ISIS-254 Add support for blob type

The work in progress

POC repository

- The POC is located at

- https://github.com/INightmare/apache-isis/tree/ISIS-254

Goals

- Add support for blob in all objectstores

- Add support for interacting with content to Html, Scimpi and Wicket viewers

- Add additional mechanism to allow treating blob data as a file or a meaningful content (so content can be understood by name and/or MIME type)

Isis metamodel

- Added support for *byte[]* as a value type. It was treated as collection of objects until then.

- To accomplish this:

  - [ByteArrayValueSemanticsProvider](#) and [ByteArrayValueTypeFacetFactory](#) were dded

  - CollectionFacetFactory was modified to exclude byte[] properties

- Added LazyPropertyFacet (it is added to properties of type *byte[]* or properties marked with @Lazy

Isis metamodel (2)

- Added support for 'describing' content

- Facet added to support '*ContentDescription describeProperty()*' method returning a name and MIME type describing the type of content present

- *In future MIME type could also be used for customizing the way the content is represented by the viewers (as was already suggested by Kevin)*

Isis metamodel (3)

- Example of *describe*

```
private byte[] attachment;

public byte[] getAttachment() {

    return attachment;

}

public ContentDescription describeAttachment() {

    return new DefaultContentDescription("default.txt", "text/plain");

}
```

Isis metamodel (4)

- Pending problems
  - The only way to know if the proprty is null or has some content is to check it's value, however this is not an option if we want proper lazy loading. How should we check if there is some content present (to display or not the actual content/download link). Additional behind the scenes query? Do not bother and leave hidding/showing the property to the users?

  - Is *describe* method a good idea? Maybe a custom type *File* or *Content* could be created that would store the *byte[],* name and MIME type in DB.

Work on ObjectStores

- No work here was done

- All testing is carried out using JDO which already supports *byte[]* type and even lazy loads *byte[]* properties (though, this will still need to work to prevent viewers from loading those too soon). Currently when object ObjectAdapterMemento is created it will also load all properties: call *OneToOneAssociation.get(...)* which will access a property to create an adapter.
  My idea here was to create special kind of Adapter that does not load the property to access it, but instead stores an accessor method to access the property when *Adapter.getObject()* is called. The adapter would be used for properties with *LazyPropertyFacet*.

Work on viewers

- Support for binary blob as a file in Wicket

- To accomplish this:

    - [ByteArrayPanel](#) added to display download link and upload box in edit mode

    - It will use the name from [ContentDescription](#) as a file name and will also pass MIME type to the browser

- *POC for HtmlViewer was also done before ISIS-254 branch, but is now thrown away*

Wicket viwer

- Preview