

jAPS 2.0 entando - jAPS Model

Do It The jAPS Way

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by Eugenio Santoboni and Roberta Quaresima

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Abstract

This document describes the conceptual model of jAPS 2.0 entando. This guide is recommended for technical and non-users.

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Chapter 1. Scope of the document

Introduction

Describes the conceptual model of jAPS 2.0 entando. This guide is recommended for technical and non-users.

Target audience

This document is for developers.

Resources

Additional informations may be obtained through the official mailing-lists:

- <japs-platform@googlegroups.com>, "japs-platform" Google Group, the jAPS 2.0 entando official Mailing List

Is it also possible to refer to the documentation found in the:

jAPS 2.0 entando Project - Developer Website [<http://dev.japsportal.org/>]

Chapter 2. Introduction

Introduction to jAPS

This document describes the conceptual model and the elements that are the foundations of jAPS 2.0 entando platform:

- Content, Content Models and Categories
- Pages, Pages Tree and Page Models
- Resources
- Showlet
- Links
- Custom Showlet

Chapter 3. Contents

Contents

In jAPS the *content* is a set of information (*Content Attributes*) organized in a structure that define the "Content Type". The contents, as defined below, shall be considered only as pure information, not contain indications of how the information will be displayed.

The information are *multilanguage* or *monolanguage*, depending on information that we consider.

Indications how the contents will be displayed are defined in content models. For each type of content can be defined more content models. Structure and informations are stored in the database in XML format.

Content Type

The *Content Type* groups together all the contents with a similar structure that use the same set of editing operations (in the administration area) and the same content model (in front -end).

An example of content type can be a News, an Article, etc. Each content type is defined, in the system configuration, by set of attributes (id, description, etc.) and by the list of content attributes.

The content types available in the system must be declared and defined in xml in the table `sysconfig`, item `contentTypes`. The structure of the content type is:

```
<contenttypes>
  <contenttype typecode="____" typedescr="____" viewpage="____" listmodel="____" >
    <attributes>
      <attribute name="____" attributetype="____" />
      .....
      <list name="____" attributetype="____" nestedtype="____" />
      .....
    </attributes>
  </contenttype>
  <contenttype ..... >
    .....
  </contenttype>
  .....
</contenttypes>
```

For each Content Type are defined:

- `typecode`: code (which should be 3 alphanumeric characters);
- `typedescr`: description;
- `viewpage`: the code of the page displaying the complete content;
- `listmodel`: code of Content Model displaying the content lists of that type;
- `defaultmodel`: default model;

The two models identified by `listmodel` and `defaultmodel` are the *extremes*, which displays the contents of that type; the `defaultmodel` displays the full content, while `listmodel` displays only the minimum elements to interpret the content within the list.

Example 3.1. Generic Content

```
<contenttypes>
  <contenttype typecode="CNG" typedescr="Generic Content" viewpage="contentview"
    <attributes>
      <attribute name="Title" attributetype="Text" indexingtype="text"/>
      <attribute name="Abstract" attributetype="Longtext" indexingtype="text"/>
      <attribute name="TextBody" attributetype="Hypertext" indexingtype="text"/>
      <attribute name="Image_1" attributetype="Image" />
      <attribute name="Image_2" attributetype="Image" />
      <list name="RelatedLinks" attributetype="Monolist" nestedtype="Link"/>
      <list name="Attachments" attributetype="Monolist" nestedtype="Attach"/>
    </attributes>
  </contenttype>
  <contenttype typecode="NEW" typedescr="News" viewpage="newsview" listmodel="12" />
</contenttypes>
```

Can be configured (without writing new JAVA code) new content types, based on existing attribute types.

Content Attribute

A *Content Attribute* is the basic information which forms the content. Each content attribute is identified, within the content, by a unique name defined during configuration.

For example, the content type `Generic Content` of Portal Example consists of the following content attributes:

- Title: multilanguage text type
- Abstract: multilanguage textarea type
- TextBody: hypertext type
- Image_1: image type
- Image_2: image type
- RelatedLinks: monolist link type
- Attachments: monolist document/attach type

In addition, there are other content attributes (for example, attributes of type `Date`, `Number` etc.) useful to define custom content types.

