

fedora

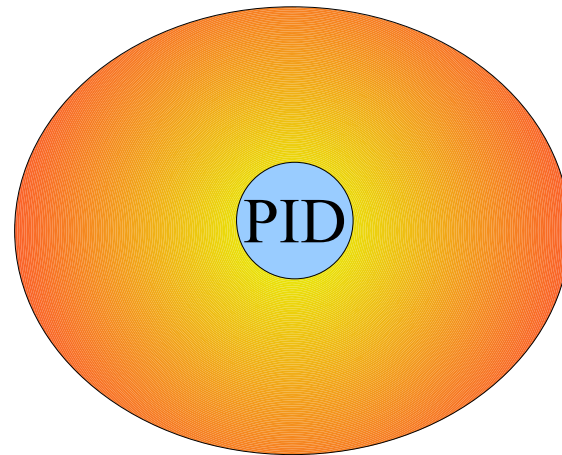


The Fedora Object Model

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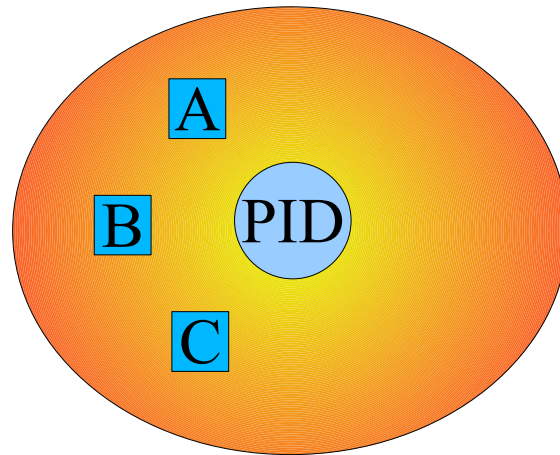
What is a Fedora Object?

A persistently identified information resource



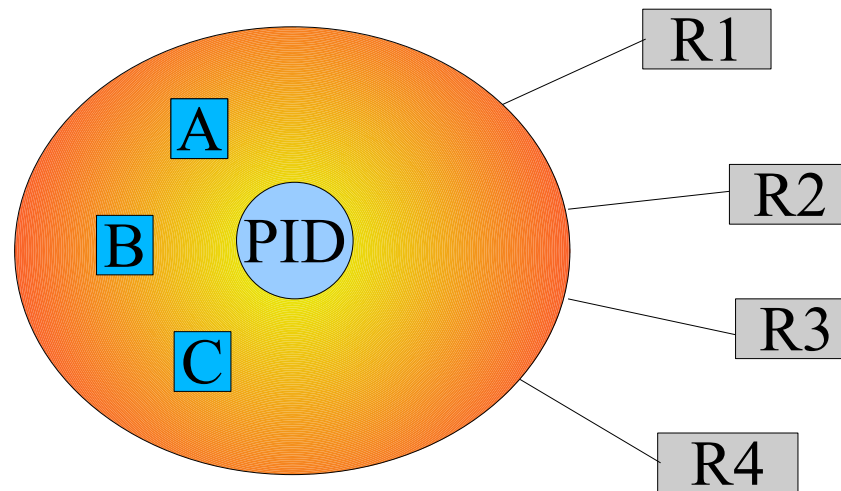
What is a Fedora Object?

*A persistently identified information resource
...containing **typed** bytestreams*



