MarkLogic Server

**MarkLogic Toolkit for Word®
Developer's Guide**

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MarkLogic Toolkit for Word® Developer's Guide

1.0   Overview and Requirements

This chapter introduces the MarkLogic Toolkit for Word® and lists the product requirements and supported platforms. It includes the following sections:

- Overview of the MarkLogic Toolkit for Word

- System Requirements

1.1   Overview of the MarkLogic Toolkit for Word

The MarkLogic Toolkit for Word allows you to integrate Microsoft Word 2007 directly with content stored in a MarkLogic Server database. You can use the MarkLogic Toolkit for Word for the following:

- Access Content From MarkLogic Server in Microsoft Word 2007

- Custom Browser-Based Add-In

- No C# Coding Required for Add-In

- Configurable Installer to Deploy to Word Client

1.1.1   Access Content From MarkLogic Server in Microsoft Word 2007

An *add-in* in Microsoft Word 2007 is a panel that appears in the Word interface that allows you to perform custom actions. The MarkLogic Add-in for Word® uses Word's add-in facility to create a panel in Word that allows you to run a MarkLogic Server application in the MarkLogic Add-in for Word. You can use the MarkLogic Add-in for Word to retrieve content from MarkLogic Server and use it in a Word document, and you can use the Add-In to take content in a Word document and use it in a MarkLogic Server application.

1.1.2   Custom Browser-Based Add-In

The MarkLogic Add-in for Word exposes a browser in the Microsoft Word interface, and the browser has access both to Microsoft Word and to anything over HTTP. The Add-In communicates with an HTTP Server application running in MarkLogic Server. The MarkLogic Server application can perform whatever tasks you want, and therefore allows for completely custom behavior of the MarkLogic Add-in for Word. For example, the application can provide a search interface to content stored in MarkLogic Server, and can allow you to use content from that search in Word. The application can have any interface that you can run in a browser, and it can do things like allow users to insert content into Word, extract content from Word, and so on.

1.1.3   No C# Coding Required for Add-In

The MarkLogic Add-in for Word uses a JavaScript library to communicate with Microsoft Word 2007, and it uses HTTP to communicate with MarkLogic Server. Consequently, you can create full-featured applications to run in the MarkLogic Add-in for Word, and those applications run as a MarkLogic Server HTTP Server application.

The usual way to create a MarkLogic Add-in for Word is to use the Word software development tools and create a C# program that communicates with Word. The MarkLogic Add-in for Word requires no developer-written C# code; all of the communication with Word 2007 is done via a JavaScript library. The JavaScript library communicates with Word on the client side, and with MarkLogic Server on the server side, requiring no C# coding. You can make server-side code changes to your MarkLogic Server application which will change the behavior of your MarkLogic Add-in for Word.

1.1.4 Configurable Installer to Deploy to Word Client

The MarkLogic Toolkit for Word includes a customizable Windows installer file (`.msi`). You can create a customized installer which points to your application. Once you have created the custom installer, you can deploy it on any number of Microsoft Word 2007 instances, either by having individual users install the `.msi` file or by having a network administrator do a network installation.

1.2 System Requirements

The MarkLogic Toolkit for Word has the following system requirements:

For the Microsoft Windows client:

- Microsoft Office 2007.

- Microsodt Visual Studio Tools for Office Runtime 3.0 (note that the MarkLogic Add-in for Word installer checks for these, and provides a facility to install them).

- Windows Installer 3.1 (note that the MarkLogic Add-in for Word installer checks for these, and provides a facility to install them).

- The 2007 Microsoft Office Primary Interop Assemblies, which are installed with Office 2007 and also available separately (note that the MarkLogic Add-in for Word installer checks for these, and provides a facility to install them).

- .NET Framework 3.5 (note that the MarkLogic Add-in for Word installer checks for these, and provides a facility to install them).

- Administrative privileges on the Windows machine.

