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Oracle ADF 11g Desktop Integration Localization Whitepaper

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Introduction

Localization in ADF Desktop Integration (ADFdi) can seem complex at times due to the combination of various different technologies. This document attempts to provide some clarity on how it all works and what to expect.

The good news is that a typical, real-world user has the same language/culture settings at all levels of technology stack. This user sees a consistent result and doesn't need to understand the complexities in the following sections.

Software developers and testers (as well as some advanced users) may have different language/culture settings for different parts of the technology stack. In these cases, the user may see different languages used for different parts of the complete application.

Summary of Localizable Areas Elements

When a business user interacts with an integrated workbook, there are various elements involved in the picture. Each of these elements has its own set of supported languages and resource translations. These translations are the responsibility of the respective publisher.

TABLE 1. SUMMARY OF LOCALIZATION

AREA SUBJECT TO LOCALIZATION	DETERMINATION OF LANGUAGE TO USE
Microsoft operating system	OS-level settings (Regional Settings control panel)
Microsoft Office	MS Office Language Settings
Web pages displayed in ADFdi Dialog actions	Varies: often controlled by MS Internet Explorer's Language Preferences (Internet Options)
ADFdi client resources	MS Office UI Language setting
ADFdi server resources	MS Internet Explorer language preferences
ADFdi custom resource bundles	MS Internet Explorer language preferences

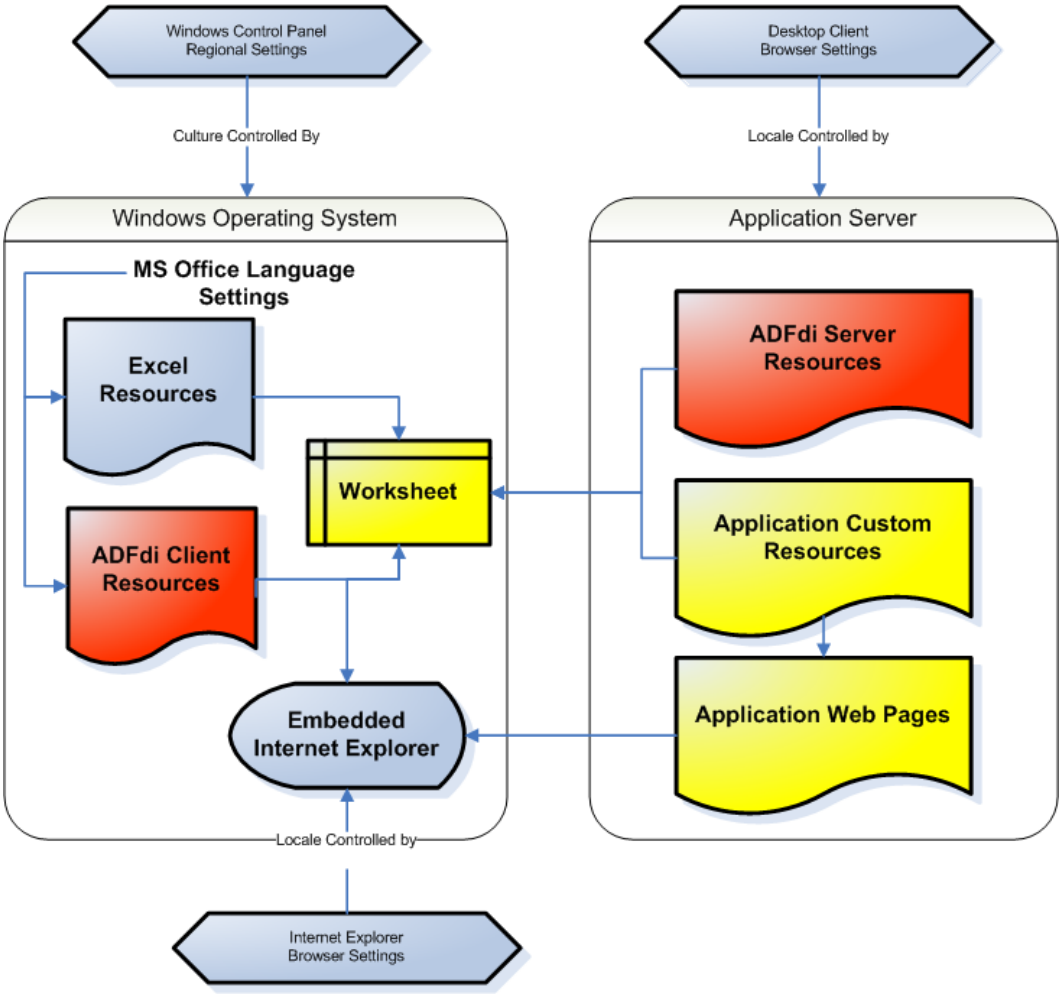

Figure 1. Overview of Localization

Terminology: Culture and Locale

Microsoft has a concept of "Culture" whereas Java has a concept of "Locale". These concepts, while not identical, are roughly equivalent. While these concepts also apply to settings for culture-sensitive data formatting (e.g. date/number formatting), this document only deals with language and translation.

