edit Column' dialog. A definition for each of the fields is listed below:

- **Column Name:** Name of the currently selected column.
- **Column Label:** Label for this field that will be presented to users in the user environment.
- **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over the entity column in the form view panel.
- **Variable:** Name used to refer to the column in pre-population scripts.
- **Validation:** Validation script (as defined in the 'Validation' admin area) to be applied to this field in the user environment.
- **Column Type:** Data type of the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
- **Column Constraint:** Database constraints on the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
- **Data Type:** The data type of this field in the user environment. This data type can differ from the field's underlying database column type. Only those data types compatible with the associated database column will be available in this dropdown. This option defines the acceptable values a user can enter in the user environment.
- **Length:** The maximum allowed length of a character string that a user can enter in this field in the user environment. This only applies to character and text data types.
- **Precision:** The maximum number of digits a user can enter into this field in the user environment. This only applies to number data types.

- **Scale:** The maximum number of digits to the right of the decimal point (decimal places) a user can enter in the user environment. This only applies to number data types.
- **Lookup:** Lookup table (as defined in the 'Lookup Table' admin area) that will be used to select input values for this field in the user environment.
- **Default Value:** Value that will be pre-populated into the field when a user creates a new instance of the entity in the user environment. This can be a static value, such as a number or word, or it can be a value calculated using a pre-population script (*see tips and tricks section*).
- **Mandatory:** Defines if a field MUST obtain user input before saving a record through the user environment.

3. Modify these values for the column as required and press the 'OK' button.



Edit Column

Column Name: DOORS

Column Label: Number of doors

Tool Tip: Number of doors

Variable:

Validation: Valid Number of Doors

Column Type: NUMBER(22,0)

Column Constraint:

Data Type: Number

Length: 22

Precision: 1

Scale: 0

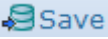
Lookup: None

Default Value: 4

Mandatory: ☒

OK Cancel

Figure 30. Edit Column Dialog Box

4. To save the column definition modifications, press the 'Save'  button located in the top-right of the admin screen.

- **Note:** Modifying a column description only impacts user environment behavior. Changes made here are not applied to the described column's associated database column.


Assigning Events to an Entity

To link events to an entity, you must assign the required events to the entity (for more information on events, see the 'Event' section of this manual). To do this, follow the steps listed below:

1. Select the entity you wish to assign events to in the 'Entity' list in the left pane of the entity admin screen.
2. Select the 'Assigned Events' tab in the lower right section of the admin screen.



Figure 31. Assigned Events Tab

3. Press the 'Change'  Change button located in the lower left corner of 'Assigned Events' panel. This will display the 'Assign Events' dialog, which shows a list of all of your saved events.
4. In the 'Assign Events' dialog, check all the events you wish to assign to the selected entity. You can do this by either checking each event individually, or by checking an event category, which assigns all the events of that category to the selected entity. With the required events selected, press the 'OK' button.

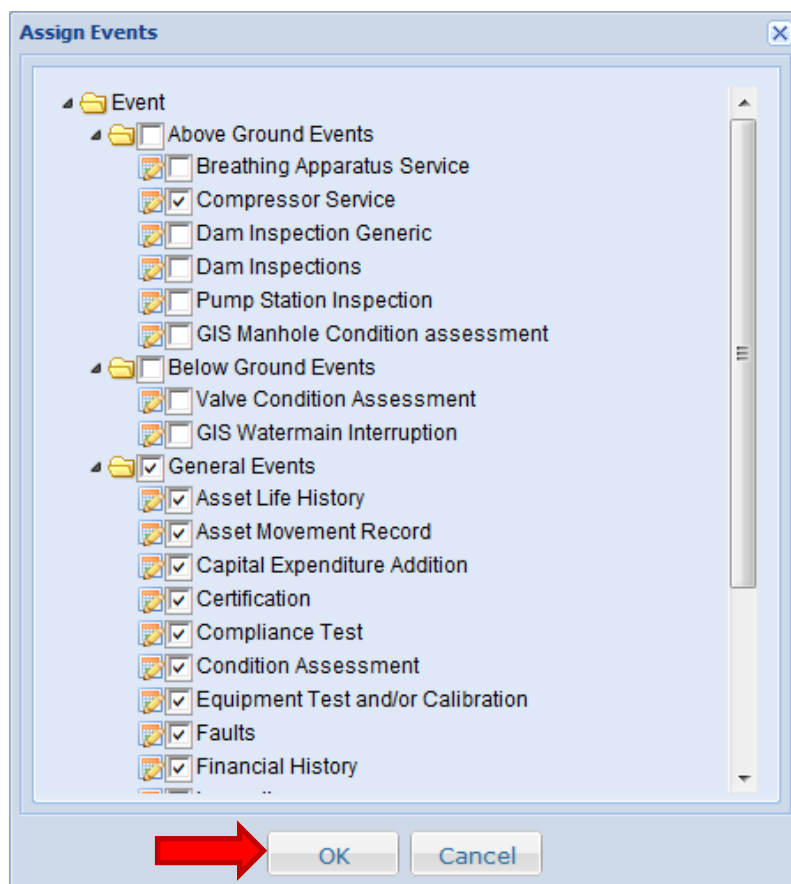



Figure 32. Assign Events Dialog

5. The events/categories you selected in the previous step will now appear under the 'Assigned Events' tab.

Entity Columns		Assigned Events	
Type	Name	Table Name	Data Source
Category	General Events		
Event	Compressor Service	ENC_KMS_AREG_History	SQL_enCapture

Figure 33. Assigned Events List

6. To save, press the 'Save'  button located in the top-right of the 'Entity' admin screen.

Inheritance

Inheritance is enCapture's way of facilitating normalized data structures. If an asset is described over multiple tables, enCapture provides the facilities to manage and display this asset as a single entity in the user environment. Following the procedures outlined below, an entity description can be configured to read, write and delete records pertaining to a single asset spread across multiple tables/databases.

This concept will be demonstrated below using an example case of configuring enCapture to manage motor vehicle data located in multiple tables through a single entity description.

Define Parent Entity

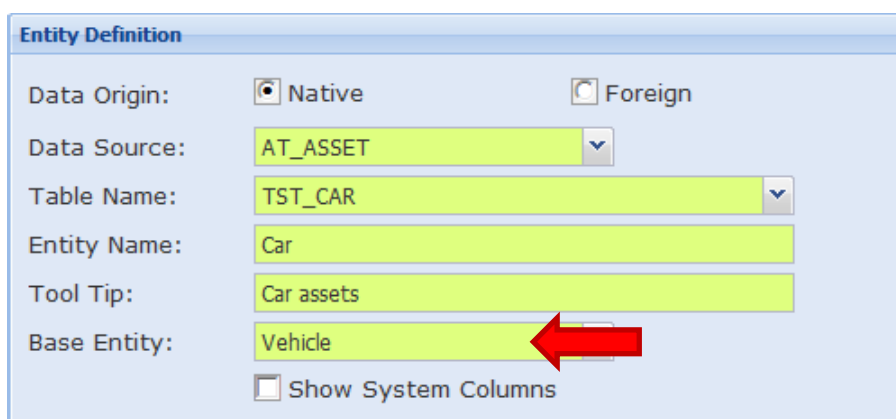
The parent entity is the entity that contains those attributes common to multiple entities. For our motor vehicle example, the parent entity of all our motor vehicles is called 'Vehicle'. It contains those attributes common to all vehicles, such as 'manufacturer' and 'year of manufacture'.

Create this entity as specified in the 'Create a New Entity Definition' section above.

Define Child Entity

The child entity is the entity that contains attribute information pertaining only to its specific asset type. In our motor vehicle example, the child entities will be 'Car', 'Truck'. These entities contain information specific to their individual asset type, but will also inherit those attributes common to all motor vehicles from the 'Vehicle' parent entity.

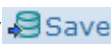
To create a child entity, follow the steps outlined in the above 'Create a New Entity Definition' section. The only additional step you must complete is to make sure you specify the parent entity in the 'Base Entity' dropdown:



The screenshot shows the 'Entity Definition' form with the following fields and values:

- Data Origin: ☒ Native ☐ Foreign
- Data Source: AT_ASSET
- Table Name: TST_CAR
- Entity Name: Car
- Tool Tip: Car assets
- Base Entity: Vehicle (indicated by a red arrow)
- Show System Columns: ☐

Figure 34. Base Entity Dropdown Box

When you save ( Save) the child entity definition, it will appear indented and underneath its parent in the left 'Entity' list. This is how you can visually determine your inheritance configuration in the 'Entity' administration area.

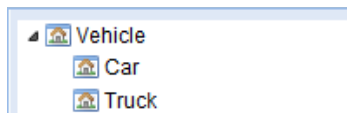
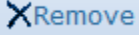


Figure 35. Entities

The 'Car' child entity now has access to all of the parent 'Vehicle' entity's attributes.