For the Windows environment in which you customize the MarkLogic Add-in for Word installer (`.msi`) file:

- All of the prerequisites for the Microsoft Windows client (above).

- Microsoft Windows SDK v6.0 or greater.

For the instance of MarkLogic Server with which the MarkLogic Add-in for Word communicates:

- MarkLogic Server version 4.0-3 or later, on any supported platform. See the *Release Notes* and the *Installation Guide* in the MarkLogic Server documentation for details on the requirements for MarkLogic Server.

- Administrative privileges for the MarkLogic Server environment are required.

2.0   Preparing the Installer and Installing the MarkLogic Add-in for Word

This chapter describes the installation process for the MarkLogic Add-in for Word. The procedures involve installing an application in an instance of MarkLogic Server, creating a custom installer for the Add-in, and installing the MarkLogic Add-in for Word. The following sections are included:

- [MarkLogic Toolkit for Word Installation Package](#)

- [Installation Procedure](#)

2.1   MarkLogic Toolkit for Word Installation Package

You can download the latest MarkLogic Add-in for Word installation package from developer.marklogic.com. The installation package is a zip file that expands to a folder with the name and version number of the MarkLogic Toolkit for Word, and that folder contains the following:

- `addin.deploy` folder: Contains the MarkLogic Add-in for Word installation packages (`.msi` and `.exe` files).

- `config` folder: Contains the `config.idt` file, which is used when customizing the installation package.

- `docs` folder: Contains the documentation for the MarkLogic Add-in for Word, including the *Word Add-In Developer's Guide* (this document) and the JavaScript API documentation.

- `js` folder: Contains the JavaScript API source file to use in your applications.

- `Samples` folder: Contains a sample MarkLogic Server application that communicates with the MarkLogic Add-in for Word.

There are three main parts to the installation process: installing the application in MarkLogic Server, creating the custom installation package for the Add-In, and deploying the Add-In in Microsoft Word. The remainder of this chapter describes the installation process for the three main parts of the MarkLogic Add-in for Word installation.

2.2   Installation Procedure

This section describes the various parts of preparing a MarkLogic Add-in for Word installer for deployment. For information about system requirements, see "System Requirements" on page 5. This section contains the following parts:

- [Installing Your Application in MarkLogic Server](#)

- [Creating a Custom Installer for the MarkLogic Add-In for Word](#)

- [Installing the MarkLogic Add-in for Word on Clients With Microsoft Word](#)

- [Uninstalling the MarkLogic Add-in for Word](#)

- [Modifying the Registry to Change the URL During Development](#)

2.2.1   Installing Your Application in MarkLogic Server

To use the MarkLogic Add-in for Word, you need an application that runs on MarkLogic Server to which the Add-In communicates. The application can be any application that runs on a MarkLogic Server HTTP Sever. The application uses the JavaScript API as its interface to communicate with Microsoft Word. For a description of a simple application, see "Getting Started With the MarkLogic Add-in for Word" on page 13.

After you install your application, make a note of the URL to that application, as you need to enter that in your `.msi` file before you deploy the application to your users. A sample URL might be `http://marklogic.myserver.com:8123/`, where the HTTP Server is running on the machine `marklogic.myserver.com` and is running on port 8123.

2.2.2   Creating a Custom Installer for the MarkLogic Add-In for Word

You can create a custom `.msi` file for the MarkLogic Add-in for Word. The customization modifies the following properties for the MarkLogic Add-in for Word, and those properties end up stored in the Windows registry under `HKEY_CURRENT_USER\MarkLogicAddinConfiguration\Word`:

- `URL`: The URL of a MarkLogic Server application to which the MarkLogic Add-in for Word connects. The default value is `http://www.marklogic.com`.

- `RbnBtnLbl`: The label that appears on the custom ribbon button created by the Add-In. The default value is `My Button`.