Microsoft Culture Settings

Microsoft has one set of culture settings available at the operating system level via the Regional Settings control panel.

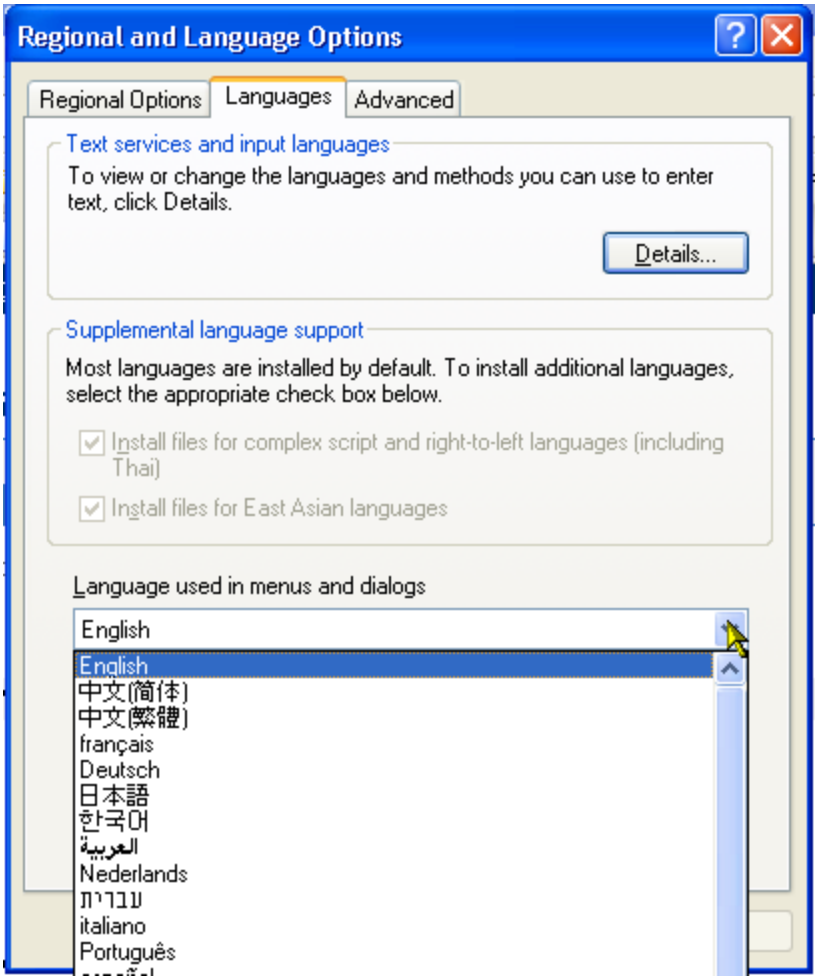

Figure 2. Regional and Language Options Control Panel

Microsoft has another set of culture settings for Microsoft Office.

Tech Note: the configuration of these settings is not available to all users on all editions and versions. This document does not address how to set up localized and/or multi-lingual versions of these third-party products.

