

# Building Accessible Web Sites with Oracle Portal

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# Building Accessible Web Sites with Oracle Portal

**Approximately 500 million people worldwide have some type of disability.**

## 1. INTRODUCTION

As more and more services, both general and governmental, are provided over the World Wide Web, it is increasingly important for websites to be accessible to persons with disabilities. According to estimates, around 5 - 10% of Europeans (about 37 million people) are classified as disabled. Approximately 54 million Americans and 500 million worldwide have some type of disability. The types of disabilities that can limit access to websites spans the entire range of visual, acoustic, physical, speech, cognitive and neurological impairments, and a good understanding of the barriers to information access that each kind of disability poses is vital. The growing proportion of older people in the general population is also an important consideration.

Oracle is committed to making products that are accessible to persons with disabilities. To this end, Oracle has established the Oracle Accessibility Program (OAP) as an integral part of its product development process. It has created tools to check the accessibility of HTML code. It also makes the status reports on the accessibility of its products publicly available.

This document aims to further Oracle's commitment to accessibility by providing guidelines for web site operators when designing accessible web pages using one of Oracle's latest products – Oracle Application Server Portal 10g Release 2 (10.1.4) (Oracle Portal). This document provides a reference guide to international and U.S. standards for accessible web design, as well as recommended practices for structuring content on web pages built with Oracle Portal.

## **2. INTERNATIONAL AND U.S. GUIDELINES ON ACCESSIBILITY**

### **2.1 W3C Guidelines**

The World Wide Web Consortium (W3C) is an umbrella organization that monitors standardization of web technologies. Standardized technologies (specifications, guidelines, software and tools) were developed to support the future development of the World Wide Web and secure its interoperability.

#### **2.1.1 WAI**

WAI stands for Web Accessibility Initiative. In conjunction with organizations throughout the world, this initiative addresses barrier-free web access in 5 main areas:

- Technology
  - Protocols and formats
- Guidelines
  - Layout of accessible web pages  
(Web Content Accessibility Guidelines (WCAG))
  - Design of software for creating accessible web sites  
(Authoring Tool Accessibility Guidelines (ATAG))
  - Accessible browsers and authoring tools  
(User Agent Accessibility Guidelines (UAAG))
  - Design of accessible XML applications  
(XML Accessibility Guidelines (XAG))
- Tools
  - Initial development of technologies for reviewing and correcting content
  - Maintaining a reference list of tools for reviewing and correcting content
  - Developing a verification and reporting language (e.g. EARL, Evaluation and Report Language)
  - Automatic and manual verification of sources
- Training
- Research and development

The WAI includes an explicit definition of what 'barrier-free access to the web' means, namely:

- **Web sites and applications that**
  - People with disabilities can recognize, understand, browse through and interact with
- **Web browsers and media players that**
  - Can be used effectively by people with disabilities
  - Interact well with supporting technologies that certain people with disabilities use to access the web
- **Editing tools and web technologies that**
  - Facilitate the development of accessible web content and web sites
  - Can be used effectively by people with disabilities

Many governments and industrial companies support WAI. In addition, many partners (including Oracle) are working with WAI on specific sub-projects.

### **2.1.2 WCAG**

WCAG stands for Web Content Accessibility Guidelines and describes the coding and structuring of accessible web content in the context of WAI. The following aids are available.

- WCAG 1.0 Checklist
- WCAG 1.0 Technologies
- WCAG 1.0 Frequently Asked Questions (FAQ)
- WCAG 1.0 Conformity Logos
- WCAG 1.0 Translations
- WCAG 1.0 Fact Sheet
- WCAG 1.0 Curriculum
- Quick Tips for accessible web sites
- Accessibility verification of web sites
- Resources for planning the implementation of web accessibility
- Resource for planning training in web accessibility

Version 1.0 of the WCAG was approved for W3C recommendation on 5 May 1999 and contains a priority list for normative test points. Version 2.0 is currently under development.

The WCAG 1.0 priorities for accessibility test points are marked as necessary, recommended and optional.

### WCAG 1.0 Priorities

Priority A Under the WCAG, a web content developer **must** comply with these test points. Satisfaction of Priority A test points are a basic requirement for some groups to be able to use web documents. One or more groups would find it impossible to access the information in the document, if these checkpoints were not met.