- `RbnGrpLbl`: The label that specifies the Group in which the button appears in the ribbon (the ribbon group label). This appears in the ribbon underneath the button. The default value is `My Group`.

- `RbnTabLbl`: The label for the ribbon tab. The default value is `My Tab`.

- `CTPTitle`: The title for the Custom Task Pane that has the browser embedded. The default value is `My Task Pane`.

- CTPEnabled: A boolean that, when true, indicates that the MarkLogic Add-in for Word pane is opened when Word starts, or when false, indicates that the user must enable the Add-In using the button. The default value is true.

The following parts outline several different ways you can customize the .msi file. You can use whichever way makes is the most convenient in your development environment.

- [Edit the config.idt and use MsiDb to Customize the .msi File](#)

- [Use Orca.exe to Customize the .msi File](#)

2.2.2.1   Edit the config.idt and use MsiDb to Customize the .msi File

Perform the following steps to edit the .msi file using the config.idt file supplied in the installation zip package.

1.   Open the config/config.idt file supplied in the zip installation package.

   Note: If you do not want to use the config.idt file, you can export the idt information from the .msi file by running the following command:

   ```
   MsiDb -f "<directory where idt is to be exported>" -d
   "C:\MyAddin\MarkLogic_WordAddin_Setup.msi" -e Registry
   ```

2.   Use a text editor to edit the URL, CTPTitle, and other values in the idt file. Make sure to save your changes to the idt file.

3.   Use the MsiDb in the Windows SDK to run the following command to update the .msi file with your new values.

   ```
   MsiDb -f "<directory where idt is located>" -d
   "MarkLogic_WordAddin_Setup.msi" -i config.idt
   ```

   For example:

   ```
   C:\> cd "C:\Program Files\Microsoft SDKs\Windows\v6.0A\Bin"

   C:\Program Files\Microsoft SDKs\Windows\v6.0A\Bin> MsiDb -f
   "C:\MyAddin\MyConfig" -d "C:\MyAddin\MarkLogic_WordAddin_Setup.msi" -i
   config.idt
   ```

This updates the .msi file with your new values.

2.2.2.2 Use Orca.exe to Customize the .msi File

You can use the `Orca.exe` utility to customize the .msi file. `Orca.exe` is part of the Windows SDK, but is not always installed by default. To modify the .msi file using Orca, perform the following steps:

1.   Launch Orca.exe (for example, from the start menu). If you do not have Orca installed, install it. For details on Orca, see the Microsoft SDK documetation.

2.   In the Orca window, select File > Open and navigate to the location of the MarkLogic Add-in for Word `.msi` file (for example, `c:/tmp/MarkLogic_WordAddin-1.0-1/addin.deploy`).

3.   Select the `MarkLogic_WordAddin_Setup.msi` file and click Open.

4.   Select the Registry table on the left pane.

5.   Edit the values for the `URL`, `CTPEnabled`, `RbnGrpLbl`, `RbnTabLbl`, `CTPTilte`, and/or `RbnBtnLbl` Names.

> **Warning:** Do not edit any other values than these, otherwise the installation might not work correctly.

6.   Use File > Save to save the `.msi` file, or use File > Save As... to save the file to a different `.msi` file.

This updates the `.msi` file with your new values.

