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Technical Note:

# Mondrian and non-ASCII characters

Revision History:

| | Version | Author | Details |
|---|---|---|---|
| 1 | 1.0 | Laurentiu | Created this document |
| | | | |
| | | | |

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## Servers Used

Pentaho BI Server 5.0

Mondrian 3.6.1

## Essential Configuration

In order to have Mondrian work with Unicode characters it is important to declare the correct character encoding for the XMLA servlet. In web.xml check for the introduction of the XMLA servlet and verify there is an init parameters as follows:

```
    <init-param>
      <param-name>CharacterEncoding</param-name>
      <param-value>UTF-8</param-value>
    </init-param>
```

For example, Pentaho BI Server comes out of the box with:

```
  <servlet>
    <servlet-name>Xmla</servlet-name>
    <servlet-class>org.pentaho.platform.web.servlet.PentahoXmlaServlet</servlet-class>
    <init-param>
      <param-name>DataSourcesConfig</param-name>
      <param-value>${pentaho.solutionpath}${pentaho.olap.xmladatasources}</param-
value>
    </init-param>
    <init-param>
      <param-name>CharacterEncoding</param-name>
      <param-value>UTF-8</param-value>
    </init-param>
  </servlet>
```

## Schema definition

Special attention should be paid to the correct definition of the schema files. The captions for Cubes, Dimensions, Hierarchies, Levels, and Measures are stored in the markup as attributes. This should obey the Unicode Technical Report (check here for reference http://www.w3.org/TR/unicode-xml/#Notation )

The following is a correct definition for a dimension, containing a non-ASCII character (Schön):

```
<Dimension foreignKey="CUSTOMERNUMBER" name="Sch&#246;n">
```

Observe the correct definition of the dimension name: (name="Schön" as opposite to Schön ).

Another example, this time for Far Eastern characters:

```
<Dimension foreignKey="PRODUCTCODE" name="Product &#x50AB;&#x50AC;&#x50AD;">
```

Leads to a dimension named Product 傋催傭.

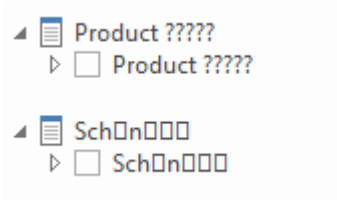
It Is also important to define the correct encoding in the beginning of the file:

```
<?xml version="1.0" encoding="UTF-8"?>
```

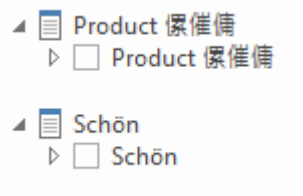
Observe the encoding declared as UTF-8 here.

It is important to note that this file should be saved as an ASCII file. This means the UTF-8 Byte Order Mark in the beginning of the file (the byte sequence `0xEF,0xBB,0xBF`) **should not be present**! Trying to load such a file, although well-formed leads to errors in the Pentaho BI server

Failing to observe these rules leads to unreadable captions as those in the picture below:




The picture below shows the intended outcome:

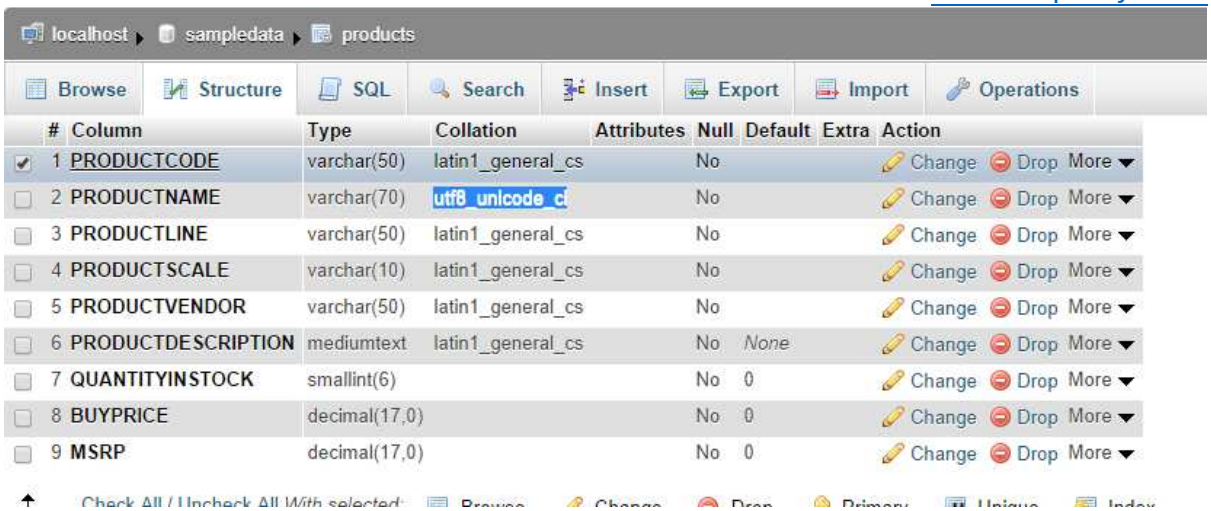



## Non – ASCII characters in the member names.

This chapter applies to member names stored in relational databases. It exemplifies with the SteelWheels sample data from Pentaho BI Server 5.0 and MYSQL.