Note: In the 'Entity Columns' list of a child entity, if a column is highlighted in orange, this means that the column is described in both the child and parent entity definitions. In this case, the child's column description will be used to display attribute information in the user environment. If you instead wish to use the parent's column in the user environment you must remove () the common column from the child's entity description.


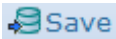
Entity Columns	
Column Name	Column Label
CHILD_G1	Rego Number
Curr_3	Disp Proceeds
ID_COUNTER	Asset ID
Num_1	FA Acct
Num_10	Remaining Life Assessed
Num_2	Depn code

Figure 36. Entity Columns List

Configure User Environment Attribute Display

The final step in configuring inheritance is specifying exactly which of the parent entity's attributes you would like displayed under the child entity in the user environment.

To add parent entity attributes to a child entity in the user environment, follow the steps listed below.

1. Go to the 'Entity Form' administration area (see the 'Entity Form' section of this manual for more information on this admin area).
2. Select the child entity in the 'Entities' list in the left pane of the admin screen.
3. If you press the 'Add'  button in either of the 'List View' or 'Detail View' panels, you will see that you can add any of the parent entity's columns to the 'List View' or 'Detail View' sections. Add the required parent entity columns and press 'Save'  Now, when the user selects/creates an instance of the child entity, they will be seeing information from both the child and parent entity tables.



Entity Form

The 'Entity Form' administration area is used to specify how attribute information for an entity will be displayed in the user environment. Show/hide columns, column display order, and attribute editability are all defined here.

User Environment

enCapture's user environment is where attribute information is entered by those who are responsible for populating your various entity and event tables. The sections of the user environment are listed below so as that you are aware of the changes you will be implementing in the 'Entity Form' administration page.

The screenshot displays the 'Entities and Events' window in the enCapture software. The window is divided into three main sections:

- A - Entity list:** A tree view on the left showing the project structure. 'Water Pipe' is selected under the 'Selection' folder.
- B - List view panel:** A table displaying a list of entities. The table has columns for PIPE_GID, MATERIAL, and Entity ID. The first row shows PIPE_GID 331564, MATERIAL STEEL, and Entity ID 210.
- C - Detail view panel:** A form for editing the selected entity's attributes. It includes fields for DIAMETER (400), PIPE_GID (331564), LENGTH (13.8), MATERIAL (Steel), and VALUE (250).

At the bottom of the window, there are buttons for 'All Entities', 'Discard', and 'Save'.

Figure 37. User Interface

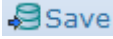
The sections of the user environment shown above are:

- **A - Entity list:** Shows a list of the available entities.
- **B - List view panel:** Shows an abbreviated view of the selected entity's records.
- **C - Detail view panel:** Shows a detailed view of the selected record's attributes. This is where users enter attribute information.

It is the information displayed in sections B and C of the user environment that is defined in the 'Entity Form' administration page.

List View

The 'List View' panel of the 'Entity Form' administration page is where you specify exactly which attributes will display in the list view panel (section B in Figure 37 above) of the user environment. You can also set the order in which columns will display.

After you make any changes in this section, make sure you press the 'Save'  button located in the top-right of the 'Entity Form' administration screen.

Hide Columns

To prevent a column from displaying in the list view panel of the user environment, simply press the 'Hide' button for the column.

Column Name	Column Label	Hide
PIPE_GID	PIPE_GID	<input type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>
DIAMETER	DIAMETER	<input type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>




 Add |  Refresh

Figure 38. Hide Columns

Add Columns


To display a column that has previously been hidden, press the 'Add'  button in the lower left corner of the 'List View' panel. In the 'Select Columns to Add' dialog, check the columns you wish to display and press the 'OK' button.

Change Column Order

To modify the order that the columns will display in the list view panel of the user environment, drag and drop the columns into the order required.

Detail View

The 'Detail View' panel of the 'Entity Form' administration page is where you specify exactly which attributes will display in the detail view panel (section C in *Figure 37* above) of the user environment. You also specify the editability of the attribute values and the order in which columns will display.

After you make any changes in this section, make sure you press the 'Save'  button located in the top-right of the 'Entity Form' administration screen.

Set Editability of a Column

To enable a user to edit a column's value in the user environment, you must set the column to be editable. To do this, check the 'Editable' checkbox next to the column.

Column Name	Column Label	Hide	Editable
DIAMETER	DIAMETER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PIPE_GID	PIPE_GID	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>	<input checked="" type="checkbox"/>




Figure 39. Editability of a Column

Hide Columns

To prevent a column from displaying in the detail view panel of the user environment, simply press the 'Hide' button for the column.

Column Name	Column Label	Hide	Editable
DIAMETER	DIAMETER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PIPE_GID	PIPE_GID	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>	<input checked="" type="checkbox"/>





Figure 40. Hide Columns

Add Columns

To display a column that has previously been hidden, press the 'Add'  **Add** button in the lower left corner of the 'Detail View' panel. In the 'Select Columns to Add' dialog, check the columns you wish to display and press the 'OK' button.

Change Column Order

To modify the order that the columns will display in the detail view panel of the user environment, drag and drop the columns into the order required.



Events are actions that have or will occur on an entity. Examples of events include routine services, compliance tests, and inspections. They are the link between enCapture and your event tables. The Event administration area is used to create and maintain event definitions.

To access this section, click on the 'Event' link in the enCapture administration list.

Create a New Event Definition

To create a new event definition, complete the steps listed below.

1. In the 'Event' administration screen, press the 'New' button and select 'Event' from the dropdown list that appears.



Figure 41. New Event Definition

2. Enter the required information in the 'Event Definition' panel. A definition for each of the required fields is listed below:
 - **Data Source:** Select the data source that contains the event's data table.
 - **Table Name:** The table that will provide the attribute information for the event.
 - **Event Name:** The name of the event.
 - **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over an event. This feature is not currently implemented.
 - **Show System Columns:** Select this option if you wish to display the enCapture system columns (OUI_ID, OUI_TYPECODE, OUI_ENTITY_ID, OUI_ENTITY_TYPECODE) in the user environment.

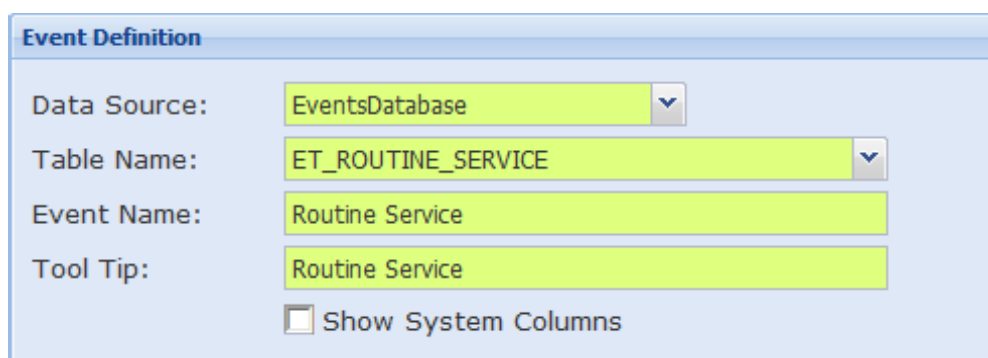
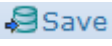
A screenshot of the 'Event Definition' panel. It contains several input fields: 'Data Source' with a dropdown menu showing 'EventsDatabase'; 'Table Name' with a dropdown menu showing 'ET_ROUTINE_SERVICE'; 'Event Name' with a text field containing 'Routine Service'; and 'Tool Tip' with a text field containing 'Routine Service'. At the bottom, there is a checkbox labeled 'Show System Columns' which is currently unchecked.

Figure 42. Event Definition Option

3. Press the 'Save'  button located in the top-right of the admin screen to save the event definition. The new event definition will now appear in the 'Event' list in the left pane of the admin screen.

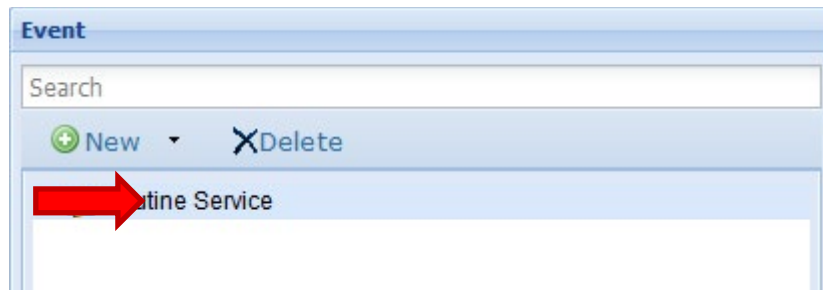


Figure 43. Event List

Modifying an Event Definition

To modify an event definition, simply select the event record in the 'Event' list in the left pane of the admin screen and update the required values in the 'Event Definition' section.