2.2.3   Installing the MarkLogic Add-in for Word on Clients With Microsoft Word
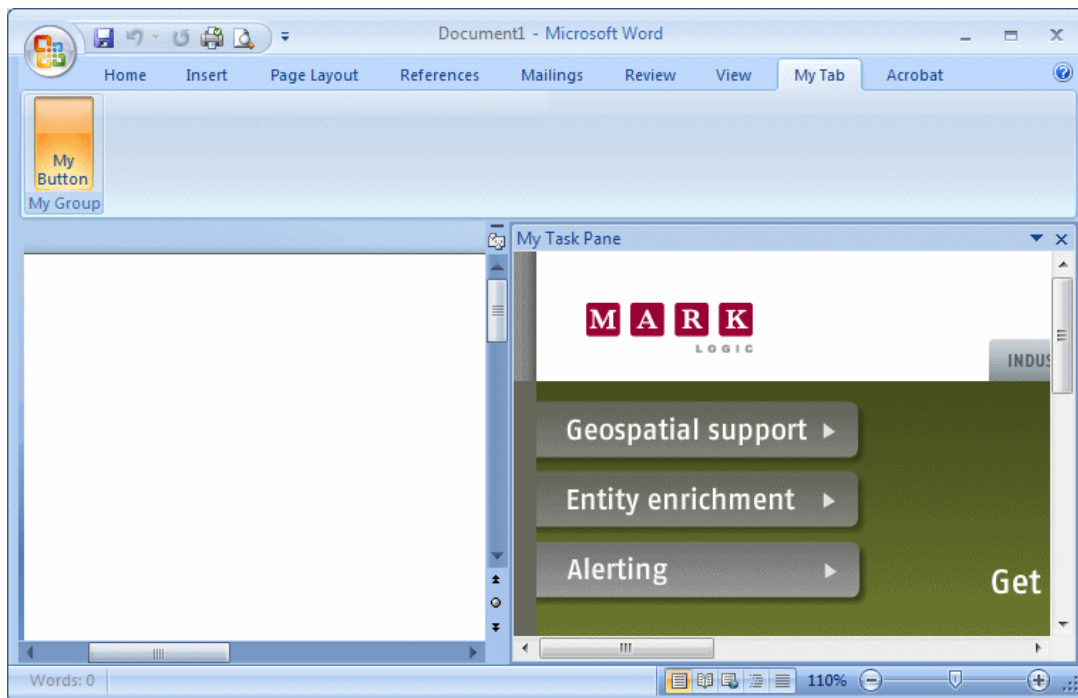
After you have prepared the `.msi` as described in the previous section, it is ready to install into Word on your Microsoft Windows clients. You can use the standard Windows techniques to deploy the installer across an enterprise, or you can make the `.msi` file and the `setup.exe` file available to your users and have them run the installer on their own machines using the steps below.

To run the installation, perform the following steps:

1.   Update the `.msi` file as described in "Creating a Custom Installer for the MarkLogic Add-In for Word" on page 8.

2.   Run the `addin.deploy/setup.exe` file. This installer checks for all of the dependencies needed by the MarkLogic Add-in for Word, and then installs them if they are not already installed.

> **Note:** If the setup program determines that you need to install .NET 3.5, the .NET installation will take some time and requires a reboot.

3.   When it is done checking for dependencies, and if all of the dependencies are met, it automatically launches the MarkLogic Add-in for Word installation (the `MarkLogic_WordAddin_Setup.msi` file).

4.   Follow the prompts for the installation, clicking Next until it installs the MarkLogic Add-in for Word.

5.   Click Close when the installer completes.

6.   Launch Microsoft Word to test the installation. You should see a new tab at the top of the Word interface with the name you added in your customization procedure earlier, and the My Task Pane to the right. If you made no modifications to the .msi file, the Add-In looks like the following in Microsoft Word:

2.2.4   Uninstalling the MarkLogic Add-in for Word

If you need to change any of the parameters of the MarkLogic Add-in for Word (the URL or the names of the customizable fields, for example), then you must uninstall the current version of the Add-In before installing a new version.

To remove the MarkLogic Add-in for Word from a Microsoft Word environment, perform the following steps:

1.   On the Windows machine in which the MarkLogic Add-in for Word is installed, open the Control Panel (for example, from the Start menu).

2.   In the Control Panel, click the Uninstall a program link (Windows Vista) or use the
        Add/Remove Programs Control Panel (Windows XP or Server 2003) to uninstall the
        MarkLogic_Word program.