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Priority AA A web content developer **should** comply with these test points. Otherwise, it will be difficult for certain people or groups to access the content of documents. Satisfying these test points would eliminate significant barriers to accessing web documents.

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Priority AAA A web content developer **can** address this test point. It would be somewhat difficult for certain people or groups to gain access to the document content without satisfying these test points. Fulfillment of this criterion improves access to the web document.

The individual test points are contained in a checklist and provide a structured description of the relevant technological aspects of designing HTML pages. This checklist is often used to evaluate web sites. Corresponding accessibility checkers are often used to analyze compliance of the pages in question with the WCAG priorities and output reports that highlight any differences from the checklist.

## 2.2 US Guidelines and Laws

### 2.2.1 ADA

ADA stands for the Americans with Disabilities Act. The ADA is a general antidiscrimination law that protects people with disabilities in a variety of contexts, such as employment, and equal access to commercial facilities and public transport. The extent to which the ADA applies to commercial websites is uncertain. The ADA does not, however, prescribe specific accessibility standards for IT products.

### 2.2.2 Section 508

Specific accessibility standards have been established under Section 508 of the U.S. 'Rehabilitation Act of 1998'. While these standards apply only to product purchased by the U.S. government, they are widely recognized and provide good guidance on web accessibility outside the government procurement context. The

section 508 standards cover not just web accessibility, but also a wide range of other information technology products.

The following sections from Section 508 are relevant to Oracle products:

1194.21 – Software Applications and Operating Systems

1194.22 – Web-based Intranet and Information Applications

1194.23 – Telecommunication Products

1194.24 – Video and Multi-media Products

1194.25 – Self-contained, Closed Products

1194.26 – Desktop and Portable Computers

1194.31 – Functional Performance Criteria

1194.41 – Information, Documentation and Support

Regulation 1194.22 contains specific formatting guidelines for HTML pages and is of primary importance for ensuring that web pages produced by Oracle Portal meet the requirements of Section 508. The standards in this regulation overlap with but are not identical to, the WCAG 1.0 guidelines.

### **2.3 European Guidelines**

In a communication from the European Commission (EC) to the Council of the European Union (EU), the European Parliament, the Economic and Social Committee and the Committee of Regions – eEurope 2002 dated 29 May 2001– the European Union acknowledges the importance of Internet access for disabled citizens. In the communication, the EC urged EU member states to adopt the WAI guidelines (see 2.1) to ensure accessibility of public sector websites. In addition, the statement from the EC outlines the status of development in each member state. The communications demonstrates the increasing importance and attention assigned to accessibility in Europe.

### 3. ORACLE ACCESSIBILITY PROGRAM

Oracle switched its product strategy entirely over to Internet computing several years ago. For this reason, particular attention is paid to the subject of accessibility when developing new products and solutions. The ‘Oracle Accessibility Program’ (OAP) was created as a result. Oracle has built a ‘Competence Center for Accessibility’ as part of this program. Staff experienced with accessibility are also found in each of the Product Management teams and contribute relevant aspects to the development of accessible Oracle solutions and products.

As part of the OAP, status reports on the accessibility of Oracle products and solutions are published voluntarily (see ‘Voluntary Product Accessibility Templates’ menu option at <http://www.oracle.com/accessibility/index.html>).

In addition to the voluntary publication of the accessibility status of a given product, Oracle has developed its own HTML Accessibility Guidelines that are verified by the ‘Oracle Accessibility Checker’ created for that purpose.

#### 3.1 Oracle Global HTML Accessibility Guidelines (OGHAG)

The Oracle Global HTML Accessibility Guidelines (OGHAG) are an internal set of guidelines used to assess the accessibility of Oracle products and solutions. OGHAG is a compilation of checkpoints from WCAG 1.0 and US Section 508 that are relevant to Oracle products.

#### 3.2 Oracle Accessibility Checker (OAC)

The Oracle Accessibility Checker is a web application that checks web interfaces for adherence to OGHAG. It encompasses both WCAG 1.0 Priority AA checkpoints and US Section 508 HTML standards, and is used to assess the accessibility of web applications.

OAC includes several methods for analyzing web sites:

- **Analyzer:** permits rapid verification of individual HTML pages.



- **Crawler:** permits analysis of a web site by specifying the depth and scope of documents to be verified.





