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Testing Oracle Products for Accessibility

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Introduction

This document provides information that will help you avoid common pitfalls when testing Oracle products for accessibility. It is not meant to be a comprehensive testing guideline, which should include a variety of tests including manual tests, automated tools, expert evaluation, and testing with a wide range of persons with disabilities running a variety of access technologies.

Documentation

Oracle documents the degree to which each product meets accessibility standards in Voluntary Product Accessibility Templates (VPATs), located at http://www.oracle.com/accessibility/vpats.html. VPATs are an industry-standard way for recording conformance with the Section 508 standards. Products may provide additional accessibility-related content in a variety of formats, including:

- Reference Manuals, which are typically located on the Oracle Technology Network (http://www.oracle.com/technetwork/index.html)

- Product Release Notes, which may list known exceptions and workarounds discovered too late to document elsewhere.

- Whitepapers posted to the Products section of http://www.oracle.com/accessibility

All of the above documents may include information that is critical for testing the product for accessibility. Some examples include:

- Product versions. In general, products are constantly being enhanced for accessibility, and the VPATs will indicate the minimum version and patch that is recommended.

- Known Exceptions – bugs in the product or areas of functionality that are known to have accessibility issues.

- Keyboard shortcuts which are necessary to successfully operate the product.

- Workarounds or alternatives which may be required in order to operate the product successfully.

- Functionality which can be accomplished in multiple ways, some of which may not be accessible.

- Modes that must be set in order for a product to be accessible.

Additionally, Oracle interprets some accessibility standards a specific way, often because existing standards (Section 508 and WCAG 1.0) have grown old or are unnecessarily restrictive. This information is listed on the Standards Interpretation page at http://www.oracle.com/accessibility/standards.html. Our interpretation of these standards may result in your testing revealing items we don't consider to be defects. This can happen often with automated test tools.

Training

Most Oracle products cover a specific product domain, and we expect users to be knowledgeable in that area. You should consider attending the appropriate classes for the products before you start any testing for accessibility. It is important to be able to distinguish accessibility-related issues from product issues or domain unfamiliarity.

We also expect users with disabilities to have a high level of proficiency with the Access Technology (AT) that they are using, especially screen readers. More information about this is in the whitepaper 'Using AT with Oracle HTML products' at http://www.oracle.com/accessibility

Product Configuration and Customization

Many Oracle products must be configured in order to provide an accessible user interface. These configurations are detailed in the documentation mentioned above, and generally fall into the following categories:

- **Installation:** For example, with the Siebel On-Premise products, an instance of the SI+ mode must be installed

- **Configured by Administrator:** For example, with some Enterprise Manager products, the System Administrator must set a value on the middle tier that enables accessibility features.

- **Configured by User:** This is the most common type of configuration, and typically involves a Preferences screen where the end-user can enable certain modes. For example, in the PeopleSoft product line, in the My Personalizations screen each user can set the Accessibility mode.

The types of accessibility modes include some or all of:

- Optimizations for use with a screen reader, that typically result in simplified rendering of certain screens or components

- Large Fonts

- High Contrast

When performing certain accessibility tests, you must make sure that the product is running in the appropriate mode. In some cases, we have seen installations inadvertently hide the screens that allow end-users to make some of these changes.

It is also common for deployments to customize the screens we provide, or build entirely new screens. When doing this, it is the responsibility of your developers to follow the appropriate accessibility standards and best practices provided by the underlying toolset. Oracle products are capable of generating code that meets certain accessibility standards, but only when the application developer has provided the appropriate information.

Testing Environment

Some Oracle products list a recommended configuration in their VPAT or other product documentation. Although our products are coded to standards so that the widest possible set of AT can interoperate with them, in some cases we have found that specific operating systems, browsers, or AT yield better results. Where products do not list a recommended configuration, our general advice is to use the newest version of the operating system, browser, and AT that is commercially available.

Some AT is known to be demanding on system resources. All testing involving AT should be performed on systems that are appropriately configured in terms of RAM, clock speed, disc, etc., as indicated by the manufacturer of the AT.

Most, if not all, Oracle web-based products rely on Javascript. Javascript should not be disabled in your browser unless product documentation specifically states this is appropriate.

Automated Testing

Most of our customers use some amount of automated testing as part of their overall test process. Our own use of automated tools has revealed the following potential problems:

- Tests not directly supported by accessibility standards. For example, requiring that ALT text be shorter than a specific number of characters is not directly indicated by either Section 508 nor WCAG.

- Lack of robustness of test algorithms. For example, some tools may not correctly read dynamic AJAX applications, or new WAI-ARIA markup.

If you use such a tool, you must make sure that it is capable of accurately assessing the type of code that our applications generate, and you must review what tests it is performing to determine if they are completely supported by the standards our products claim to meet.

Also be aware that some accessibility content may be rendered only while interacting with the product. For example, in OBIEE Dashboards, heading markup for data tables is only added when the table first receives focus. Thus, an automated tool may report failures on a page if you have not triggered this code.

Most importantly, automated tools cannot assess the real-world impact of a defect on actual product use. As an example, an automated tool may report a field with a missing label, but that field may not be part of the actual transaction that is performed by your users, in which case the significance of the defect may be negligible. The results of any automated tools should be validated by accessibility experts who have read all the documentation and understand the criteria for assessment as well as Oracle's standards interpretation, and take into account the actual business transactions that will be utilized.

Classifying Defects

The accessibility of Oracle software depends on many things – some technological, some human and some procedural. Defects found during testing must be assessed against a variety of components to determine the source of the fault. For example, if a user who is blind cannot fully interact with a data table in a page, any of the following could be the cause:

- The Operating System or Browser is not correctly mapping the Table markup into the Accessibility APIs

- The User's Assistive Technology is not correctly mapping the table as exposed by the Accessibility API to the user.

- The Developer has not correctly marked up the table such that it exposes all the correct information to the browser.

- An Implementer has modified the code of the table such that it no longer exposes the correct information to the browser.

- The User has not been trained on how to use either the application itself, or the AT in the correct manner to interact with the application.

Oracle products are coded to standards, and we will correct any issue found within the code we ship that conflicts with claims made in our VPATs, in accordance with our standard support policies. But not all accessibility-related defects are directly under our control.

Note that some Oracle products, such as E-Business Suite, allow customizations to be disabled at runtime. If there is a possibility that an accessibility defect has been introduced as a result of a customization, tests should be re-run with that customization disabled before contacting Oracle Support.

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