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## Advanced features of OpenCms 6

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



# OpenCms 6 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 is stored in XML structures
- Flexible, file based data repository (VFS)



# OpenCms 6 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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ALKACON SOFTWARE OPENCMS.ORG REFERENCE SITES SOLUTION PROVIDERS  Search

HOME | TEMPLATE ONE DEMO | RELEASE NOTES

- Template One - Start
  - Template One demo
  - Welcome to OpenCms
  - Release Notes

**LEFT NAVIGATION**

**HEAD**

**Editable page elements**

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**Lorem ipsum row 2 column 1**

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**Lorem ipsum row 2 column 2**

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**FOOT**

Help Accessible Version Imprint



# 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 where they are allowed to “read”



# Using and configuring the full text search engine (2)

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- Configuration is done in 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)
- 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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Search demonstration - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

ALKACON SOFTWARE OPENCMS.ORG REFERENCE SITES SOLUTION PROVIDERS  Search

HOME | SEARCH DEMONSTRATION | COLOR VARIATION

- Element demo
- Standard page
- Search demonstration**
- Color variation

Search in area Template One demo pages

Search the entire website

**OpenCms 6 alpha (100%)**  
**OpenCms** 6.0 alpha 1 released Alkacon Software has finished work first public binary alpha release **OpenCms** 6.0.. **OpenCms** 6.0 major upgrade vastly expands features.. **OpenCms** 5.0 Who should use 6.0 alpha 1 version alpha.. version Please don't expect perfectly stable One most important.. Open Source philosophies Release early Release often what  
9/24/04 4:11 PM

**Alkacon OpenCms 5 presentation (97%)**  
introduction **OpenCms** version 5.0 Alexander Kandzior Alkacon Soft ware May 2003 Agenda Overview Hard Software requirements.. System demonstration Roadmap **OpenCms** overview **OpenCms**.. Source March 2000 **OpenCms** 5.0 version released May.. 2003 **OpenCms** 5.0 has undergone extensive 6 month testing.. period **OpenCms** Open Source Software published under  
9/24/04 5:40 PM

**OpenCms technote (PDF) (96%)**  
**OpenCms** Workplace structure Date created Monday 16.. August 2004 Version 1.0 Concept **OpenCms** Workplace structure.. 6 Alkacon Software Page 2 Concept **OpenCms**.. Document Title Concept Concept **OpenCms** Workplace.. workplace structure **OpenCms** 5.3.x describes VFS structure  
9/24/04 5:40 PM

**OpenCms technote (Word) (95%)**  
Alkacon Software Concept **OpenCms** Workplace structure Date created Monday 16 August 2004 Version 1.0 1 Document Information.. Concept **OpenCms** Workplace structure Filename TN\_0027\_OpenCms.. describes general concept workplace structure **OpenCms** 5.3.x describes VFS structure.. All files

Done



# Managing multilingual websites

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- OpenCms 6 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 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)