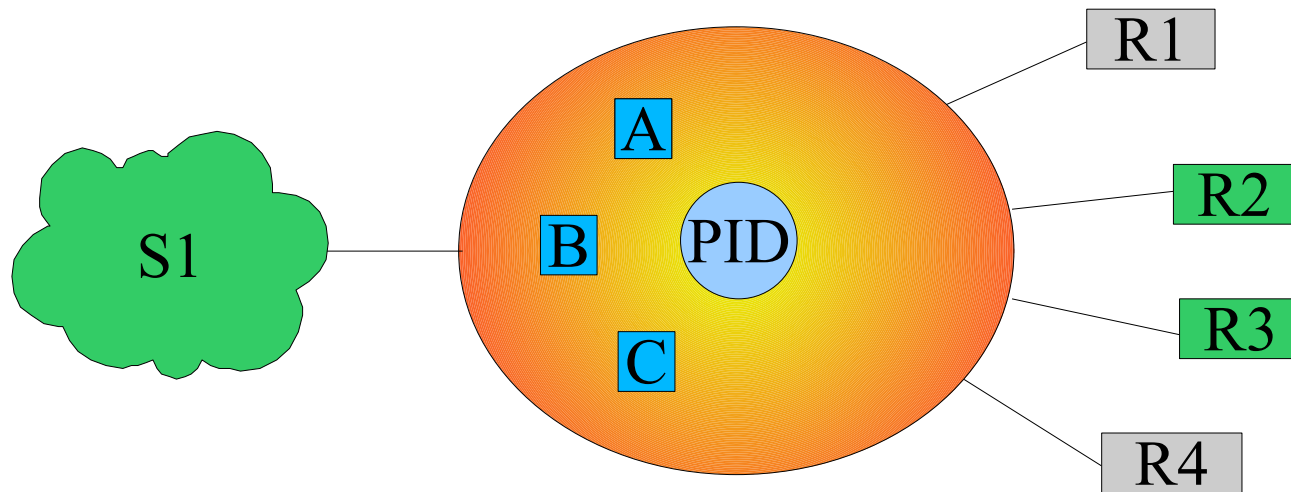
What is a Fedora Object?

A persistently identified information resource
...containing typed bytestreams
*...and providing **named representations***



What is a Fedora Object?

*A persistently identified information resource
...containing typed bytestreams
...and providing named representations*



...through the use of services or programs.

How is it Encoded?

- FOXML – Fedora Object XML
 - Designed for Fedora, so the encoding is obvious
- METS Extension
 - Mapping is difficult

Components of a Fedora Object



The diagram shows four components of a Fedora Object, each represented by a blue rectangular box. The boxes are arranged vertically and are enclosed within a dashed-line border. The top box is labeled 'PID'. The second box is labeled 'Object Properties'. The third box is labeled 'Datastream' and is part of a stack of three overlapping boxes. The bottom box is labeled 'Disseminator' and is also part of a stack of three overlapping boxes.

PID

Persistent identifier

Object Properties

System-managed

Datastream

Physical content/metadata

Disseminator

Provides representations

What is a PID?

- *A Persistent Identifier*
- Syntax
 - *namespace:name*
 - <http://www.fedora.info/definitions/identifiers/>
- Examples
 - demo:42
 - nsdl:MyImage
 - hdl:2000%2F2000

Object PID in FOXML

```
<?xml version="1.0" encoding="UTF-8"?>
<digitalObject xmlns="info:fedora/fedora-system:def/foxml#"
  PID="demo:42">
  <!-- Object properties go here -->
  <!-- Datastreams go here -->
  <!-- Disseminators go here -->
</digitalObject>
```

Object Properties

Object Type

“FedoraObject”, “BMechObject”, or “BDefObject”

Created Date

“2007-04-30T19:59:03.000Z” (UTC, ISO8601 format)

Last Modified Date

“2007-04-30T19:59:03.000Z” (UTC, ISO8601 format)

State

“A”, “I”, or “D” (Active, Inactive, Deleted)

Label

“Any string”

Content Model

“Any string”

Owner ID

“Any string” (Fedora 2.2+)