If the selected event has instances (records) defined in its underlying data table, the following fields will not be available for editing:

- Data Source
- Table Name

These fields are disabled to prevent potentially harmful edits being carried out on an event definition that already has records defined against it. To edit these fields will require you to delete all of the instances (records) for the selected event in its underlying data table.

Deleting an Event Definition

To delete an event definition from your enCapture configuration, follow the steps listed below:

1. Select the required event definition in the 'Event' list in the left pane of the admin screen.
2. Press the 'Delete' button located above the 'Event' list. This will mark the selected record for deletion by putting a line through it and setting its text to grey.

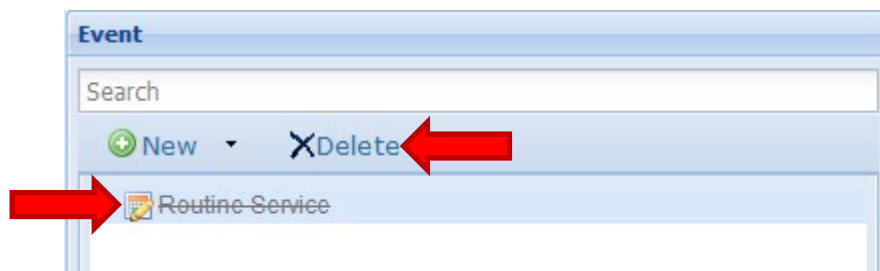



Figure 44. Deleting an Event Definition

3. To complete the deletion, press the 'Save'  Save button located in the top-right of the admin screen.
- **Note:** Event definitions that contain instances (records) cannot be deleted from your enCapture configuration. In this case, you will have to delete all of the instances (records) of that event in its underlying data table before deletion will be permitted. This is put in place to protect data integrity.

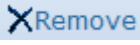
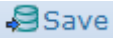
Modify an Event Definition's Columns

A significant component of an event's definition is the columns that will be used to capture attribute information for that event. An event's columns can be viewed by selecting the 'Event Columns' tab in the lower right section of the 'Event' admin screen.



Figure 45. Event Columns Tab

Remove Column Description

If the underlying data table of an event contains columns that you do not wish to use, you can remove them from the event description. To do this, select the column you wish to remove from the description and press the 'Remove'  button. Once you have removed the required columns from the description, press the 'Save'  button located in the top-right of the admin screen.

Delete Database Column (Alter Schema)

Deleting a column from an event's underlying data table is a simple process using the 'Alter Schema' interface. The details of this process are outlined below.

Note: Use caution with this functionality. Alter Schema will delete a column and all of its data from an event's database table. This operation cannot be undone.

1. Navigate to the 'Event' admin screen and select the appropriate event in the left event list.
2. Press the 'Alter Schema' button located in the top right of the screen. This will open the 'Alter Schema' dialog. The 'Alter Schema' dialog consists of the following components:
 - **Event Columns Panel:** On the left side of the dialog is the 'Event Columns' panel. This panel contains a list of all of the columns described in the event definition.
 - **Table Columns:** On the right side of the dialog is the 'Table Columns' panel. This panel lists all of the database columns of the event's underlying data table.
 - **Display Columns:** In the bottom left of the dialog there are two options for the columns to display – 'All' and 'Differences'. A definition of these options is as follows:
 - The 'All' option will display all of the columns of the event description and the event's underlying data table in the 'Event Columns' and 'Table Columns' sections.
 - The 'Differences' option will display only those columns that differ between the event description and the event's underlying data table. So, if the event description contains a column that the underlying data table does not, it will be the only column displayed in the 'Event Columns' section of the dialog. Similarly, if the underlying data table contains a column that is not described in the event


definition, it will be displayed in the 'Table Columns' section. This provides you with a quick method for identifying differences between the event description and the event's underlying data table.

3. Tick the checkbox beside the column in the 'Table Columns' panel that you wish to delete and press the 'Delete' button. This will mark the ticked column for deletion by setting its text to grey and putting a strike through its name. Its associated column description will also be marked for deletion in the 'Event Columns' panel.
4. To complete the column delete operation, press the 'Apply' button located at the bottom right of the 'Alter Schema' dialog. The column will be deleted from both the event description and the event's underlying data table.

■ **Note:** This operation cannot be undone, so be absolutely sure the right columns are selected before proceeding. Once the required columns have been deleted, close the 'Alter Schema' dialog.

Add Column Description

To add a column description to an event, follow the steps listed below:

1. Navigate to the 'Event' admin screen and select the appropriate event in the left event list.
2. Press the 'Create'  button located in the lower left of the 'Event Columns' panel.

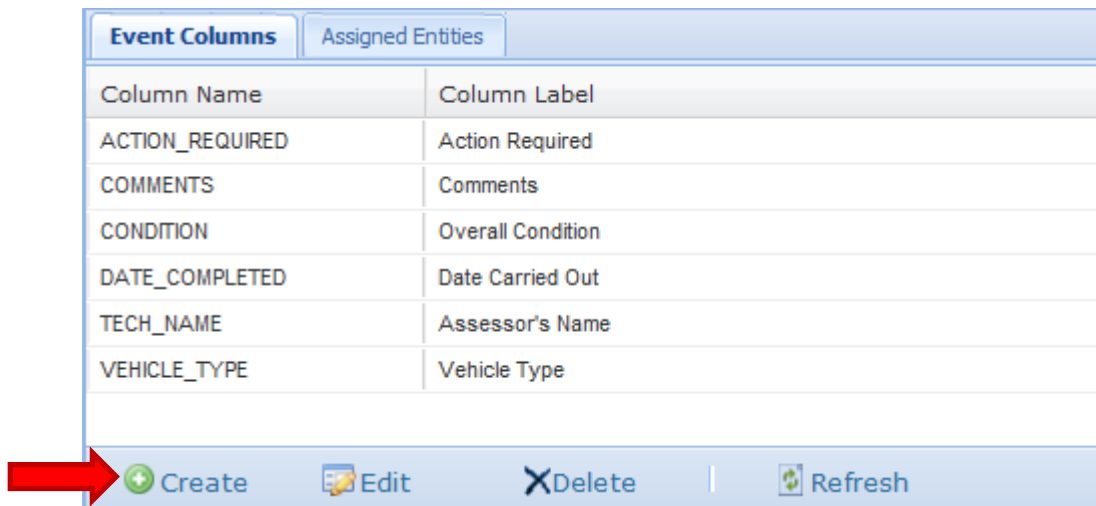


Figure 46. Create Column Description

3. You should now see the 'Add Column' dialog. A definition for each of the fields is listed below:
 - **Column Name:** Name of the column to add to enCapture. You can either select the name of an existing database column here that is not already described in the event, or you can type a new column name to create an entirely new column.
 - **Column Label:** Label for this field that will be presented to users in the user environment.
 - **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over the event column in the form view panel.
 - **Variable:** Name used to refer to the column in pre-population scripts.
 - **Validation:** Validation script (as defined in the 'Validation' admin area) to be applied to this field in the user environment.
 - **Column Type:** Data type of the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
 - **Column Constraint:** Database constraints on the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
 - **Data Type:** The data type of this field in the user environment. This data type can differ from the field's underlying database column type. Only those data types compatible

with the associated database column will be available in this dropdown. This option defines the acceptable values a user can enter in the user environment.

- **Length:** The maximum allowed length of a character string that a user can enter in this field in the user environment. This only applies to character and text data types.
- **Precision:** The maximum number of digits a user can enter into this field in the user environment. This only applies to number data types.
- **Scale:** The maximum number of digits to the right of the decimal point (decimal places) a user can enter in the user environment. This only applies to number data types.
- **Lookup:** Lookup table (as defined in the 'Lookup Table' admin area) that will be used to select input values for this field in the user environment.
- **Default Value:** Value that will be pre-populated into the field when a user creates a new instance of the entity in the user environment. This can be a static value, such as a number or word, or it can be a value calculated using a pre-population script (*see tips and tricks section*).
- **Mandatory:** Defines if a field MUST obtain user input before saving a record through the user environment.

4. Complete the fields of the 'Add Column' dialog as required and press the 'OK' button.

The 'Add Column' dialog box is shown with the following fields and values:

- Column Name: ACTION_TYPE
- Column Label: Action Type
- Tool Tip: Action that was completed
- Variable: (empty)
- Validation: (empty)
- Column Type: NUMBER(22,0)
- Column Constraint: (empty)
- Data Type: Number
- Length: 22
- Precision: 10
- Scale: 0
- Lookup: (empty)
- Default Value: (empty)
- Mandatory: ☐

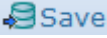
A red arrow points to the OK button at the bottom of the dialog.