It is important to observe the correct encoding for the columns involved in the member description. This is to be set to **utf8_unicode_ci**.

In the test environment used for this paper the encoding was wrong (latin1_general_cs) and was corrected. The following in the corrected definition for products table of SteelWheel

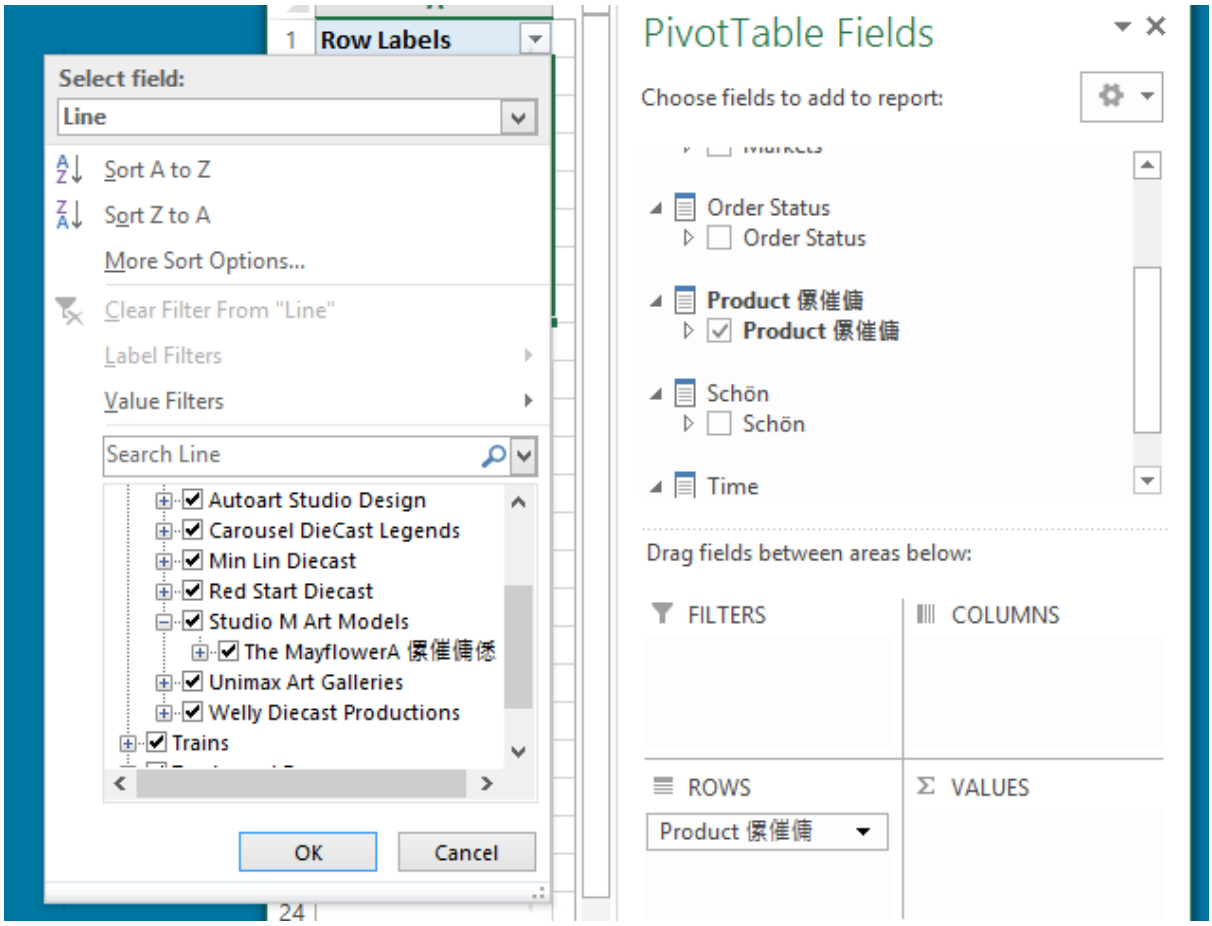



Observe the PRODUCTNAME column with the correct encoding.