- **Zip/Jar:** permits the verification of large sets of HTML files, e.g. online help files for an application that have been compressed and archived as a zip and can be retrieved via a web server.



- **Proxy Run:** helps in verifying dynamically generated web sites or applications. This permits step-by-step processing of the application in one browser with the results displayed in a separate browser or alternatively inline on the page currently being analyzed.

The Oracle Accessibility Checker provides complete test reports specifying the

- Instances in which OGHAG has not been followed
- Specific code line for each such instance
- Proposals for corrective measures



The Oracle Accessibility Checker is not yet freely available as a downloadable application.

## **4. DEVELOPMENT OF ACCESSIBLE PORTAL INSTANCES WITH ORACLE PORTAL**

### **4.1 Preliminary Remarks**

These guidelines for designing accessible portal instances regulate the use of Oracle Application Server Portal 10g to develop web site portal solutions.

These guidelines are based on the standard features of Oracle Portal. They are presented from an application-wide perspective and drill down to individual features.

Note: this document is intended as an addition to project development guidelines, not a replacement. For this reason, all possible guidelines are not reproduced here in full. This document needs to be reviewed to determine necessary additions to an existing project's guidelines depending on the planned approach. The guidelines here currently relate to Oracle Application Server Portal 10g Release 2 (10.1.4).

**Approaches detailed apply to Oracle Application Server Portal 10g Release 2 (10.1.4) and encompass the guidelines of US Section 508 and WCAG.**

#### **4.1.1 Target Group**

This document is targeted at developers of portal solutions with accessibility requirements. To a certain extent, the document can also be used to plan the use of Oracle Portal for specific projects.

#### **4.1.2 Other Applicable Documents**

US Section 508 – Section 508 of the Rehabilitation Act (USA) and the regulations issued under that law (codified at 36 C.F.R. Part 1194).

WCAG – Web Content Accessibility Guidelines 2.0 (W3C Working Draft 19 November 2004). The WCAG has numerous supplementary documents that regulate the use of certain technologies in the context of accessibility.

### **4.2 Introduction**

In addition to the principles for structuring Internet sites, Oracle Portal provides relevant features to assist with planning designs and developing editorial content.

### **4.3 General Guidelines**

The following guidelines relate to the general aspects of web sites and their content. They are independent of Oracle Portal used in development or at runtime. All points outlined here require some substantiation through specific tests.

#### **4.3.1 Concepts**

Keep it simple. This approach should be followed where possible in building accessible solutions for persons with disabilities.

Accessibility is a property that should be expressly tested for on a regular basis possibly with automated testing tools. Various other requirements are closely linked with the actual requirements for accessibility:

- The most open, current standard technologies possible should be used without the user having to resort to special technological tools to understand the content.
- Technologies must be used in the way they were intended and designed, and not for another purpose.
- The HTML code must satisfy the strictest requirements, including, if possible XHTML. This should be verified regularly using validation programs.
- The application must also be operable and comprehensible using auxiliary assistive technologies (alternative input devices, screen readers etc.). Operation must not be restricted to specific input and output devices.

#### **4.3.2 Layout and Navigation**

The graphical and structural design of Internet sites also influences their transparency and comprehensibility. The design and navigation therefore has to be easily understood and consistently uniform.

- Users must be provided with information for context and orientation.
- The chosen style must be applied consistently.
- Navigation must be consistent via all designated tools (mouse, keyboard, etc.) and rational e.g. using logical sequences.

#### **4.3.3 Graphics and Multimedia**

Internet technologies are notable for their graphics and multimedia capability. This can be used to significantly increase the comprehensibility of content and the attractiveness of the site, if the user can perceive the content via their senses. For people with sensory disabilities, the use of multimedia must not be an obstacle to their ability to access the conveyed information.

- Content must be structured so that text and graphics are comprehensible if viewed without color.
- For images, the combination of the foreground and background colors must contrast sufficiently on a black-and-white screen and when viewed by people with color-blindness.
- Media design features with no relevance to content (e.g. background graphics) must be identifiable as such if conveyed using alternative media. Example: graphics with no reference to content must explicitly contain a blank description i.e. `alt=""` and not just no ALT attribute.

#### **4.3.4 Language**

Access to application content depends fundamentally on the text in question, both with regard to its complexity and the reading ability it necessitates, and the transformation of readable page content to e.g. audio outputs of screen readers.