Figure 47. Add a Column Description Dialog Box

5. The added column will now appear at the bottom of the 'Event Columns' list.

Column Name	Column Label
ACTION_REQUIRED	Action Required
COMMENTS	Comments
CONDITION	Overall Condition
DATE_COMPLETED	Date Carried Out
TECH_NAME	Assessor's Name
VEHICLE_TYPE	Vehicle Type
ACTION_TYPE	Action Type



Figure 48. Event Columns List

- To complete the column addition, press the 'Save'  button located in the top-right of the admin screen.

Create Database Column (Alter Schema)

enCapture facilitates the creation of database columns in an event's underlying database table.

The details of this process are outlined below:

1. Create a description of the desired event column following the steps outlined in the above 'Add Column Description' section.
2. Once the new column description has been added, press the 'Alter Schema'  **Alter Schema** button located in the top right of the event administration screen. This will open the 'Alter Schema' dialog. The 'Alter Schema' dialog consists of the following components:
 - **Event Columns Panel:** On the left side of the dialog is the 'Event Columns' panel. This panel contains a list of all of the columns described in the event definition.
 - **Table Columns Panel:** On the right side of the dialog is the 'Table Columns' panel. This panel lists all of the database columns of the event's underlying data table.
 - **Display Columns:** In the bottom left of the dialog there are two options for the columns to display – 'All' and 'Differences'. A definition of these options is as follows:
 - The 'All' option will display all of the columns of the event description and the event's underlying data table in the 'Event Columns' and 'Table Columns' sections.
 - The 'Differences' option will display only those columns that differ between the event description and the event's underlying data table. So, if the event description contains a column that the underlying data table does not, it will be the only column displayed in the 'Event Columns' section of the dialog. Similarly, if the underlying data table contains a column that is not described in the event definition, it will be displayed in the 'Table Columns' section. This provides you with a quick method for identifying differences between the event description and the event's underlying data table.
3. To easily find the newly described column, select the 'Differences' option located in the bottom left of the 'Alter Schema' dialog. The newly described column should now be the only column displaying in the 'Event Columns' panel.
4. In the 'Event Columns' panel, tick the checkbox beside the column that you wish to create in the event's underlying data table and press the arrow  in the center of the dialog to move the column from the 'Event Columns' list to the 'Table Columns' list. The selected column should now appear in the 'Table Columns' list.

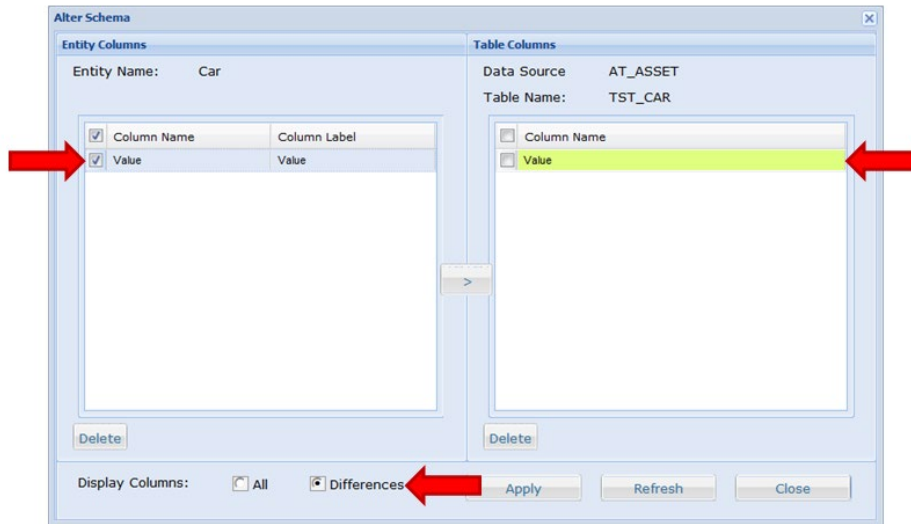


Figure 49. Alter Schema

5. To complete the column creation process, press the 'Apply' button located in the lower right of the dialog. This will create the new column in the event's underlying table (i.e. in the table named in the 'Table Columns' section).

If the column addition was successful you will see a "Schema Modification Successful!" message.

If you had the 'Differences' option selected, the added column will disappear from both the 'Event Columns' and 'Table Columns' lists. The column disappears from these lists because the differences option only displays those columns that are different between the event description and database table. With the column existing in both the event description and the database table, it is no longer detected as a difference and will not be displayed. To see this column, simply choose the 'All' option. You will now see the applicable column in the 'Table Columns' list as well as the 'Event Columns' list.

6. Once all the required database columns have been created, close the 'Alter Schema' dialog by pressing the 'Close' button in the lower left of the dialog.

Modify Column Description

There are several things that can be modified for an individual column description. To modify a column's definition, follow the steps outlined below:

1. Select the column you wish to edit in the event's column list and press the 'Edit' button.

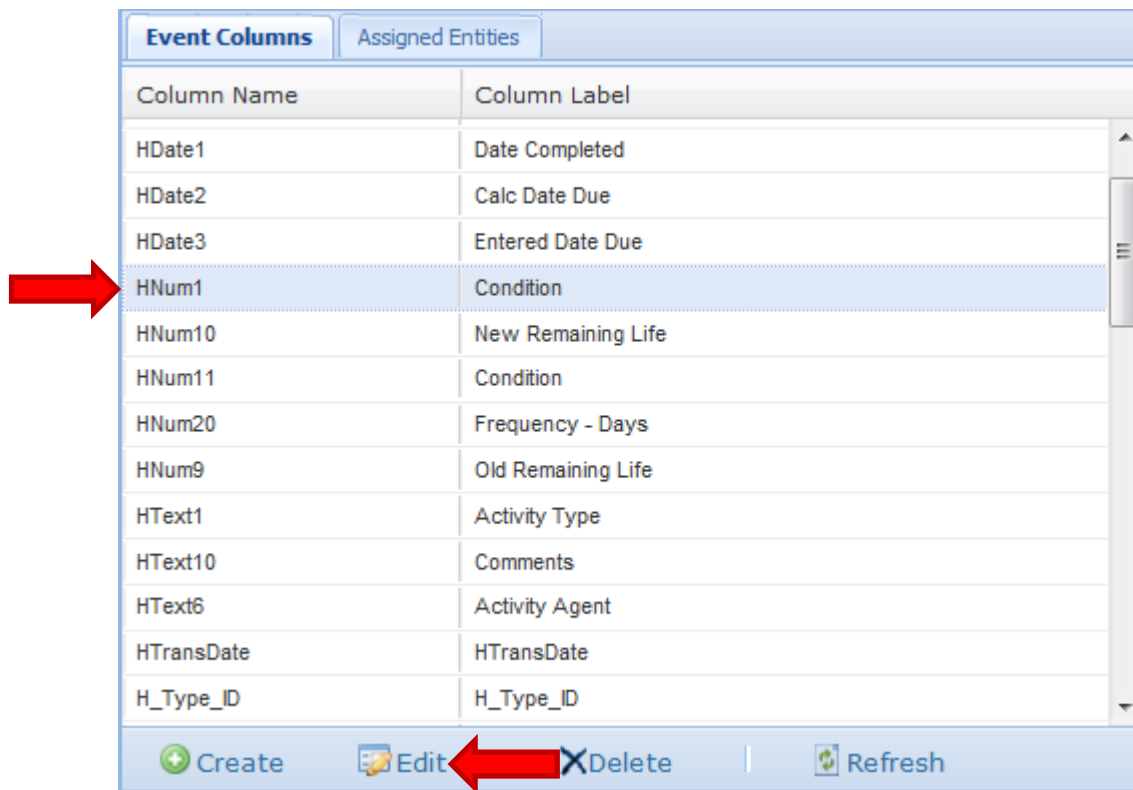
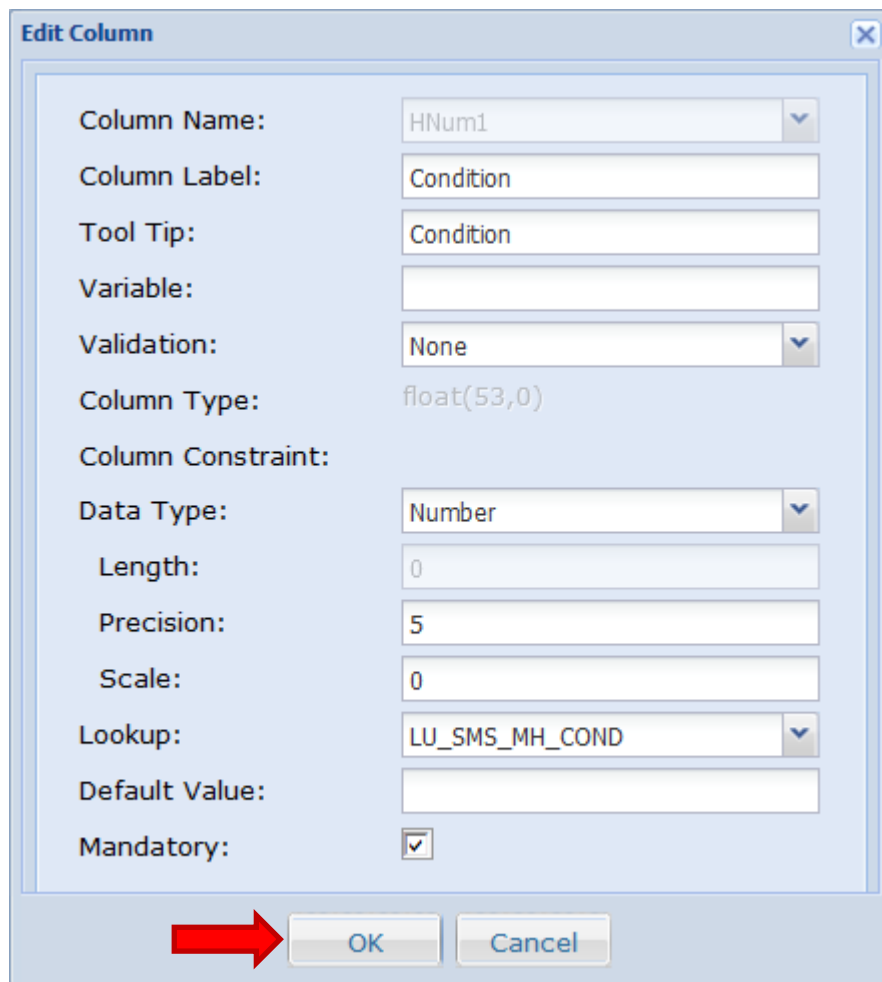


