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OpenHDS Physical Data Extensions

Site-specific variables in core entities

Through the Data Extension Module it is possible to add Physical Extensions without modifying any source code.

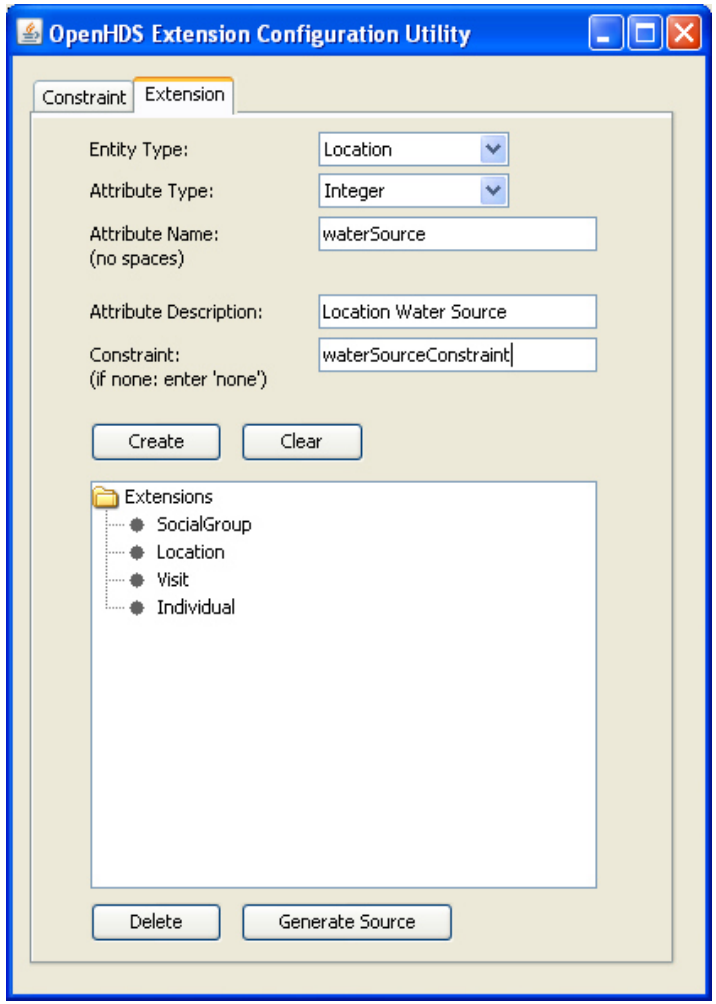
Through a user interface it is possible to define the entity type the extension is for (i.e. individual, location, social group, visit), attribute type (any of the primitives), name of the attribute, and constraints.

The **dataextensions.jar** is located in **openhds-server/dataextensions.**

Data extension module

To run it just double-click on it and the application will open as below:

In the Extension tab and fill out the form like the following (In the example, a new water source attribute will be created for the Location entity. It's defined to be an 'integer' type and has a 'waterSourceConstraint' specified as its constraint.)