- Content should not be more linguistically complicated than necessary.
- The applicable rules of grammar and orthography of the page language must be observed.
- There must be no unidentified language changes within pages.

#### **4.4 Special Guidelines**

The following guidelines are listed according to the components to which they are to be applied.

##### **4.4.1 Central Portal Mechanisms**

The following mechanisms are of central importance in the creation of accessible web sites:

- Templates (page skins, portal templates, content layouts) can be used to influence many types of behavior.
- Portal styles and cascading style sheets (CSS) are used to clearly separate structure and content.
- Access control rights from page to item level enable the optimized management of items.

##### **4.4.2 General Information**

Accessibility requires that the generated Portal pages validate to published formal grammars. Oracle Portal currently generates HTML that validates against the HTML 4.01 Transitional document type. It is currently planned that future releases will support Strict and XHTML document types.

All pages should be structured in accordance with the applicable HTML document standard and the guidelines outlined below. This applies equally to content added to pages. Deprecated features must no longer be used.

All items and portlets should be assigned keywords when being created for easy searching. This allows portal content itself to be found easily using the ‘Search’ portlet. The use of the portlet is not compulsory. However, it should be used as it is included in Oracle Portal by default and makes a web site more user-friendly.

##### **4.4.3. Page Groups**

Page groups are used to organize portal objects such as pages, templates, styles, navigation pages etc. Page groups can be used to logically separate and organize different types of applications that are to be represented in a portal e.g. ‘Content Management’ and ‘Content Publication’.

- Each page group must be assigned a default portal template.
- Each page group must be assigned a default style.

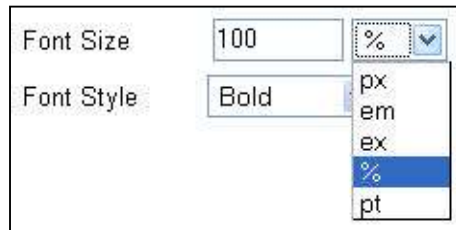
**Page groups facilitate the organization of portal objects.**

#### 4.4.4 Layout and Views

##### 4.4.4.1 Styles

Colors and fonts for pages and their content are configured using styles. These settings have a direct effect on legibility for the color-blind or those with defective vision. Appropriate settings are required to ensure compliance of the portal appearance with the relevant accessibility guidelines.

- At least one style for controlling the appearance of items, portlets and tabs must be defined.
- All fonts must use a relative size to facilitate scaling of pages.



It is possible to integrate proprietary cascading style sheets (CSS) using a page skin by adding a link to the CSS into the head section of the page skin e.g.

```
<link rel="stylesheet" type="text/css" href="mystyle.css" />
```

See below for further information on page skins.

However, the referenced proprietary CSS must at least contain the equivalent item descriptions from the Oracle Portal style to be effective e.g.

```
...  
.PortletHeaderText{Color:#FFFFFF;Font-Family:Arial,  
Helvetica;Font-Size:100%;Font-Weight:bold;}  
.PortletHeading1{Color:#336699;Font-Family:Arial,  
Helvetica;Font-Size:90%;Font-Weight:bold;}  
.PortletHeading2{Color:#336699;Font-Family:Arial,  
Helvetica;Font-Size:80%;Font-Weight:bold;}  
.PortletHeading3{Color:#336699;Font-Family:Arial,  
Helvetica;Font-Size:70%;Font-Weight:bold;}  
.PortletHeading4{Color:#336699;Font-Family:Arial,  
Helvetica;Font-Size:70%;Font-Weight:bold;}  
...
```

Portal templates help in developing default layouts and consistent adherence to a common structure.

##### 4.4.4.2 Portal Templates

Portal templates can be used to specify a default layout.

- For consistent, standardized structuring of portal sites, portal templates are essential.
- After creating the page group and style, the portal template is the third design step.

The portal template performs the following functions: layout, style, access rights, basic structure and is built using the Portal page editor.

To provide the user with a consistent basic page structure, all pages should use a portal template. The portal template is used to structure the page using tabs, item regions and portlet regions to divide the page into its basic structural building blocks. The functions of individual regions within the page are also specified here.

- Generally, each page must have at least one region.
- The Region Content property of each region specifies whether or not the user when editing a page can add content.