Figure 50. Edit Event Columns List

2. You should now see the 'Edit Column' dialog. A definition for each of the fields is listed below:
 - **Column Name:** Name of the currently selected column.
 - **Column Label:** Label for this field that will be presented to users in the user environment.
 - **Tool Tip:** Text entered here will be displayed to users in the user environment when the cursor hovers over the entity column in the form view panel.
 - **Variable:** Name used to refer to the column in pre-population scripts.
 - **Validation:** Validation script (as defined in the 'Validation' admin area) to be applied to this field in the user environment.
 - **Column Type:** Data type of the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.
 - **Column Constraint:** Database constraints on the associated database column. This refers to the actual database column. If this is an entirely new column, this field will be blank as the actual database column does not exist yet.

- **Data Type:** The data type of this field in the user environment. This data type can differ from the field's underlying database column type. Only those data types compatible with the associated database column will be available in this dropdown. This option defines the acceptable values a user can enter in the user environment.
- **Length:** The maximum allowed length of a character string that a user can enter in this field in the user environment. This only applies to character and text data types.
- **Precision:** The maximum number of digits a user can enter into this field in the user environment. This only applies to number data types.
- **Scale:** The maximum number of digits to the right of the decimal point (decimal places) a user can enter in the user environment. This only applies to number data types.
- **Lookup:** Lookup table (as defined in the 'Lookup Table' admin area) that will be used to select input values for this field in the user environment.
- **Default Value:** Value that will be pre-populated into the field when a user creates a new instance of the entity in the user environment. This can be a static value, such as a number or word, or it can be a value calculated using a pre-population script (*see tips and tricks section*).
- **Mandatory:** Defines if a field MUST obtain user input before saving a record through the user environment.

3. Modify these values for the column as required and press the 'OK' button.




The 'Edit Column' dialog box contains the following fields and values:

Field	Value
Column Name:	HNum1
Column Label:	Condition
Tool Tip:	Condition
Variable:	
Validation:	None
Column Type:	float(53,0)
Column Constraint:	
Data Type:	Number
Length:	0
Precision:	5
Scale:	0
Lookup:	LU_SMS_MH_COND
Default Value:	
Mandatory:	<input checked="" type="checkbox"/>

At the bottom, there are 'OK' and 'Cancel' buttons. A red arrow points to the 'OK' button.

Figure 51. Edit Column Dialog Box

- To save the column definition modifications, press the 'Save'  **Save** button located in the top-right of the admin screen.

■ **Note:** Modifying a column description only impacts user environment behavior. Changes made here are not applied to the described column's associated database column.


Assigning Entities to an Event

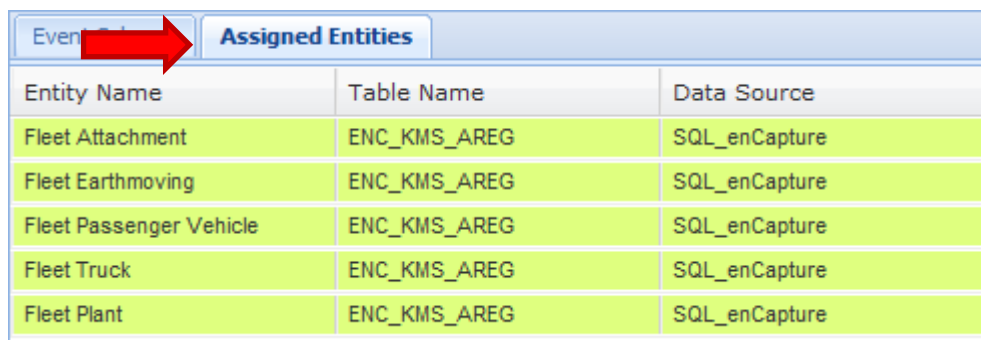
To link entities to an event, you must assign the required entities to the event (for more information on entities, see the 'Entity' section of this manual). To do this, follow the steps listed below (Note: use the same procedure to assign entities to a category).

1. Select the event you wish to assign entities to in the 'Event' list in the left pane of the event admin screen.
2. Select the 'Assigned Entities' tab in the lower right section of the admin screen.




Figure 52. Assigned Entities Tab

3. Press the 'Change'  **Change** button located in the lower left corner of 'Assigned Entities' panel. This will display the 'Assign Entities' dialog, which shows a list of all of your saved entities.
4. In the 'Assign Entities' dialog, check all the entities you wish to assign to the selected event and press the 'OK' button.
5. The entities you selected in the previous step will now appear under the 'Assigned Entities' tab.

A screenshot of a software interface showing a table of assigned entities. A red arrow points to the 'Assigned Entities' tab. The table has three columns: 'Entity Name', 'Table Name', and 'Data Source'. It lists five entities: Fleet Attachment, Fleet Earthmoving, Fleet Passenger Vehicle, Fleet Truck, and Fleet Plant, all with the same table name and data source.

Entity Name	Table Name	Data Source
Fleet Attachment	ENC_KMS_AREG	SQL_enCapture
Fleet Earthmoving	ENC_KMS_AREG	SQL_enCapture
Fleet Passenger Vehicle	ENC_KMS_AREG	SQL_enCapture
Fleet Truck	ENC_KMS_AREG	SQL_enCapture
Fleet Plant	ENC_KMS_AREG	SQL_enCapture

Figure 53. Assigned Entities List

6. To save, press the 'Save'  **Save** button located in the top-right of the admin screen.

Event Categories

To aid in the management of your events, events can be split into categories. To make use of this functionality, you must first create an event category then assign the applicable events to that category. Instructions for doing this are listed below.

Create an Event Category

1. In the 'Event' administration screen, press the 'New' button and select 'Category' from the dropdown list that appears.



Figure 54. New Category

2. Enter the required information in the 'Category Definition' pane. A definition for each of the required fields is listed below:
 - **Category Name:** The name of the category.
 - **Tool Tip:** Not currently implemented.

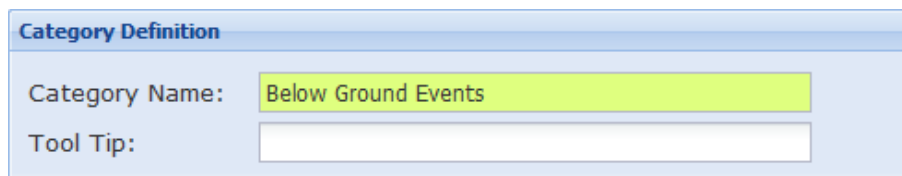
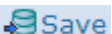
A screenshot of the 'Category Definition' form. It has a title bar 'Category Definition'. Below it are two input fields: 'Category Name:' with the text 'Below Ground Events' entered, and 'Tool Tip:' which is empty.