Having this encoding set an arbitrary name was changed using the following statement:

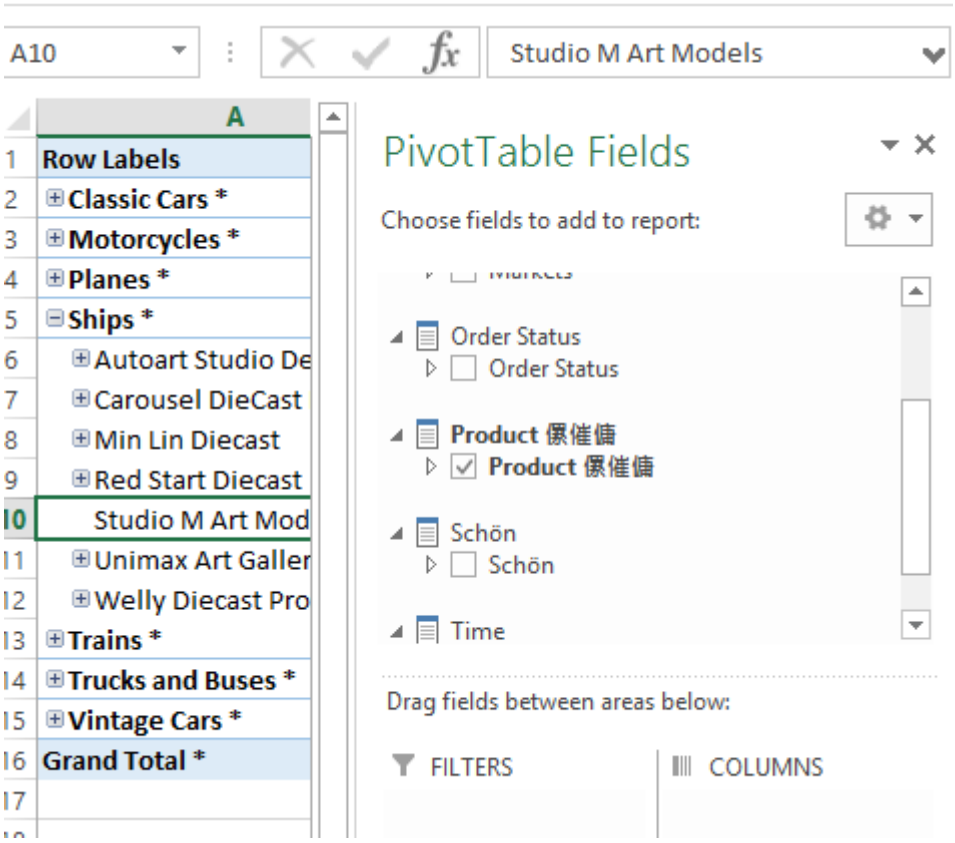
UPDATE `products` SET `PRODUCTNAME`='The MayflowerA 傈催傭倭' WHERE PRODUCTCODE='S700_1938'

The results are mixed. Some queries return the proper result. For example, when trying to filter on row labels one gets a view as follows:




The member with far eastern characters appears here.

However, when drilling in the pivot table to the member, the member does not appears:




Further analysis shows that a select like the following:

SELECT {AddCalculatedMembers({[Ispettore_D.Ispettore_H].[Ispettore].Members})} DIMENSION PROPERTIES MEMBER_TYPE ON COLUMNS FROM [Vendite] CELL PROPERTIES CELL_ORDINAL

Correctly returns the member.

However, a select like the following:

SELECT NON EMPTY Hierarchize(AddCalculatedMembers({DrilldownLevel({[Ispettore_D.Ispettore_H].[All Ispettori]})})) DIMENSION PROPERTIES PARENT_UNIQUE_NAME ON COLUMNS FROM [Vendite] CELL PROPERTIES VALUE

Will not return a member.