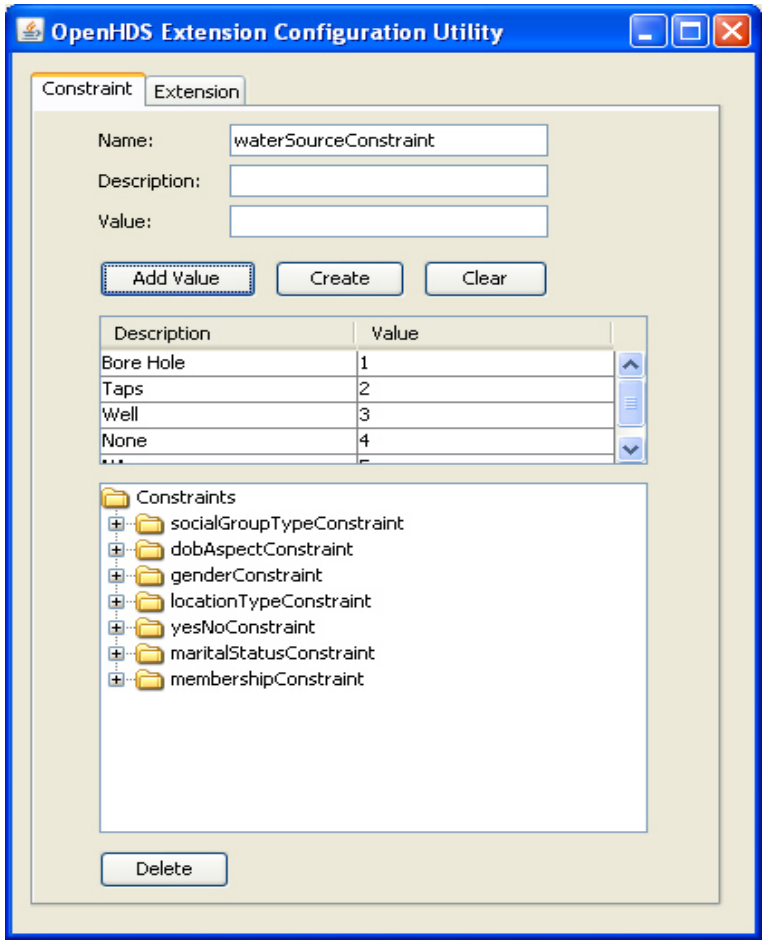


Constraint definition

Press the 'Create' button, the extension will now be added to the window below.

Proceed to the Constraint tab and fill out the form like the following.

In this example, the 'waterSourceConstraint' is defined. It will restrict the values of the waterSource attribute defined earlier to the values 1 through 5. Press the 'Create‘ button to add the constraint to the window below.



Source adaptations (without constraints)

Proceed back to the Extension tab and press the 'Generate Source' button. This will add the new attribute to the Location entity.

Now that the attribute has been successfully added to the Location table, that attribute must now be linked to the web form.

The Web module contains web forms for each of the core entities in the system. The location web forms consist of create, edit, detail, and list .xhtml files

Modify the create, edit, detail and list .xhtml files located in **openhds-server\web\src\main\webapp\location** by adding the following snippet

```
<h:outputText value="Water Source:"/> <h:inputText id="waterSource"
value="#{locationCrud.item.watersource}"/>
```

Adding this snippet is the only requirement for linking attributes with no constraints.

Rebuild the OpenHDS by executing **mvn clean install** from the root folder and deploy the application.

Source adaptations 2 (attribute with constraints)

OpenHDS provides special user interface widgets for attributes that have constraints associated with them. The water source attribute defined previously had many constraints applied to it but there is no indication of those constraints on the web form. It's not reasonable for a user of the application to remember the meaning of a value.

Add the widget to display constraints for attributes by adding the following snippet to each one of the location entity .xhtml files.

```
<h:outputText value="Water Source:"/>

<img class="clickable" onclick="O$('popupWindowForWaterSource').showCentered();"
    src="#{request.contextPath}/resources/images/question.png" />

<h:inputText id="watersource" value="#{locationCrud.item.watersource}"
    converter="#{defaultConverter}" />

<h:message for="watersource" errorClass="error" errorStyle="color: red" infoStyle="color:
    green"/>
```

The final modification involves adding a new snippet to the **default.xhtml** file located in **openhds-server\web\src\main\webapp\templates**

(see next slide)

Redeploy the OpenHDS and proceed to the Location form. The newly added attribute with its defined constraints is now viewable.

Source adaptations 2 – edits to default.xhtml

```
<o:popupLayer id="popupWindowForWaterSource "
        width="30%"
        height="30%">
    <div style="position:absolute;right:1%;top:1%">
        <input type="button" value="Close [X]"
    onclick="O$('popupWindowForWaterSource').hide();"/>
    </div>
    <div style="overflow:auto;padding:.5em;">
        <h3>#{msg.popupValidValues}:</h3>
        <ul>
            <c:forEach items="#{valueExtensionIterator.waterSourceConstraint}"
    var="dv">
                <li>#{dv.key} - #{dv.value}</li>
            </c:forEach>
        </ul>
    </div>
    </o:popupLayer>
```

Redeploy the OpenHDS and proceed to the Location form. The newly added attribute with its defined constraints is now viewable.