Figure 55. Category Definition

3. Press the 'Save'  button located in the top-right of the admin screen to save the category. The new event category will now appear in the 'Event' list in the left pane of the admin screen.

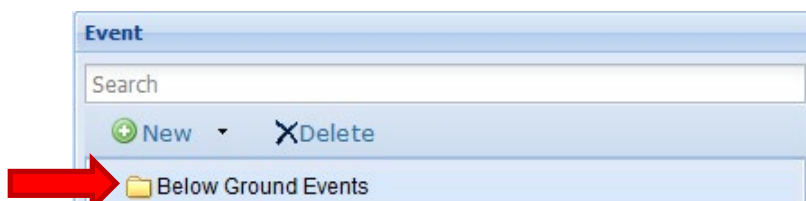


Figure 56. Event List


Assign Events to a Category

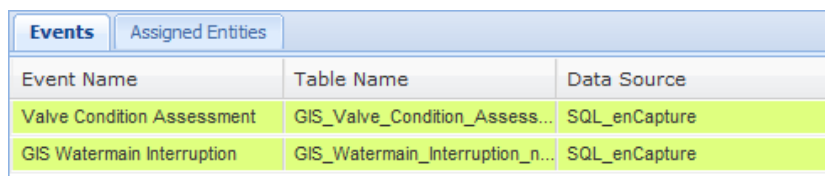
To assign events to a category, follow the steps listed below:

1. Select the category you wish to assign events to in the 'Event' list in the left pane of the event admin screen.
2. Select the 'Events' tab in the right panel of the admin screen.




Figure 57. Events Tab

3. Select the 'Assign'  button located in the lower left corner of the 'Events' panel. This will display a dialog with a list of all the available event definitions.
4. In the 'Assign Events' dialog, select all the events you wish to assign to the category and press 'OK'.
5. The events you selected in the previous step will now appear under the 'Events' tab.

A screenshot of a table titled 'Events' with a sub-header 'Assigned Entities'. The table has three columns: 'Event Name', 'Table Name', and 'Data Source'. It contains two rows of data.

Events		
Assigned Entities		
Event Name	Table Name	Data Source
Valve Condition Assessment	GIS_Valve_Condition_Assess...	SQL_enCapture
GIS Watermain Interruption	GIS_Watermain_Interruption_n...	SQL_enCapture

Figure 58. Events List

6. To save, press the 'Save'  button located in the top-right of the admin screen.

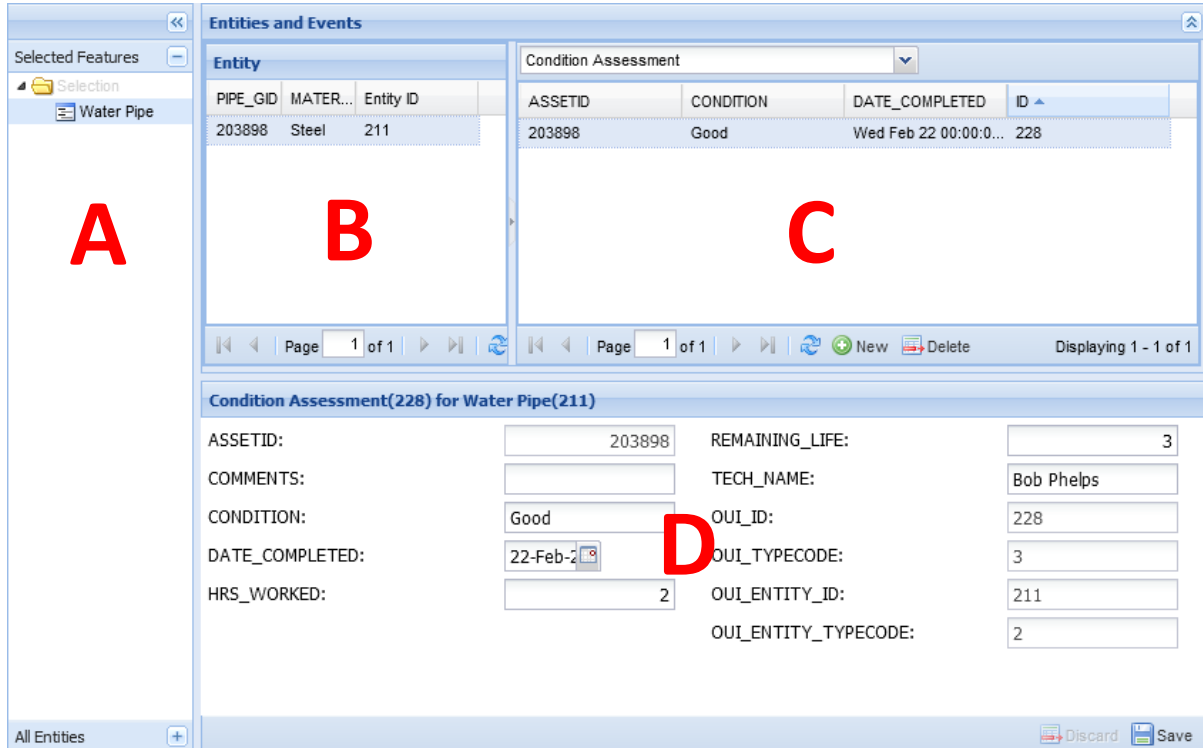


Event Form

The 'Event Form' administration area is used to specify how attribute information for an event will be displayed in the user environment. Show/hide columns, column display order, and attribute editability are all defined here.

User Environment

enCapture's user environment is where attribute information is entered by those who are responsible for populating your various entity and event tables. The sections of the user environment are listed below so as that you are aware of the changes you will be implementing in the 'Event Form' administration page.



The screenshot displays the 'Entities and Events' application window. It is divided into several panes. On the left, a 'Selected Features' pane shows a tree view with 'Water Pipe' selected. The main area is split into two columns. The left column contains an 'Entity' table with columns 'PIPE_GID', 'MATER...', and 'Entity ID'. It shows one record: '203898', 'Steel', '211'. The right column contains a 'Condition Assessment' table with columns 'ASSETID', 'CONDITION', 'DATE_COMPLETED', and 'ID'. It shows one record: '203898', 'Good', 'Wed Feb 22 00:00:0...', '228'. Below these tables are navigation controls for both, including 'Page 1 of 1', 'New', and 'Delete' buttons. At the bottom, a 'Condition Assessment(228) for Water Pipe(211)' detail panel is shown, containing various input fields for attributes like 'ASSETID', 'COMMENTS', 'CONDITION', 'DATE_COMPLETED', 'HRS_WORKED', 'REMAINING_LIFE', 'TECH_NAME', 'OUI_ID', 'OUI_TYPECODE', 'OUI_ENTITY_ID', and 'OUI_ENTITY_TYPECODE'. The interface has a blue header and footer with 'All Entities' and 'Discard/Save' buttons.

PIPE_GID	MATER...	Entity ID
203898	Steel	211

ASSETID	CONDITION	DATE_COMPLETED	ID
203898	Good	Wed Feb 22 00:00:0...	228

Condition Assessment(228) for Water Pipe(211)

ASSETID: 203898
COMMENTS:
CONDITION: Good
DATE_COMPLETED: 22-Feb-2
HRS_WORKED: 2

REMAINING_LIFE: 3
TECH_NAME: Bob Phelps
OUI_ID: 228
OUI_TYPECODE: 3
OUI_ENTITY_ID: 211
OUI_ENTITY_TYPECODE: 2

Figure 59. enCapture User Environment

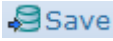
The sections of the user environment shown above are:

- **A - Entity list:** Shows a list of the available entities.
- **B - Entity list view panel:** Shows an abbreviated view of the selected entity's records.
- **C - Event list view panel:** Shows an abbreviated view of the selected event's records for the current entity instance.
- **D - Detail view panel:** Shows a detailed view of the selected record's attributes. This is where users enter attribute information.

It is the information displayed in sections C and D that is defined in the 'Event Form' administration page.

List View

The 'List View' panel of the 'Event Form' administration page is where you specify exactly which attributes will display in the event list view panel (section C in *Figure 59* above) of the user environment. You can also set the order in which columns will display.

After you make any changes in this section, make sure you press the 'Save'  button located in the top-right of the 'Event Form' administration screen.

Hide Columns

To prevent a column from displaying in the event list view panel of the user environment, simply press the 'Hide' button for the column.

Column Name	Column Label	Hide
PIPE_GID	PIPE_GID	<input type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>
DIAMETER	DIAMETER	<input type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>




 Add |  Refresh

Figure 60. Hide Columns

Add Columns


To display a column that has previously been hidden, press the 'Add'  button in the lower left corner of the 'List View' panel. In the 'Select Columns to Add' dialog, check the columns you wish to display and press the 'OK' button.