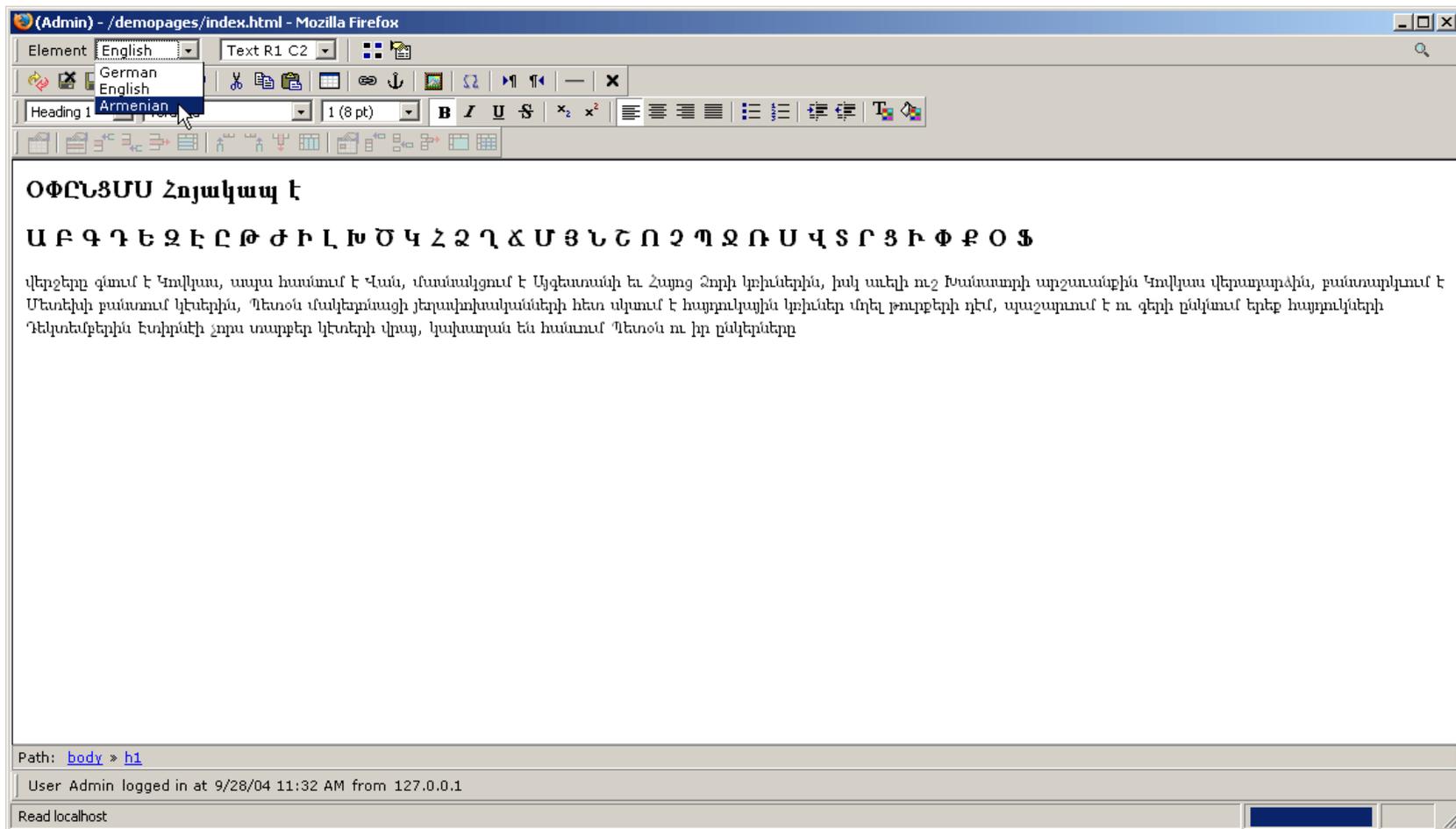
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- Content in OpenCms can be created in any charset encoding supported by Java
  - UTF-8 is the default in version 6
- Different encodings can be mixed in one installation
  - One page could be using ISO-8859-1 while the others on the site use UTF-8
- The WYSIWYG editor supports automatic conversion of “unknown” chars to HTML entities (and vice-versa)
  - E.g. `&#8364;` for “€” symbol in ISO-8859-1



# Demo Screenshot: Multilingual editing in UTF-8

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# Defining structured content using XML schema

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- XML content is one of the most powerful features of OpenCms 6
- This allows simple creation of “Structured content” according to a w3c XML schema
  - The XML schema used must itself follow another XML schema for xmlcontents
- The XML schema used is also managed in the OpenCms VFS
- An editor for the xmlcontent is automatically created using the 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)

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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>
```



# 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
  - Work currently in progress
  - 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)

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## 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>
```