**This is interpreted as a bug in Mondrian.**

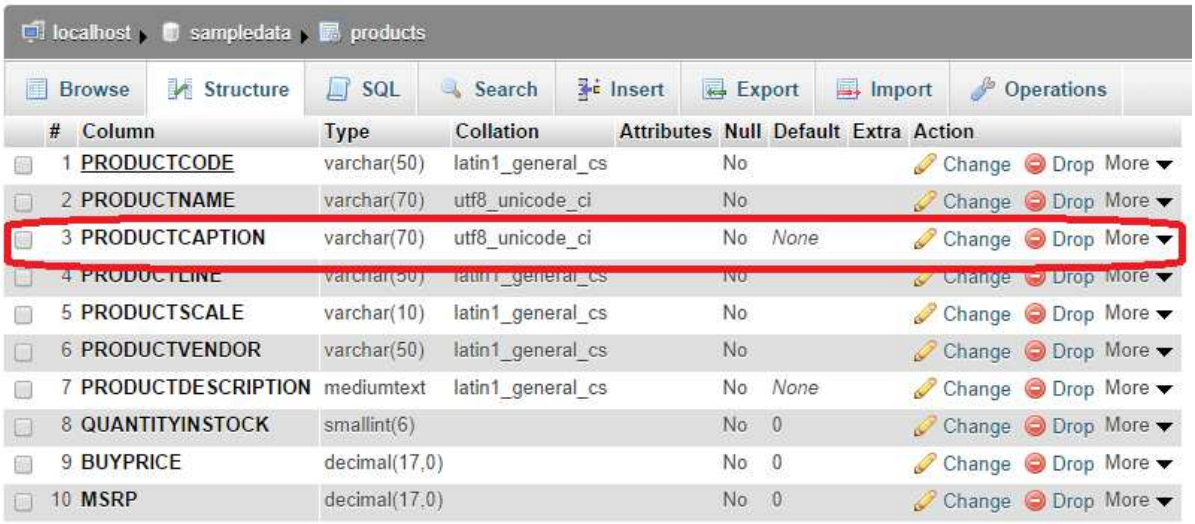
**There is however a workaround as follows.**

The schema used till now had no captionColumn for the level where this member belongs:

```
<Level name="Product" table="PRODUCTS" column="PRODUCTNAME" type="String"
uniqueMembers="true" levelType="Regular" hideMemberIf="Never">
```

In such a case Mondrian uses the name of the member for the display caption. As found before this is affected by a bug.

However, the table can be adjusted to accommodate the caption too. The figure below shows the adjusted table:




| # | Column | Type | Collation | Attributes | Null | Default | Extra | Action |
|---|---|---|---|---|---|---|---|---|
| 1 | PRODUCTCODE | varchar(50) | latin1_general_cs | | No | | | Change Drop More |
| 2 | PRODUCTNAME | varchar(70) | utf8_unicode_ci | | No | | | Change Drop More |
| 3 | PRODUCTCAPTION | varchar(70) | utf8_unicode_ci | | No | None | | Change Drop More |
| 4 | PRODUCTLINE | varchar(50) | latin1_general_cs | | No | | | Change Drop More |
| 5 | PRODUCTSCALE | varchar(10) | latin1_general_cs | | No | | | Change Drop More |
| 6 | PRODUCTVENDOR | varchar(50) | latin1_general_cs | | No | | | Change Drop More |
| 7 | PRODUCTDESCRIPTION | mediumtext | latin1_general_cs | | No | None | | Change Drop More |
| 8 | QUANTITYINSTOCK | smallint(6) | | | No | 0 | | Change Drop More |
| 9 | BUYPRICE | decimal(17,0) | | | No | 0 | | Change Drop More |
| 10 | MSRP | decimal(17,0) | | | No | 0 | | Change Drop More |

And the entry corresponding to the member can be adjusted as follows:

| PRODUCTCODE | PRODUCTNAME | PRODUCTCAPTION | PRODUCTLINE | PRODUCTSCALE | PRODUCTVENDOR | PRODUCTDESCRIPTIOI |
|---|---|---|---|---|---|---|
| S700_1938 | The Mayflower | The MayflowerA 僳催傭倜 | Ships | 1:700 | Studio M Art Models | Measures 31 1/2 inches Long x 25 1/2 inches High x... |

In here, the product name remains an ASCII string, but the caption has Far Eastern characters.

Correspondingly, the schema should be adjusted as follows:

```
<Level name="Product" table="PRODUCTS" column="PRODUCTNAME" type="String"
uniqueMembers="true" levelType="Regular" hideMemberIf="Never"
captionColumn="PRODUCTCAPTION">
```

Observe the new attribute `captionColumn="PRODUCTCAPTION"` to the end. With this schema the result is correct in both cases (check pictures on the next page).

| | A |
|---|---|
| 1 | Row Labels |
| 2 | ⊞ Classic Cars * |
| 3 | ⊞ Motorcycles * |
| 4 | ⊞ Planes * |
| 5 | ⊟ Ships * |
| 6 | ⊞ Autoart Studio Design * |
| 7 | ⊞ Carousel DieCast Legends * |
| 8 | ⊞ Min Lin Diecast * |
| 9 | ⊞ Red Start Diecast * |
| 10 | ⊟ Studio M Art Models * |
| 11 | The MayflowerA 傈催傭倭 |
| 12 | ⊞ Unimax Art Galleries * |
| 13 | ⊞ Welly Diecast Productions * |
| 14 | ⊞ Trains * |
| 15 | ⊞ Trucks and Buses * |
| 16 | ⊞ Vintage Cars * |
| 17 | Grand Total * |
| 18 | |