The attribute content types available in the system are defined in specific system configuration files.

Configuring the content types, the XML that specifies the content attribute must contains the XML attributes `name` and `attributetype`;

```
<attribute|list|table name="ATTRIBUTECODE"
  attributetype="ATTRIBUTECODETYPE" />
```


In addition to these two XML attributes may be present others, characteristic of particular attribute content type (for example attribute of type "Monolist").

It is possible to add a configuration for required fields: `required = "true | false"` (default value: false). During editing, imposition of required configuration involves different effects depending on the attribute type in question.

It is possible to add a configuration for searchable fields: `searcheable="true|false"` (default value: false). Setting "true" the attribute value is replicated in a table where you can search SQL.

This option is used by jAPS, for example, providing a list of contents filtered by attribute values.

Below it is described the configuration of each content attribute types. The Content Attributes are divided into two types: simple attributes and composite attributes.

The Content Attributes are divided into two types: basic (monolanguage and multilanguage) and complex.

Content Model

jAPS has a formatting engine for the contents based on models. The information in the contents must be formatted in different ways. For each contents type are available different models.

The models define how the content will display in the pages of the Portal.

The Content Model is a formatting scheme for a specific content type. For each content type can be defined more content models. The formatting engine receives as input a content and a model, and produces in output a formatted content.

Chapter 4. Pages

Pages

The page in jAPS is like a blank sheet, uniquely defined by its code and title. The pages are related to each other in a hierarchical "tree", with no exceptions.

The pages in jAPS consist of 3 main elements:

- Model
- Property
- Showlet configuration

Page = Model + Property + Showlet Configuration

Page Models

The Page Model defines a characterization for the pages. Within a Portal jAPS You can configure multiple page models. Each page has a single model. The Model is characterized by two elements:

- Scheme: split of the page in area
- Decoration: look and feel of the page

Showlet

jAPS is a system that operates on a centralized set of services through components called showlets. Each showlet provides part of markup that must be incorporated in the final layout. The engine portal contains the logic control and aggregation of showlets and services. The showlets provide the ideal link between services and portal. The showlets are a simplification of portlet.

The Showlet is an object that allows to display informations and functionality (services) on the pages of the Portal. Can be configured a Showlet in each of the areas on the page defined by the associated page model.

Note

Showlets in jAPS are similar to portlet (JSR 168 standard), but are simpler and do not follow standard. Therefore they have a different name.

Showlet = JSP model + Logic + Configuration

Chapter 5. Resources

Resources overview

Resources usually corresponds to information on file, which you can attach to content. Resources can be of different types (eg images, documents, etc.). Each type of resource provides a repository and tools to manage it. A resource, in general, includes several files (eg the same image in different sizes, or a document in several languages) and also support attributes (eg file name, extension, etc.).

A resource is a set of objects on file that form a logical unit. The different files of a resource represent different "instances" or "views" or "versions", for example, different sizes or cuttings of a picture.

The concept of "multiple files for the same resource" is reserved for the following cases:

- the end user is allowed to access a single resource-file per time;
- the context defines which resource-file have be used.

Resources type

- Image: multidimensional image (resource characterized by a number of instances/views composed by the original image and those obtained from resize).
- Attach: word document, pdf, txt or similar (resource characterized by a single instance).

The resource types are defined in XML format on the `sysconfig` table:

Example 5.1. Resource Type Definition

```
<resourcetypes>
  <resourcetype code="Image" folder="cms/images" class="com.agiletec.aps.cms.mo
  <resourcetype code="Attach" folder="cms/documents" class="com.agiletec.aps.cms
</resourcetypes>
```

Example 5.2. XML example of a Image resource:

```
  <resource id="444" typecode="Image">
    <descr>descrizione</descr>
    <categories/>
    <instance>
      <size>0</size>
      <filename>fotografia_0.jpg</filename>
      <mimetype>image/jpeg</mimetype>
      <lenght>2.8Kb</lenght>
    </instance>
    <instance>
      <size>1</size>
      <filename>fotografia_1.jpg</filename>
      <mimetype>image/jpeg</mimetype>
      <lenght>3.8Kb</lenght>
    </instance>
  </resource>
```

Example 5.3. XML example of a Document resource:

```
<resource id="448" typecode="Attach">
  <descr>descrizione</descr>
  <categories/>
  <instance>
    <size>0</size>
    <filename>schema.pdf</filename>
    <mimetype>application/pdf</mimetype>
    <lenght>440 Kb</lenght>
  </instance>
</resource>
```

Chapter 6. Categorie

Categorie

With categories you can classify arbitrarily informations; this classification is useful to present aggregates of informations to the final users.

