

The Alkacon logo is a blue oval with a white border containing the word "Alkacon" in white serif font. It is positioned on a black horizontal bar at the top of the slide.

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Advanced features of OpenCms 7

Alkacon Software GmbH
August, 2007



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- Creating OpenCms templates with taglibs
- Using and configuring the integrated full text search engine
- Managing multilingual websites
- Defining structured content using XML schema
- Integrating "Direct Edit" functionality



OpenCms 7 technical overview

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- OpenCms has a strict 3-tier architecture
 - Workplace / Website front-end
 - OpenCms Core “middleware” logic
 - Database access layer separated in “drivers”
- Shell access to the OpenCms database if no web GUI is available
- Module API for pluggable extensions
- Content in OpenCms is stored in XML structures
- Flexible, file based data repository (VFS)
- Data repository accessible with WebDAV protocol



OpenCms 7 technical overview (2)

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- OpenCms leverages the power of many proven OSS components
 - Lucene (search engine)
 - Dom4J (XML API)
 - JTidy (HTML parser)
 - Doomdark JUG (UID Generator)
 - Log4j (Log file handler)
 - Digester (XML Configuration reader)
 - Commons DBCP/Pool (DB Connection)
 - Quartz (Scheduler)
 - Junit (Unit testing)
 - ...



Creating OpenCms templates with taglibs

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- OpenCms Templates are simple JSP pages
 - Taglib for accessing OpenCms functions
 - Can be combined with other taglibs (e.g. JSTL)
 - All taglib functions are also available in scriptlet API
- Templates are simple resources in the OpenCms VFS, this means they
 - are version controlled
 - are workflow enabled (online / offline)
 - can be distributed in modules



Creating OpenCms templates with taglibs (2)

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- Templates can have multiple sub-elements, for example:
 - Navigation element
 - Ad banner element
 - Article list element
- A template usually formats / displays the content of one `xmlpage/xmlcontent`
 - However, content can also be used on multiple locations
- The same templates can also be used to format the output of other JSP pages



Creating OpenCms templates with taglibs (3)



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Simple template example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

```
<html>
```

```
<head>
```

```
<title>
```

```
OpenCms - <cms:property name="Title" escapeHtml="true" />
```

```
</title>
```

```
</head>
```

```
<body>
```

```
<cms:include element="body" />
```

```
</body>
```

```
</html>
```



Demo Screenshot: A sample template



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A sample template - Mozilla Firefox

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

A sample template

START PAGE ALKACON SOFTWARE GMBH OPENCMS.ORG REFERENCE SITES SOLUTION PROVIDERS Search

HEAD

HOME | TEMPLATEONE DEMO PAGES | MODULES DEMO PAGES | XML CONTENT DEMO | RELEASE NOTES

- List demo
- Scriptlet list demo
- Tree Read Demo
- Sub tree folder
- cms:include Test
- Nested XML Content
- Widget Demo
- Side Element Demo
- Template Demo**

LEFT NAVIGATION

Editable Page Elements

LOREM IPSUM ELEMENT 1

This content element is shown in row 1 column 1 in classic layout. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum.

LOREM IPSUM ELEMENT 2

This content element is shown in row 1 column 2 in classic layout. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum.

LOREM IPSUM ELEMENT 3

This content element is shown in row 2 column 1 in classic layout. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum.

LOREM IPSUM ELEMENT 4

This content element is shown in row 2 column 2 in classic layout. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum.

FOOT Accessible Version Imprint

Fertig



Using and configuring the full text search engine

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- OpenCms integrates the powerful Lucene full text search engine
- Creation of multiple indices is supported
 - Example: One index per language
- Included are extractors for various commonly used document types
 - E.g. Word, Excel, PDF, XML, TXT, HTML...
- All searched content is also permission controlled, i.e. users will only see the results when they are allowed to “read”



Using and configuring the full text search engine (2)

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- Configuration is done in OpenCms Administration view or the file `opencms-search.xml`
- Full control over the output layout, default layout shows a Google-like ranking with highlighted search terms
 - Highlight function can also be configured
- Also searches in properties (meta information)
- Indexed fields (contents, properties) can be configured according to special needs
- Restricted searches to subtrees of the VFS possible
 - E.g. for “search only in this department”



Demo Screenshot: Full text search output



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XML content article demo page - Mozilla Firefox

http://localhost:8080/opencms/opencms/system/modules/org.opencms.frontend.templateone/pages/seal

START PAGE ALKACON SOFTWARE GMBH OPENCMS.ORG REFERENCE SITES SOLUTION PROVIDERS Search

OpenCms Alkacon

HOME | TEMPLATEONE DEMO PAGES | MODULES DEMO PAGES | XML CONTENT DEMO | RELEASE NOTES

- List demo
 - Scriptlet list demo
 - Tree Read Demo
 - Sub tree folder
 - cms:include Test
 - Nested XML Content
 - Widget Demo
 - Side Element Demo