2.2.5   Modifying the Registry to Change the URL During Development

The URL with which the MarkLogic Add-in for Word communicates with MarkLogic Server is
stored in the Windows Registry, and the installer updates that registry key during installation.
During development, it is sometimes convenient to change the URL (or some of the other
parameters) without creating a new installer, uninstalling the old one, and reinstalling the new
one.

You can modify the registry directly to change these key values. For example, run the following
command from a Windows command prompt to change the URL key to `http://localhost:8888`:

```
REG ADD HKEY_CURRENT_USER\MarkLogicAddinConfiguration\Word /v URL /d
http://localhost:8888/
```

3.0   Getting Started With the MarkLogic Add-in for Word

This chapter describes how to quickly get started using the MarkLogic Add-in for Word. It is a good starting place to understand what the MarkLogic Add-in for Word does, and includes the following sections:

- [Download and Unzip the Installation Package](#)

- [Create an HTTP App Server in MarkLogic Server](#)

- [Customize the MarkLogic Add-in for Word Installer](#)

- [Install the MarkLogic Add-in for Word](#)

- [Hello World Applications](#)

- [Sample Application](#)

3.1   Download and Unzip the Installation Package

If you have not already done so, download the MarkLogic Add-in for Word installation package from [developer.marklogic.com](#). After you download it, unzip it into a convenient location (for example, `c:/tmp`).

3.2   Create an HTTP App Server in MarkLogic Server

Create an HTTP Server in MarkLogic Server to use as an App Server for the MarkLogic Add-in for Word. For example, log into the Admin Interface, go to Groups > Default > App Servers and click the Create HTTP button. Note the server and port number, as you will need that to modify the installer with the URL of this server.

3.3   Customize the MarkLogic Add-in for Word Installer

Use the procedure in "Creating a Custom Installer for the MarkLogic Add-In for Word" on page 8 to customize your MarkLogic Add-in for Word installation. You must customize the URL with the one to your MarkLogic Server App Server, and you can modify any of the other settings, too, if you want.

3.4   Install the MarkLogic Add-in for Word

Install your customized MarkLogic Add-in for Word as described in "Installing the MarkLogic Add-in for Word on Clients With Microsoft Word" on page 10.

3.5   Hello World Applications

This sections shows how to build two hello world application:

- [Simple Hello World](#)

- [Hello World that Interacts With Word](#)

3.5.1   Simple Hello World

To create a very simple hello world application, perform the following steps:

1.   In the App Server root for the HTTP Server you created above (the one in which your MarkLogic Add-in for Word communicates), create a file called `default.xqy` with the following content:

```
"Hello World!"
```

2.   Launch your instance of Microsoft Word on the machine in which you installed your customized MarkLogic Add-in for Word.

3.   If prompted, enter the username and password to your instance of MarkLogic Server. You should see in the Task Pane the words `Hello World!`, which is the output of the program you created in `default.xqy`.

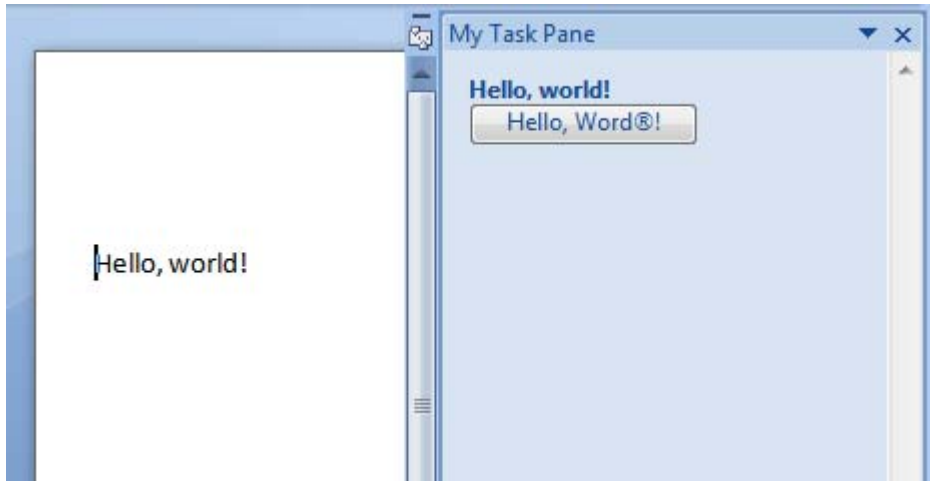### 3.5.2   Hello World that Interacts With Word