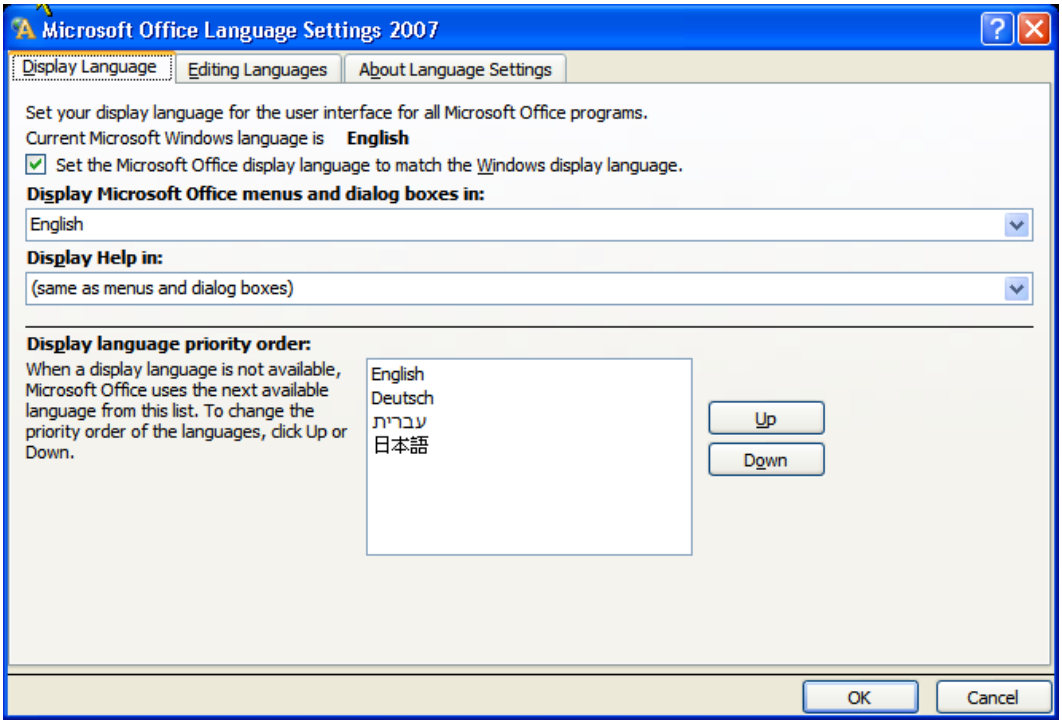

Figure 3. Microsoft Office Language Settings

It is possible, for example, to configure the Windows operating system to run using Spanish language and then – on the same machine – to configure MS Office to use German.

Web Browser Language Settings

ADFdi uses portions of Microsoft Windows Internet Explorer7 (MSIE) to display web pages inside Excel. These web pages may (or may not) be able to display localized versions. If the provider of the web pages does provide localized versions, the provider (such as a web application) will typically rely on the "Language Preferences" configured in the "Internet Options" dialog.

Tech note: the preferred browser language setting is typically transmitted to the server in the HTTP headers using the "Accept-Language" header field.

ADFdi has no control over the MSIE configuration or over whether/how web applications respect these preferences.

ADFdi Client Resources

The ADFdi client framework contains a number of translatable resources for displaying user-visible texts at runtime in the user's preferred language. The texts include (client-side) error messages as well as labels, prompts, and titles used in ADFdi dialogs displayed at runtime. These texts have been localized into the standard Oracle runtime languages.

ADFdi uses the MS Office UI Language setting as the preferred language for the client-side runtime translations. If the preferred language is not available, ADFdi falls back to the default resource bundle (i.e. English).

ADFdi Server Resources

The ADFdi client framework also fetches some messages from the web application. These messages include all server-side error messages as well as label hints for attribute bindings.

In order to promote a more consistent choice of language for translations, ADFdi's client component automatically includes MSIE language preferences in its server requests using the "Accept-Language" header field.

ADFdi's server component uses the "Accept-Language" header field when attempting to localize these server messages.

Tech note: ADFdi uses the first value from the "Accept-Language" header field. If this language is not available, ADFdi falls back to English. Secondary languages from "Accept-Language" are not considered.

ADFdi Custom Resource Bundles

ADFdi developers have the ability to register custom resource bundles with each workbook. The developer may then use translation resources from these bundles in the ADFdi UI component configuration: button labels, menu item labels, etc.

ADFdi's server component requests a localized version of each custom resource bundle. The language rules for this translation are the same as for ADFdi Server Resources (above).

ADFdi Design-Time Localization

The ADFdi Designer supports the same design-time languages as Oracle JDeveloper: English and Japanese. If the Windows culture is configured for Japanese, the ADFdi Designer will display design-time client resources in Japanese. Otherwise, English will be used for client resources.

Mixed Language Configurations

As stated previously, most users will use consistent settings for each element of the technology stack. As a result, these users will usually see messages in the same language.

Some elements of the technology stack may choose not to provide translations for a given language. In this case, that element will fall back to a secondary or default language as described here or according to rules designed by the provider of that element.

If different elements are configured for different language preferences, the user will see a mixture of languages. It is theoretically possible to create a configuration where 4-5 different languages are visible simultaneously. Each element of the technology stack attempts to adhere to the user's explicit preferences.

Additional Translation-Related Topics

- ADFdi's command-line utilities are available only in English.
- ADFdi's ClickOnce-based client installer can be localized. However, the user must install a special language pack available from Microsoft in order to see the installer in a particular language.

References

- Oracle® Fusion Middleware Desktop Integration Developer's Guide for Oracle Application Development Framework 11g Release 1 (11.1.1)
- Change your Internet Explorer language settings
- Customize language settings for the 2007 Office system
- VSTO Language Packs
- MS NLS API Reference
- Java supported locales

Conclusion

Oracle ADF 11g Desktop Integration (ADFdi) integrates several diverse sets of technologies. Each of these technologies provides various options for controlling the choice of natural human language when localization occurs. ADFdi respects each of those various options.

Business users of ADFdi solutions can view integrated documents with a consistent set of languages. Or, they can supply custom overrides at various levels to achieve the desired effect at the user level.

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