

Guidelines for using variants in Common Cartridges

Variants enable a content provider to provide multiple representations of the same content with a single cartridge. This is most useful for adding support for new extensions as they're created. For example, a content provider may wish to add support for the assignment extension but doesn't want to create two versions of a cartridge, one with the extension, and one where an assignment is just an HTML file.

The recommended way to handle such a situation in the manifest file is for an organization item to point to a resource that is supported by all importers, such as any core Common Cartridge type. Although this may not be the preferred item to import, it keeps the cartridge easily backwards-compatible for importers that don't support extensions or variants. This webcontent resource node can now specify a variant id to the preferred item to import. In this case, it would point to a resource that is an assignment.

This approach allows cartridges to be imported everywhere with good results, and the importers that support the extension can import the preferred version of the resource.

A reduced version of a manifest XML is given as an example of this description:

```
<manifest xmlns:cpx="http://www.imsglobal.org/xsd/imscp_v1p1"
xmlns="http://www.imsglobal.org/xsd/imscv1p3/imscp_v1p1">
  <organizations>
    <organization identifier="O_1" structure="rooted-hierarchy">
      <item identifier="I_1">
        <item identifier="I_0000">
          <title>Assignments</title>
          <!-- Point to the lowest common denominator here -->
          <item identifier="I_0001" identifierref="extensionresource1">
            <title>HTML Assignment</title>
          </item>
        </item>
      </item>
    </organization>
  </organizations>
  <resources>

    <!-- preferred item -->
    <resource identifier="extensionresource1_variant1" type="assignment_xmlv1p0"
href="Extension_R/assignment.xml">
      <file href="Extension_R/assignment.xml"/>
    </resource>

    <!-- backup item -->
    <!-- The importer will find this resource, but see that it points to a preferred item, so it uses
preferred one if supported -->
    <resource identifier="extensionresource1" type="webcontent">
      <cpx:variant identifier="extensionresource1_variant" identifierref="extensionresource1_variant1">
        <cpx:metadata></cpx:metadata>
      </cpx:variant>
      <file href="Extension_R/Variant1.html"/>
    </resource>
  </resources>
</manifest>
```

</resource>

</resources>

</manifest>