This section will add a button that can insert some text into the current document in Microsoft Word. To make a version of the Hello World program that interacts with Word, perform the following steps:

1.   In a text editor, open the `default.xqy` module from the Simple Hello World example above.

2.   Copy the following code into the `default.xqy` file and save it.

```
xquery version "1.0-ml";
(
xdmp:set-response-content-type('text/html;charset=utf-8'),
'<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">',
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta http-equiv="content-type" content="text/html; charset=utf-8" />
  <title>Hello, world!</title>
  <link rel="stylesheet" type="text/css" href="css/office-blue.css"/>
<script type="text/javascript"
src="js/MarkLogicWordAddin.js">//</script>
</head>
<body>
  <div id="ML-Add-in">
    <h1>Hello, world!</h1>
<button onclick="MLA.insertText('Hello, world!');">
Hello, Word&#174;!</button>
</div>
</body>
</html>
)
```

3.   Copy the `js` folder (including the `MarkLogicWordAddin.js` file) from the zip file to your App Server root.

4.   To test your changes, re-launch Microsoft Word.

5.   If prompted, enter the username and password to your instance of MarkLogic Server.

6.   Click the new Hello, Word®! button. Upon clicking the button, it pastes the text "Hello World!" into your Word document.

The code in this example adds a reference to the Add-in for Word JavaScript API, `js/MarkLogicWordAddin.js`. This API allows DHTML applications running on MarkLogic Server, like the one begun in this example, to communicate with the host instance of Word. The code includes the following JavaScript, which is executed with the button's onclick handler:

```
MLA.insertText('Hello, world!');
```

This function inserts the text (`Hello World!` in this example) into the active document at the cursor position.

3.6   Sample Application

The sample application is included in the `Samples/` directory of the zip file. This application allows you to search within Word 2007 documents expanded and stored in MarkLogic Server.

Sample code is provided on an as-is basis; the sample code is not intended for production applications and is not supported. For details, including setup instructions, see the `README.txt` file and the `samples-license.txt` file in the `Samples` directory of the zip file.

4.0   Developing Applications For the MarkLogic Add-in for Word

This chapter describes some techniques for building XQuery applications that communicate with the MarkLogic Add-in for Word, and includes the following section:

- JavaScript Library
- XQuery Libraries
-

4.1   JavaScript Library

The JavaScript library is used to communicate beteen a MarkLogic Server application and Microsoft Word. It has functions to create basic building-blocks in a Microsoft Word document. For details on the JavaScript library, see the JavaScriptDoc in the `docs/jsdocs` directory of the installation zip package.

4.2   XQuery Libraries

When you create a MarkLogic Server application that communicates with Word, you many functions from the large MarkLogic Server XQuery library to choose from. Notably, there are two XQuery libraries that have functions directly useful for Word-based applications:

- The ZIP Package library: `package.xqy`
- The WordProcessingML library: `word-processing-ml.xqy`

5.0   Technical Support

Mark Logic provides technical support according to the terms detailed in your Software License Agreement. For evaluation licenses, Mark Logic may provide support on an "as possible" basis.

We invite you to visit our support website at http://support.marklogic.com to access our full suite of documentation and help materials.

If you have questions or comments, you may contact Mark Logic Technical Support at the following email address:

>   support@marklogic.com

If reporting a query evaluation problem, please be sure to include the sample XQuery code.