In some regions, it should not be possible for the user to add content items such as logos, images, navigation and other portlets as the region contains standardized content that applies to all pages that use the template. Other regions are provided for users to enter content. The aforementioned property is then set to allow users to add content. The preview function is used to check how the template appears as a page without specific content added.

Ensure that the page contains as few regions as possible, as each region is generated as a layout table in the HTML source.

Layout tables must be linearizable so that they can be recognized as such by text browsers, screen readers etc. The tables generated by Oracle Portal are generally linearizable. Ensure that not too many tables are generated when structuring the page.

#### **4.4.4.3 Page Skins**

Page skins can be applied to pages and portal templates. This type of template is used to specify what is displayed on the page surrounding the structure as defined by the page or a portal template. Page skins are written by using hand crafted HTML code.

- All portal sites should be created using a combination of portal templates and page skins.
- A page skin can be assigned to the portal template so that all pages are structured identically using a combination of both templates
- The page skin must at least contain the document type definition for the generated HTML code to pass cleanly through a validator.



#### 4.4.4.4 Content Layouts

Content layouts are used to control the display and layout of the properties of items in an item region. The template is written with HTML code with embedded tags to represent the properties to be displayed.

- The HTML used must comply with the applicable accessibility standards.

#### 4.4.5 Pages

WCAG and Section 508 requirements must be observed for the page layout, as the structure of the content is closely linked with the rules for accessibility. Some of the important rules essential to page structuring are outlined below:

- Blinking or moving text and page content must be avoided as it must be possible to freeze movement.
- Alternative page layout: do not place too much content in complex structures on a single page, but instead build up multiple simple pages with clear navigation options in which information is easily found.
- Suitable text equivalents must be provided for every graphical or multimedia item (images, movies, sounds) on the page.
- Avoid automatic forwarding.
- Highlight changes from the main language to another language.
- Ensure a sequence of hyperlinks, form check boxes and any input fields are navigable with the tab key, traceable and logical.



Sub-pages are helpful, and should be used to structure complex content.

#### 4.4.6 Sub-pages

By creating sub-pages, highly complex content can be distributed across different pages. There can be several reasons for dividing content into sub-pages, e.g.:

- To break down complexity within the page
- Security – the specific page content may only be viewed by individual departments and therefore user groups
- Style – the page has a specific appearance e.g. as the organization has its own brand for this area
- Approval processes – individual departments have different approval processes that must be mapped

Sub-pages may be based on a less complex portal template.

- Logical, unique page names should be chosen as they are used in linking (see Page Link also).
- If a sub-page uses a different portal template, the guidelines for portal templates apply here also.

Seeded pages such as the search results page must be linked to the applications portal template so that this page also complies with the chosen standards and is consistent in look and feel. Make sure that this page can also be used by several different portal applications.

#### 4.4.7 Tabs

Content can also be grouped logically using tabs. A decision must be made during the design phase regarding whether content should be structured using individual pages (e.g. sub-pages) or on one page using tabs. The page can also be organized into further sub-tabs per tab.

The content of pages is structured using different regions. Tabs can also be used where content is to be assigned to different user groups. Every tab has its own access definition in this case.

- Tabs are useful if the content should be accessible from a page, but requires a logical structure due to its complexity or security requirements.

#### 4.4.8 Items

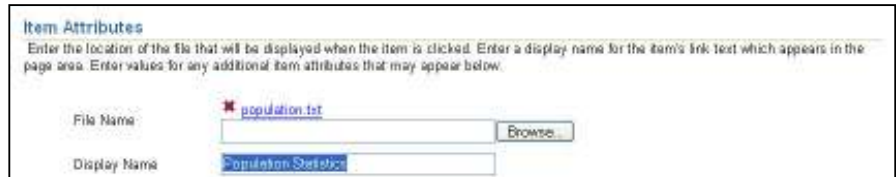
It must be ensured that all items have a description, search terms, perspectives and categories etc.

- Avoid the simple item types as descriptions and search terms can not be entered and therefore the use of these item types would create a barrier to access.

#### 4.4.8.1 File

When a specified file is uploaded to a page and saved it forms 'fixed content' that can be displayed immediately on the page in the corresponding region, or accessed via a link to display the content in the existing browser window or a new window.