Change Column Order

To modify the order that the columns will display in the event list view panel of the user environment, drag and drop the columns into the order required.

Detail View

The 'Detail View' panel of the 'Event Form' administration page is where you specify exactly which attributes will display in the detail view panel (section D in *Figure 59* above) of the user environment. You also specify the editability of the attribute values and the order in which columns will display.

After you make any changes in this section, make sure you press the 'Save'  button located in the top-right of the 'Event Form' administration screen.

Set Editability of a Column

To enable a user to edit a column's value in the user environment, you must set the column to be editable. To do this, check the 'Editable' checkbox next to the column.

Column Name	Column Label	Hide	Editable
DIAMETER	DIAMETER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PIPE_GID	PIPE_GID	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>	<input checked="" type="checkbox"/>




Figure 61. Set Editability of a Column

Hide Columns

To prevent a column from displaying in the detail view panel of the user environment, simply press the 'Hide' button for the column.

Column Name	Column Label	Hide	Editable
DIAMETER	DIAMETER	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PIPE_GID	PIPE_GID	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LENGTH	LENGTH	<input type="checkbox"/>	<input checked="" type="checkbox"/>
MATERIAL	MATERIAL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VALUE	VALUE	<input type="checkbox"/>	<input checked="" type="checkbox"/>





Figure 62. Hide Columns

Add Columns

To display a column that has previously been hidden, press the 'Add'  button in the lower left corner of the 'Detail View' panel. In the 'Select Columns to Add' dialog, check the columns you wish to display and press the 'OK' button.

Change Column Order

To modify the order that the columns will display in the detail view panel of the user environment, drag and drop the columns into the order required.



Relationships

Relationships specify which map layer contains the spatial information pertaining to an entity. To access this section, click on the 'Relationship' link in the enCapture administration list. To define a layer to entity relationship, follow the steps listed below.

1. Select the required layer in the layer list in the left panel of the 'Relationship' admin screen.

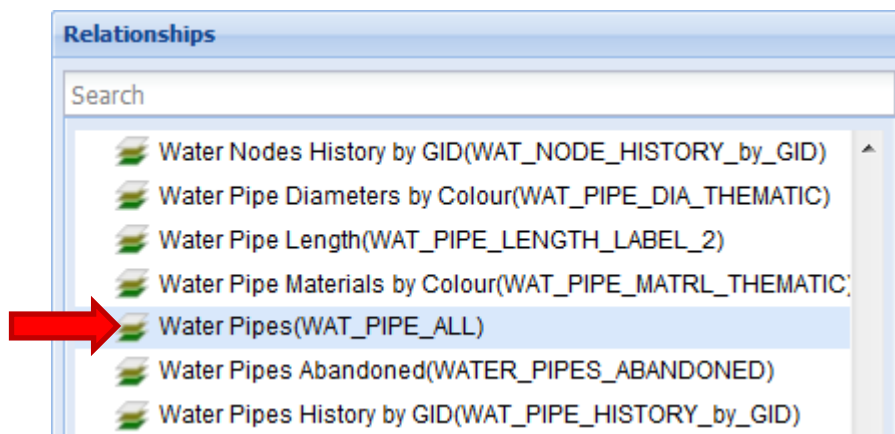


Figure 63. Relationships Layer List

2. In the lower right 'Available Entities' panel, select the entity you wish to link to the selected layer and press the 'Assign' button.

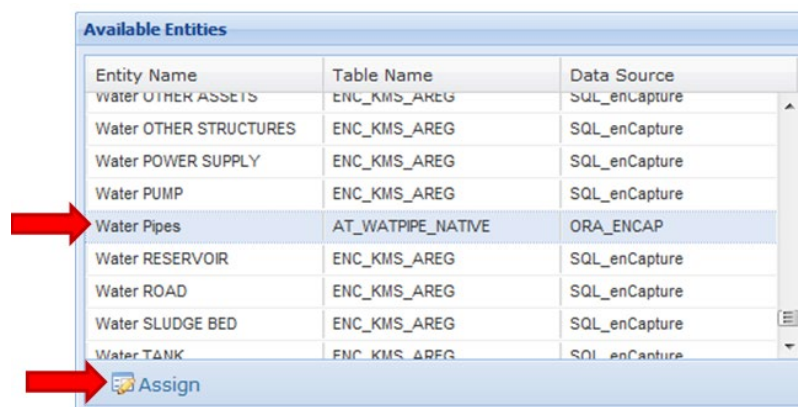


Figure 64. Assign Available Entities

3. You should now see the 'Relationship Column Mapping' dialog. This dialog is where you specify the common field between the underlying data tables of the entity and the layer. In the top dropdown, 'Parent Column', select the common column from the layer's data table. In the bottom dropdown, 'Child Column', select the common column from the entity's data table. Press the 'OK' button.

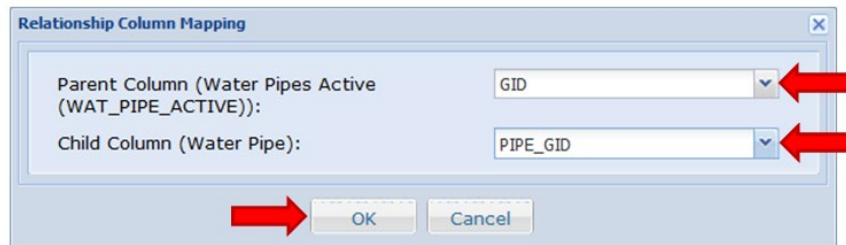



Figure 65. Relationship Column Mapping

4. The selected entity will now appear in the 'Related Entities' panel (top right) for the selected layer.

Related Entities		
Name	Column	Parent Entity Column
Water Pipe	PIPE_GID	GID

Figure 66. Related Entities List

5. Press the 'Save'  button located in the top-right of the admin screen to save the defined relationship. Once the save operation is complete, the selected layer will move to the top of the left layer list and will have its assigned entity underneath it.

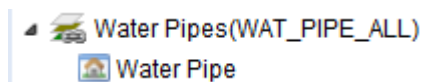


Figure 67. Entity in Layer List



Permissions

The permission administration area is used to specify the permissions that your enlighten users and groups have on all defined entities and events.

To access this section, click on the 'Permission' link in the enCapture administration list.

enCapture allows permissions to be specified at both group and user levels. Group level permissions will be inherited by all users within that group. User level permissions will apply to only the selected user.

Instructions on specifying permissions at both these levels are outlined below.

Define Permissions for a Group

Permissions assigned to an enlightened user group will be inherited by all users in that group. To define permissions at the group level, follow the steps outlined below.

1. Select the group in the 'Permission' list in the left panel of the admin screen.

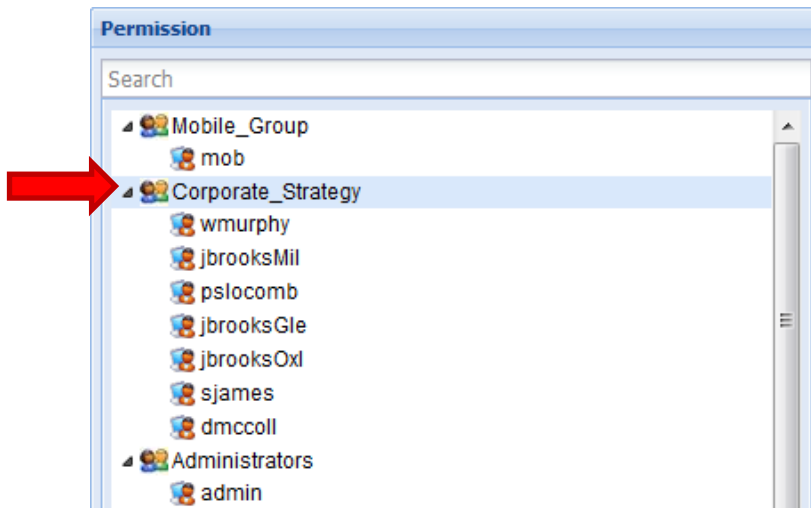


Figure 68. Permissions List

2. Select either the 'Entities' or 'Events' tab in the 'Permission Definition' section.



Figure 69. Entities Tab

3. Assign the required permission levels by checking the appropriate options in the 'Permission Definition' section. Modifications will be indicated by a small red triangle above each checkbox.