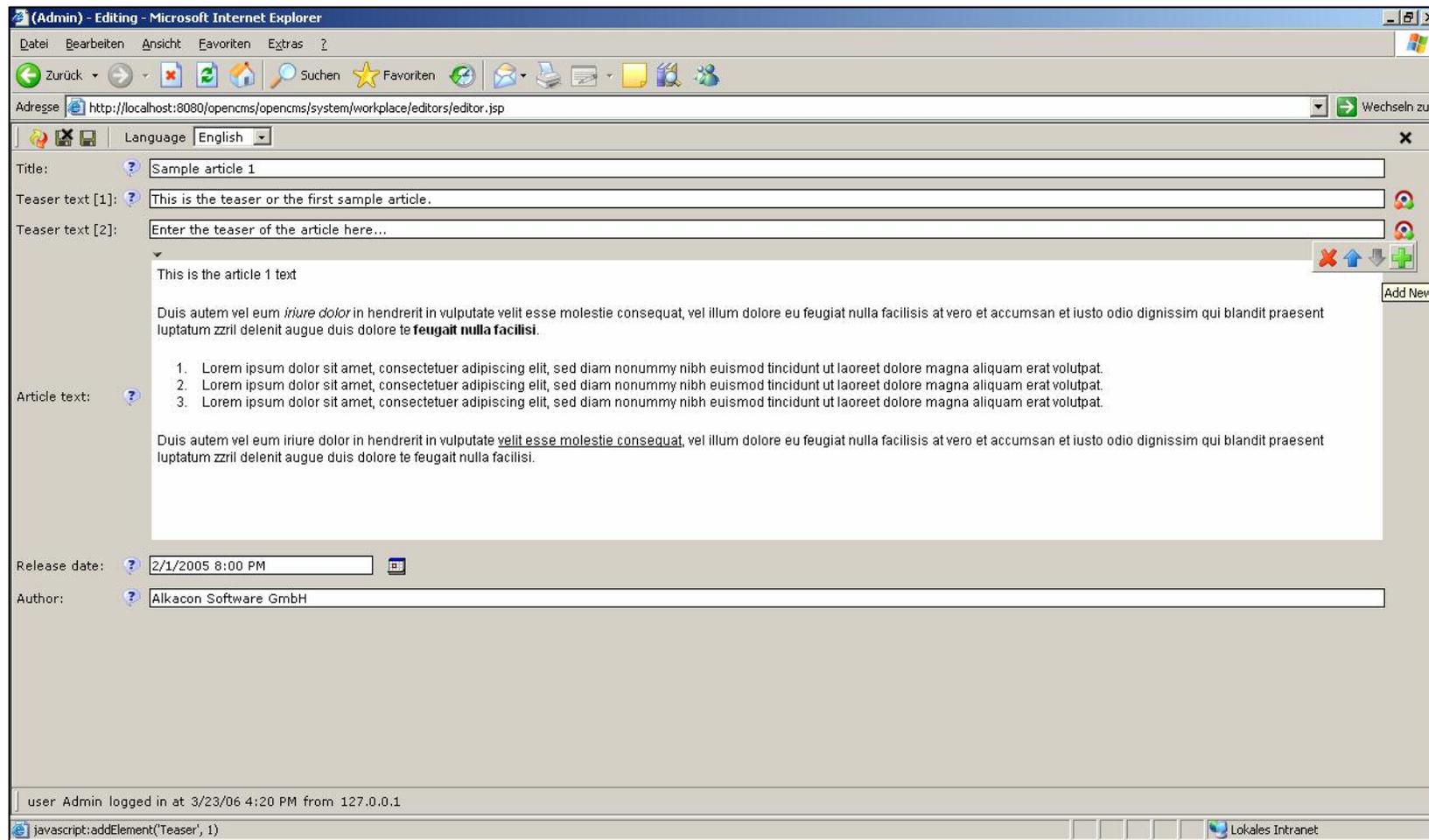
```
</cms:contentload>
```

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



# Demo Screenshot: Structured content in XML Schema

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(Admin) - Editing - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Zurück Suchen Favoriten Wechseln zu

Adresse http://localhost:8080/opencms/opencms/system/workplace/editors/editor.jsp

Language English

Title: Sample article 1

Teaser text [1]: This is the teaser or the first sample article.

Teaser text [2]: Enter the teaser of the article here...

Article text: This is the article 1 text

Duis autem vel eum *iriure dolor* in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te **feugait nulla facilisi**.

1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.
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3. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

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Release date: 2/1/2005 8:00 PM

Author: Alkacon Software GmbH

user Admin logged in at 3/23/06 4:20 PM from 127.0.0.1

javascript:addElement('Teaser', 1)

Lokales Intranet



# 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)

Alkacon

## "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



Alkacon

Templateone Start - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Zurück Suchen Favoriten Wechseln zu

Adresse http://localhost:8080/opencms-dev/opencms/demopages/

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

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

Templateone configuration  
Element demo  
Search demonstration  
Multilanguage demo  
Contact form  
UTF-8 demo  
Reduced menu page  
Demo Photo album

### Welcome to the OpenCms 6.0 "templateone" demo

This page (and all other pages using this layout) are made using the "templateone" template. This is a full featured OpenCms 6.0 template with additional functions like full text search and automatic navigation building. This template is intended to demonstrate the OpenCms 6.0 capabilities as well as serve as an extended example base to create own template variations.

**Please note:** This template has been developed in a "real life" project. It should provide a usable "out-of-the-box" template in case you do not want to invest time to create an individual OpenCms template yourself. But this template is not suitable for beginners to learn basic OpenCms template development, it has a complex structure due to the advanced functions. To learn how to develop simple JSP templates from scratch, you should have a look at the "Welcome / Release notes template".

Feedback to the functionality of this template is most welcome.

### Features of "templateone"

- Multiple template elements with "direct edit"
- Integrated full text search
- Highly configurable template using properties
- Easily exchange colors, images and other template formatting
- Build in print version
- Build in accessible or classic version
- "Contact author of article" function
- "Recommend page" function
- more...

### OpenCms 6.0 now features support for the XmlContent resource type

Using XML content, you can easily create "structured" content that uses a specified w3c XML schema. This powerful feature can be used to easily create news tickers, product information, job descriptions etc.

Please check the [XML content demo pages](#) for more information (needs to be installed as a separate module).

http://localhost:8080/opencms-dev/opencms/demopages/# Lokales Intranet



# 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>
```

...



# Alkacon OpenCms Contacts

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