Search in area OpenCms Xml Content Demo

opencms +xml Search

Search the entire website

[New features of this release](#) (100%)
XML content Highlights Among the many uses for the **OpenCms 7.0 XML** content are: Automatic editor generation with multiple widgets. Check out the [Widget Demo](#) to see all available widgets in action. It's possible to "nest" **OpenCms XML** content, i.e. one XML content definition can include another. See the [Nested XML Content](#) example. XML content can be used for RAD in **OpenCms**. See the [Email Form Editor](#) example. **OpenCms XML** contents are defined by a W3C XML schema that can contain additional
7/9/07 12:05 PM

[Page using a sample side element](#) (50%)
of editable XML content elements on the right side Using XML content, you are able to quickly create ... is fairly easy and requires only a little **OpenCms** template programming knowledge. Using the templates
7/9/07 12:05 PM

[Demonstrates all available widgets](#) (50%)
Option 2 This is a demo for a text area to allow longer string inputs. A combobox value This content has only a demo purpose. Open the editor to see all the XML widgets currently available in a default **OpenCms** installation. Please note: Not all of the XML content values you can enter in the editor are actually displayed in this list view. /sites/default/modulesdemo/moduleimages/weisswurst.gif This is a

XML content Highlights

Among the many uses for the OpenCms 7.0 XML content are:

Automatic editor generation with multiple widgets. Check out the [Widget Demo](#) to see all available widgets in action.

It's possible to "nest" OpenCms XML content, i.e. one XML content definition can include another. See the [Nested XML Content](#) example.

XML content can be used for RAD in OpenCms. See the

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Managing multilingual websites

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- OpenCms 7 editable content is mainly composed of two types
 - xmlpage (unstructured, WYSIWYG content)
 - xmlcontent (structured with XML schema)
- Both types have a common XML structure to allow the creation of content in multiple languages
- The selected language is controlled by the configured *locale handler*
 - default: configure locale property on folder
 - alternative: use browser locale



Managing multilingual websites (2)

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Sample XML Page structure:

```
<?xml version="1.0" encoding="UTF-8"?>

<pages
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation=
    "http://www.opencms.org/dtd/6.0/xmlpage.xsd">
  <page language="de">
    <element name="text1">
      <links/>
      <content><![CDATA[<H1>Dieser Text ist in Deutsch</H1>]]></content>
    </element>
  </page>
  <page language="en">
    <element name="text1">
      <links/>
      <content><![CDATA[<H1>This text is in English</H1>]]></content>
    </element>
  </page>
</pages>
```



Managing multilingual websites (3)

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Sample XML Content structure:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<Articles
```

```
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="
    "opencms://sites/default/xmlcontent/article.xsd">
```

```
  <Article language="en">
```

```
    <Title><![CDATA[Sample Article 1]]></Title>
```

```
    <Teaser><![CDATA[This is the first sample article.]]></Teaser>
```

```
    <Text name="element0">
```

```
      <links/>
```

```
      <content><![CDATA[<p>This is the article 1 text</p>content]>
```

```
    </Text>
```

```
  </Article>
```

```
</Articles>
```



Managing multilingual websites (4)

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- Content in OpenCms can be created in any charset encoding supported by Java
 - UTF-8 is the default since version 6
- Different encodings can be mixed in one installation
 - One page could be using ISO-8859-1 while the others on the site use UTF-8
- The WYSIWYG editor supports automatic conversion of “unknown” characters to HTML entities (and vice-versa)
 - E.g. `€` for “€” symbol in ISO-8859-1



Defining structured content using XML schema

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- XML content is one of the most powerful features of OpenCms
- This allows simple creation of “Structured content” according to a W3C XML schema
 - The XML schema used must itself follow another XML schema for XML contents
- The XML schema used is also managed in the OpenCms VFS
- An editor for the XML content is automatically created using the XML schema



Defining structured content using XML schema (2)

Sample XML Content schema:

```
<?xml version="1.0" encoding="UTF-8"?>

<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">

  <xsd:include schemaLocation="opencms://opencms-xmlcontent.xsd"/>

  <xsd:element name="Articles" type="OpenCmsArticles"/>
  <xsd:complexType name="OpenCmsArticles">
    <xsd:sequence>
      <xsd:element name="Article" type="OpenCmsArticle" minOccurs="0" maxOccurs="unbounded"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:complexType name="OpenCmsArticle">
    <xsd:sequence>
      <xsd:element name="Title" type="OpenCmsString" />
      <xsd:element name="Teaser" type="OpenCmsString" />
      <xsd:element name="Text" type="OpenCmsHtml" />
    </xsd:sequence>
    <xsd:attribute name="language" type="OpenCmsLocale" use="required"/>
  </xsd:complexType>
  <xsd:annotation>
    <xsd:appinfo>
      <mapping element="Title" mapto="property:Title" />
    </xsd:appinfo>
  </xsd:annotation>
</xsd:schema>
```



Defining structured content using XML schema (3)

Sample XML Content structure:

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<Articles
```

```
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="
    "opencms://sites/default/xmlcontent/article.xsd">
```

```
  <Article language="en">
```

```
    <Title><![CDATA[Sample Article 1]]></Title>
```

```
    <Teaser><![CDATA[This is the first sample article.]]></Teaser>
```

```
    <Text name="element0">
```

```
      <links/>
```

```
      <content><![CDATA[<p>This is the article 1 text</p>content]>
```

```
    </Text>
```

```
  </Article>
```

```
</Articles>
```



Defining structured content using XML schema (4)

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- XML content can also be mapped to corresponding VFS properties or attributes
 - E.g. “Title” field to “Title” property
- Some XML content types are predefined in OpenCms
 - news articles, events, job offerings and more are shipped with the OpenCms distribution
 - Predefined content types can be extended through an open API / configuration
- A taglib API is available to access XML content in lists, detail pages etc.



Defining structured content using XML schema (5)

Sample XML Content list page:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms" %>  
<cms:include property="template" element="head" />
```

```
<cms:contentload collector="allInFolder"  
  param="/article_${number}.html|article">
```

```
<div class="element2">  
<b><cms:contentshow element="Title" /></b><br>  
<cms:contentshow element="Teaser" /><br>  
<small><a href="<cms:link><cms:contentshow  
  element="<cms:filename>" /></cms:link>">read  
  more...</a></small>  
</div>
```

```
</cms:contentload>
```

```
<cms:include property="template" element="head" />
```



Demo Screenshot: Structured content in XML Schema

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The screenshot shows the OpenCMS administration interface in a Mozilla Firefox browser window. The URL is `http://localhost:8080 - (Admin) - Editing /modulesdemo/modules/news/news_0005.html`. The interface is in English. The form contains the following fields:

- Title:** Leberwurst causes addiction
- Additional title:** (Click on the "New" button on the right side to activate this element)
- Author:** Alkacon Software GmbH
- Author Email:** (Click on the "New" button on the right side to activate this element)
- Teaser:** Alarming test results from Wurst institute published
- Text:** The famous Wurst institute of Steaktown, Germany, published the recent results of Leberwurst causing customer addictions. Dr. Phil Salami states: "Eating only one bread of Leberwurst causes permanent addiction, driving the people to eat at least 2839 grams of Leberwurst each day." A cure for this new type of addiction has not been discovered yet, so it is recommended to avoid eating Leberwurst at the moment.
- Priority:** (Click on the "New" button on the right side to activate this element)
- Creation date:** 4/25/2007 1:34 PM
- Release date:** (Click on the "New" button on the right side to activate this element)
- Expiration date:** (Click on the "New" button on the right side to activate this element)
- Contact:** (Click on the "New" button on the right side to activate this element)
- Image:** Image URI: `/modulesdemo/moduleimages/leberwurst.gif`; Description: Leberwurst
- attachment:** (Click on the "New" button on the right side to activate this element)

At the bottom of the page, a status message reads: "User (Admin) logged in at 7/10/07 9:17 AM from 0:0:0:0:0:0:1". A JavaScript call `javascript:addElement('AuthorMail', 0)` is visible in the footer.



Integrating "Direct Edit" functionality

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- "Direct edit" allows for access to the editor through the website "front end"
- All access is permission/lock controlled
 - No access if no "write" permission
 - Access disabled if file is currently locked
- "Direct edit" is available only in the Offline project, not on the published Online site
- Integration is very simple with just some additional tags
 - HTML inserted can optionally be selected



Integrating "Direct Edit" functionality (2)

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"Direct edit" for a template example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

```
<html>
```

```
<head>
```

```
<title>
```

```
OpenCms - <cms:property name="Title" escapeHtml="true" />
```

```
</title>
```

```
<cms:editable />
```

```
</head>
```

```
<body>
```

```
<cms:include element="body" editable="true" />
```

```
</body>
```

```
</html>
```



Demo Screenshot: Direct edit from the website



Integrating "Direct Edit" functionality (3)

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"Direct edit" on a XML content example:

```
<%@ taglib prefix="cms" uri="http://www.opencms.org/taglib/cms"%>
```

...

```
<cms:contentload collector="singleFile" param="{opencms.uri}"  
    editable="true">
```

```
<h1><cms:contentshow element="Title" /></h1>
```

```
<p>
```

```
<cms:contentshow element="Text" />
```

```
</p>
```

```
</cms:contentload>
```

...



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