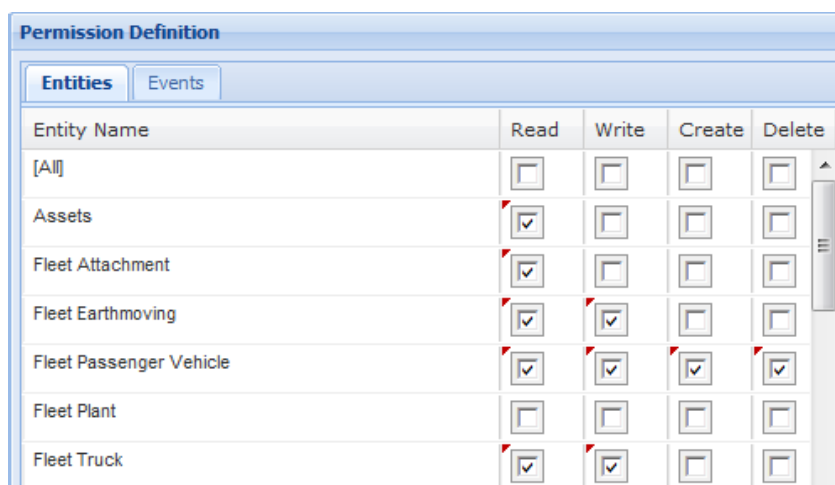
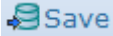


Figure 70. Permission Levels

- **Note:** The 'Write', 'Create', and 'Delete' checkboxes are disabled for foreign entities. By definition, a user cannot modify the attributes of a foreign entity, so the only permission option that is applicable to these is 'Read'.

4. Press the 'Save'  button located in the top-right of the admin screen to save the defined permissions.

Define Permissions for a User

Permissions assigned to an enlightened user will apply to that user only. To define permissions at the user level, follow the steps outlined below:

1. Select the user in the 'Permission' list in the left panel of the admin screen.

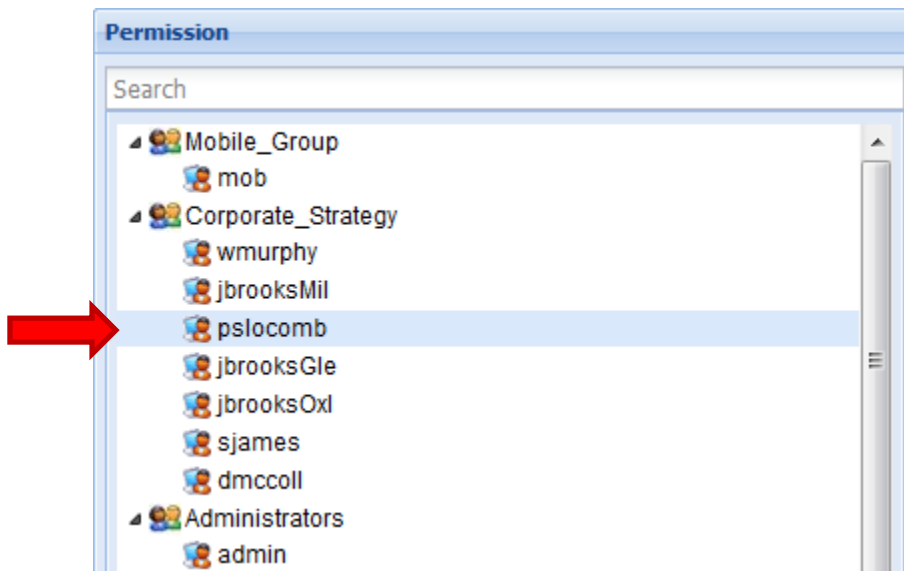


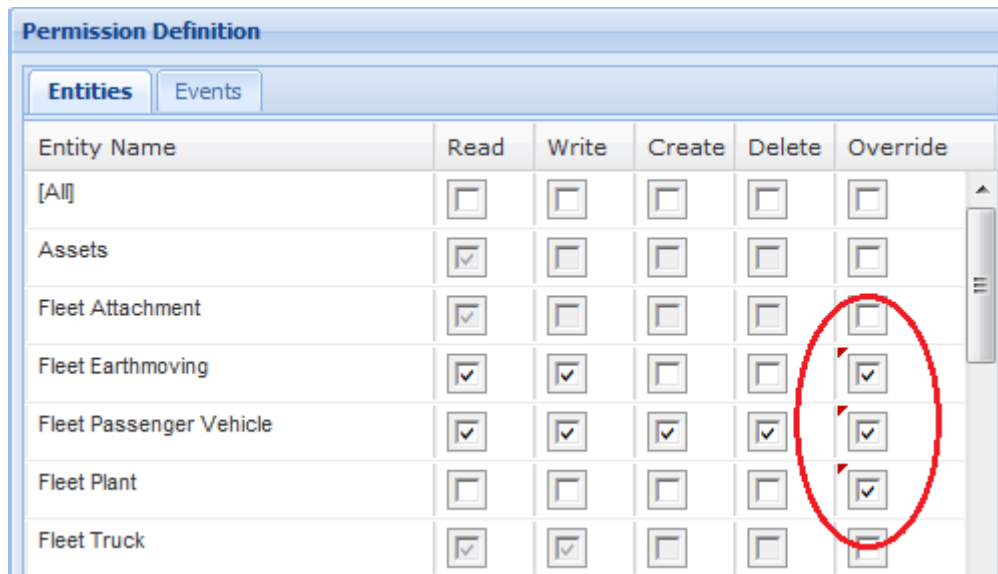
Figure 71. Permissions List

2. Select either the 'Entities' or 'Events' tab in the 'Permission Definition' section.



Figure 72. Entity Tab

3. In the 'Permission Definition' section, the user's inherited group level permissions will already be checked. To assign user permissions that differ from the group permissions, you must first override the group level permissions. To do this, check the 'Override' checkbox for the applicable events/entities. Once you do this, the permissions checkboxes will become active.



Entity Name	Read	Write	Create	Delete	Override
[All]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fleet Attachment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fleet Earthmoving	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Passenger Vehicle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Plant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Truck	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

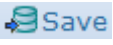
Figure 73. Overriding Permissions

- **Note:** The 'Write', 'Create', and 'Delete' checkboxes are disabled for foreign entities. By definition, a user cannot modify the attributes of a foreign entity, so the only permission option that is applicable to these is 'Read'.

- Now you can assign the required permission levels by checking the appropriate options. Modifications will be indicated by a small red triangle above each checkbox.

Permission Definition					
Entities Events					
Entity Name	Read	Write	Create	Delete	Override
[All]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fleet Attachment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fleet Earthmoving	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Passenger Vehicle	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Plant	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fleet Truck	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 74. Permission Levels

- Press the 'Save'  button located in the top-right of the admin screen to save the defined permissions.



Tips and Tricks

Pre-population Scripts

When creating a new event record, enCapture offers functionality to carry attributes from the associated entity instance over to the new event instance. Setting this up consists of two main tasks: assigning a variable name to the required entity attribute, and implementing a pre-population script on the required event attribute. The details to perform these tasks are listed below.

Assign Variable Name

The first part to creating a pre-population script is to assign a variable name to the entity attribute that you wish to have carried over to the event records. To do this, complete the following:

1. In the 'Entity' admin screen, select the entity attribute you wish to carry over to your new event records and press the 'Edit' button. This will open the 'Edit Column' dialog.
2. In the 'Edit Column' dialog, enter a name for the attribute in the 'Variable' field. This name will be used to refer to the attribute in the pre-population script you will create in the proceeding section.

The 'Edit Column' dialog box contains the following fields and values:

Field	Value
Column Name:	GID
Column Label:	GID
Tool Tip:	GID of the sewer node.
Variable:	GID
Validation:	None
Column Type:	NUMBER(10,0)
Column Constraint:	
Data Type:	Number
Length:	0
Precision:	10
Scale:	0
Lookup:	None
Default Value:	
Mandatory:	<input checked="" type="checkbox"/>

Figure 75. Edit Column Dialog

3. Press 'OK' and save the changes you have made.

Write Pre-Population Script

The second part of creating a pre-population script is to write the pre-population script, referencing the variable created in the previous section.

1. In the 'Event' admin screen, select the column of the event that you wish to have pre-populated with the entity attribute. Press the 'Edit' button to open the 'Edit Column' dialog.
2. In the 'Edit Column' dialog, enter a pre-population script in the 'Default Value' field that references the variable name for the entity column that you created in the previous section. The format of the script is as follows:

■ <<(ENTITYCOLUMN *variableName*)>>

3. Copy the script exactly as it is above and replace *variableName* with the value you assigned to the 'Variable' field of the entity column. In the example of the previous section, 'GID' was used as *variableName*. So the script would appear as follows:

■ <<(ENTITYCOLUMN GID)>>

4. Once you have entered the script in the 'Default Value' field, press the 'OK' button and save the event definition.



Known Issues

Layer to Entity Relationships using OUI_TYPECODE

Relationships based on OUI_TYPECODE are currently not implemented in the user environment. These relationships can be constructed in the 'Relationship' administration area, but no records will be returned in the user environment.



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