- If the link to the file is represented on the page by an image, the display name is generated into the ALT property of the IMG tag.



#### Generated HTML:

```
<a href="http://uksn289.uk.oracle.com:7778/portal/page/portal/phenty/population.txt">  
</a>
```

- The text of the description appears under the image and should not be specified if it is not a real description.

#### 4.4.8.2 Text

A text item can have a length of up to 32KB, reduced in size by escaping any special characters. It is entered in a basic text editor and appears statically on the page. The text editor allows the user to switch between WYSIWYG mode and html source mode. The user can edit the text graphically or switch modes and change the HTML code directly.

- Use font sizes that scale to facilitate resizing in the user agent e.g. the browser.

#### 4.4.8.3 URL

This item is used to create a link with another source on the Intranet or Internet.

- The display name must be chosen logically as it represents the visible link text. By default the description is displayed under the link.
- If an image is used for the link, a display name must be specified as it is generated into the ALT property. This is the only way in which this item can be used in text browsers as the link text appears instead of the image. To configure whether an image or link text is to be displayed for a region, the definitions of the region display properties can be changed accordingly.

- If a link target is opened in a new window, a warning must be displayed before changing windows i.e. if you change the display option to 'link that displays item in new browser window', the description attribute must be displayed first, and then the link name so that the warning may be visible.

#### **4.4.8.4 Page Link**

A page link is used to display a link to a page in the same or another page group.

- The path name, i.e. page name, is displayed as a link. This must be a rational, logical description of the page.
- If the link is represented on the page by an image, the display name is generated into the ALT property of the IMG tag. The same guidelines apply as for the URL item.

#### **4.4.8.5 Images**

When uploading an image from a local directory Oracle Portal loads the specified image file and renames it. It is assigned a generated unique name. The new filename assigned by the system appears in the 'src' property of the IMG tag.

Conversely, if the image source is specified using a URL (e.g.: /images/xyz.gif), the filename is not changed and the image is referenced. The image file must be located on the server where Oracle Portal is installed. The name of the image map is determined from the display name attribute, is written to the usemap HTML property and must be consistent with the value in the image map item attribute.

The description attribute of an image as entered during item creation is output as text on the page, but is not generated as the ALT property.

- The display name attribute is used to populate the generated ALT property.
- The name property of the image map must be the same as the display name if the image map feature is being used.

#### **4.4.8.6 Zip File**

Items that represent a zip file can be embedded on pages.

- The display name of the item appears as a link on the page.

#### **4.4.8.7 PL/SQL**

A PL/SQL item can be used to retrieve information directly from the database. The general rules for accessibility apply to the results brought back by PL/SQL code.

#### **4.4.9 Default Portlets**

Portlets contained in the Oracle Portal package can be embedded in a region and are given the layout corresponding to the templates that apply to the page.

Note: not all portlets supplied with Oracle Portal or downloadable from the OTN knowledge exchange conform to accessibility best practices.

#### 4.4.10 HTML Portlets

HTML portlets can be used to display content in the portal that is neither simple text nor a link to another page source. The portlet content can be structured by specifying the direct HTML code.

- The HTML used must comply with the applicable accessibility standards.
- HTML portlets should not contain any frames. This would combine 'Layout using tables' with 'Layout using frames'. However, if frames must be used, each frame must be given a title and the NOFRAMES tag used. Alternative text can then be provided.
- If data is displayed in a table, each table must contain the SUMMARY property and clearly identify the column headings.
- Column titles must be differentiated clearly from the column data. In tables with complex content, a row title must also be provided. For the table to be used in a series, a separate table cell must be used for each unit of data.

#### Sample code for data table:

```
<table border="1" SUMMARY="This table charts population
statistics broken down by country">
<tr>
  <th id="header1"Country</th>
  <th id="header2">Population</th>
</tr>
<tr>
  <td headers="header1">United States</td>
  <td headers="header2">272 million</td>
</tr>
<tr>
  <td headers="header1">United Kingdom</td>
  <td headers="header2">59 million</td>
</tr>
</table>
```

#### 4.4.11 Other Portlets

For all third party or hand built portlets that are generated using PL/SQL or Java, the same rules as for all portal items and content apply to the output of the portlets.

#### 4.4.12 Buttons

Using images with buttons can make them more visually understandable but they must be associated with textual equivalents.