Object Properties in FOXML

```
<?xml version="1.0" encoding="UTF-8"?>
<digitalObject xmlns="info:fedora/fedora-system:def/foxml#"
  PID="demo:42">
  <objectProperties>

    <property NAME="http://www.w3.org/1999/02/22-rdf-syntax-ns#type"
      VALUE="FedoraObject"/>

    <property NAME="info:fedora/fedora-system:def/model#state"
      VALUE="A"/>

    <property NAME="info:fedora/fedora-system:def/model#label"
      VALUE="Hello world"/>

    <property NAME="info:fedora/fedora-system:def/model#createdDate"
      VALUE="2007-04-30T19:59:03.000Z"/>

    <property NAME="info:fedora/fedora-system:def/model#lastModifiedDate"
      VALUE="2007-04-30T20:33:28.832Z"/>

  </objectProperties>
  <!-- Datastreams go here -->
  <!-- Disseminators go here -->
</digitalObject>
```

What is a Datastream?

- *A typed sequence of bytes*
- Content can be stored:
 - Locally
 - Inline XML
 - Managed
 - Remotely
 - Externally Referenced
 - Redirected

Each *Datastream* has...

ID

Any XML “NCName” unique within the object

Control Group

“X”, “M”, “E”, or “R” (Inline XML, Managed, Externally Referenced, or Redirected)

State

“A”, “I”, or “D” (Active, Inactive, Deleted)

Versionable

“true” or “false”

Version

1 or more

Each *Datastream Version* has...

Version ID

Any XML “NCName” unique within the object

Created Date

“2007-04-30T19:59:03.000Z” (UTC, ISO8601 format)

Size

An integer (number of bytes)

Checksum

MD5, SHA-1/256/384/512 (Fedora 2.2+)

MIME Type

“type/subtype” (any, registered or not)

Format URI

Any URI

Alternate IDs

Any set of URIs

Label

“Any string”

Content

Any sequence of bytes

A Datastream in FOXML

```
<?xml version="1.0" encoding="UTF-8"?>
<digitalObject xmlns="info:fedora/fedora-system:def/foxml#"
  PID="demo:42">
  <!-- Object properties go here -->
  <datastream ID="DS1"
    CONTROL_GROUP="E"
    STATE="A">

    <datastreamVersion ID="DS1.1"
      CREATED="2007-04-30T20:33:28.832Z"
      MIMETYPE="text/html"
      LABEL="My Label">

      <contentLocation REF="http://example.org/index.html"
        TYPE="URL"/>

    </datastreamVersion>

  </datastream>
  <!-- Disseminators go here -->
</digitalObject>
```

What is a Disseminator?

- *An indirect association of an object to a service that provides disseminations.*
- Association is done by pointing to:
 - *A Behavior Definition* (defines the service interface)
 - *A Behavior Mechanism* (defines the required datastream inputs and points to the service implementation)
- Disseminators provide a list of specific datastreams that meet the input requirements of the service implementation.

Each *Disseminator* has...

ID

Any XML “NCName” unique within the object

BDef Reference

The PID of a *Behavior Definition* object

State

“A”, “I”, or “D” (Active, Inactive, Deleted)

Version

1 or more

Each *Disseminator Version* has...

Version ID

Any XML “NCName” unique within the object

Created Date

“2007-04-30T19:59:03.000Z” (UTC, ISO8601 format)

BMech Reference

The PID of a *Behavior Mechanism* object

Label

“Any string”

Datastream Binding

Maps datastreams in the object to input keys in the behavior mechanism

A Disseminator in FOXML

```
<?xml version="1.0" encoding="UTF-8"?>
<digitalObject xmlns="info:fedora/fedora-system:def/foxml#"
  PID="demo:42">
  <!-- Object properties go here -->
  <!-- Datastreams go here -->
  <disseminator ID="DISS1"
    BDEF_PID="demo:1"
    STATE="A">

    <disseminatorVersion ID="DISS1.1"
      CREATED="2007-04-30T20:33:28.832Z"
      BMECH_PID="demo:2"
      LABEL="My Label">

      <serviceInputMap>
        <datastreamBinding DATASTREAM_ID="DS1"
          KEY="HTML_PAGE"/>
      </serviceInputMap>
    </disseminatorVersion>
  </disseminator>
</digitalObject>
```