A Category is a label that can be assigned to the informations so to satisfy the need to aggregate them regardless of the type in a flexible manner.

Each category has a code and a title that can be specified for every language configured in the system

Every Category is inserted in a hierarchical structure organised in a tree, namely *Categorie Tree*. It's possible to create other categories and branches of nested Categories.

The ability to group together similar informations by argument, makes possible to enlarge the concept of archive by creating sets of selected informations.

Categorised Contents

Ai Contenti possono essere applicate le Categorie per la realizzazione di speciali raggruppamenti. Category are normally applied to Contents so to create special sets.

The most common use of the categories is to prepare Contents for automatic publishing: the Contents are automatically grouped by category and then shown in the portal pages.

A real use case is represented by a portal page that presents to the users all the Contents whose topic is "Sport". First a category "Sport" must be created if not available in the category tree; then you must associate the category to the target Contents. Finally you have to publish the Showlet configured to show all the contents whose topic is "Sport". The list is automatically refreshed whenever a new Content is labeled with the "Sport" category.

Categorised Resources

In the same manner Resources can be grouped with the Categories

This is handy when the number of Resources grow (and so the Categories Tree): in the Resource archive is possible make searches by categories to restrict the number of the results found.

Chapter 7. User management

System permissions

The access to informations and the ability to use services and perform operations are mediated by the `Permissions`, the `Roles` and the `Groups` associated to the current user.

Users

A `User` in jAPS represents an entity which has the ability to perform operations and to access to the informations.

The action allowed to a certain user is given by the combination of the `Roles` and `Groups`.

Permissions

A `Permission` represents the authorisation to perform a certain action in the portal.

jAPS has a number of built-in permissions that restrict the access to the CMS functions: **Content Editing** e **Supervision of Contents**, **Operations on Pages**, **Operations on Resources** e **Operations on Categories** related to the management of informations.

There are also a more generic `Permissions` like **Access to Administration Area** that affects the entire system; one of them, **All functions**, grants access to all the system services.

Note

It's important to understand that `Permission` are **not** arranged hierarchically. They only express the ability to perform a certain action.

Each `Permission` may appear in several `Roles` and new ones can be further added when the system grows with its functionalities.

Single `Permissions` cannot be directly assigned to the users, but must be grouped in a `Role`.

Roles

A `Role` is a set of `Permissions`. You can associate several `Roles` to a `User` using the CMS administration interface.

Mixing together `Permissions` and `Roles` it is possible to finely tune the accesses and the interaction of the users with services and informations.

Like for `Permissions`, the `Roles` are mutually independent and cannot be hierarchically arranged.

Groups

A **Group** is a container of `Users`.

`Groups` are used to restrict or grant the access to informations and services independently of the `Roles` of the single `Users`.

`Users` may belong to several `Groups`; the access to the functionalities is performed on `Group` basis.

`Groups` play a prominent role in the Content Redaction and in the `Pages Tree`. For more informations consult Chapter 3, *Contents* and Chapter 4, *Pages*.

Chapter 8. Plugin

Plugin

A jAPS-Plugin is a module that adds new functionalities to jAPS. The *application services* are implemented as Plugins.

A Plugin can be classified as:

- PurePlugin
- Modification

Several Plugins may be installed in jAPS; the way they interact is explained in the “jAPS 2.0 entando - Pattern for application services creation and integration”.

The Plugins allow to faster develop new functionalities of the system; furthermore they are integrated seamlessly with the underlying system.

PurePlugin

The plugin introducing new functionalities without affecting in any manner the existing core functionalities are said to be `PurePlugin`.

Modification

The Plugins that extend or modify the existing core functionalities are defined `Modification`

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