- Provide a text equivalent for the image associated with a button.

#### 4.4.13 Forms

- All input fields must be named. To achieve this, the code must contain the Label tag.

#### Code Example:

```
<tr>
  <td><label for="firstname">First name:</label></td>
  <td><input type="text" id="firstname"
    name="First name"></td>
</tr>
```

- All input fields must be provided with placeholder characters.

#### 4.4.14 JavaScript

All pages that are created using Oracle Portal contain JavaScript items generated by the system in their HTML. JavaScript can also be added to a page by the developer using a number of features in Oracle Portal.

- All scripts must contain a NOSCRIPT region. The NOSCRIPT region describes the purpose of the script and is displayed by browsers that do not support JavaScript.
- The use of 'JavaScript:' constructs is expressly prohibited.
- All events must be defined device-independently.

## 5. SUMMARY

### 5.1 Oracle and Accessibility

The Oracle Accessibility Program (OAP) is an independent Oracle unit. It examines Oracle technology and products from the viewpoint of accessibility.

As part of the OAP, status reports on the accessibility of Oracle Portal are published voluntarily.

Oracle takes the subject of accessibility very seriously. This is why Oracle codes its HTML products to internationally recognized guidelines and builds its applications to work with the accessibility extensions of commercially available web browsers and with assistive technology.

Oracle has been a leading force in the area of accessibility since 2001, even when guidelines were not commonly stipulated in statutory regulations. Internally, Oracle launched the Oracle Accessibility Program to improve its products and technologies. As part of this program:

- A Competence Center was set up to structure and monitor the development of Oracle products and solutions from an accessibility perspective.
- Voluntary status reports on the accessibility of Oracle products and solutions are published on the Internet.
- Proprietary Oracle guidelines (Oracle Global HTML Accessibility Guidelines, OGHAG) have been developed that are a combination of the WCAG Checkpoints and relevant parts of US Section 508.

To be able to verify adherence to stricter guidelines, Oracle has also developed an Accessibility Checker that creates test reports on individual pages, web sites or sets of HTML pages compressed into an archive (zip/jar) on the basis of OGHAG. The test reports provide information on any breaches of the regulations, the exact point in the HTML source where it occurs and provide specific notes on addressing it.

### 5.2 Accessible Pages with Oracle Portal

Accessible portal web sites are important for all potential users who would have difficulty in accessing the content of traditionally structured Internet sites. Any number of types of disability can be at the root of this. In addition to the visually disabled or blind, people with motor, acoustic or mental limitations may be affected.

Accessibility of Internet pages depends on:

- Which content requirements the application has to fulfill.
- Which technologies are used for the application.
- Which tools / generators are used during development and
- How these are used.

In a study of the accessibility of Oracle Portal, it was first determined how the tool behaves as standard. The results were then revised to optimize this 'standard behavior' from the point of view of developing accessible web sites.

Therefore it is not only the product itself that is important but also how it is used to develop web sites that can be accessed by people with disabilities. This paper has detailed how Oracle Portal can be used to develop accessible web sites that meet internationally recognized guidelines.

## 6. LINKS AND REFERENCES

Oracle Accessibility Program:

<http://www.oracle.com/accessibility>

Americans with Disabilities Act (ADA):

<http://www.usdoj.gov/crt/ada/adahom1.htm>

Section 508 of the US Federal Rehabilitation Act:

<http://www.section508.gov/>

World Wide Web Consortium:

<http://www.w3.org/>

Statement from the EU Commission on accessibility:

[http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001\\_0529en01.pdf](http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0529en01.pdf)

W3C web Accessibility Initiative:

<http://www.w3.org/WAI/>

W3C Web Content Accessibility Guidelines:

<http://www.w3.org/WAI/GL/>

Authoring Tool Accessibility Guidelines:

<http://www.w3.org/TR/WAI-AUTOOLS/>

User Agent Accessibility Guidelines:

<http://www.w3.org/TR/WAI-USERAGENT/>

XML Accessibility Guidelines:

<http://www.w3.org/TR/xag>

Evaluation and Report Language:

<http://www.w3.org/TR/EARL10-Schema/>

W3C Markup Validation Service:

<http://validator.w3.org/>



## **ORACLE FUSION MIDDLEWARE**

Building Accessible Web Sites with Oracle Portal

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