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# MarkLogic Server

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## Getting Started With MarkLogic Server

Release 3.2  
May, 2007

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## 1.0 Introduction

MarkLogic Server is a powerful software solution for harnessing your digital content base. MarkLogic Server enables you to build complex applications that interact with large volumes of XML, SGML, HTML and other popular content formats. MarkLogic Server's unique architecture ensures that your applications are both scalable and high-performance, delivering query results at search-engine speeds while providing transactional integrity over the underlying content repository.

### 1.1 Objectives

This document describes how to get started using MarkLogic Server on your system.

### 1.2 Audience

This document is intended for a technical audience, specifically an IT staff with experience in XML.

### 1.3 Scope

This guide explains basic procedures to get started using MarkLogic Server on your system. This document is applicable to the following platforms:

- Microsoft Windows XP SP2\*, Microsoft Windows 2003 Server (x86)
- Windows 2003 Server 64-bit Edition (x64)
- Sun Solaris 8, 9, and 10 (64-bit SPARC)
- Sun Solaris 10 (x64)
- Red Hat Enterprise Linux 3.0 and 4.0 (x86)
- Red Hat Enterprise Linux 3.0 and 4.0 (x64)

\* Microsoft Windows XP is supported for development only.

This document only explains how to get started using the software, not how to install the software. For instructions on installing the software, see the *Installation Guide*.

### 1.4 Requirements

This document assumes that you have successfully installed MarkLogic Server on your system. In addition, this document assumes that you have accepted the Mark Logic License Agreement. Both a successful installation and acceptance of the license agreement are required before using the software.

## 2.0 Procedures

This section describes the following procedures to get started using MarkLogic Server on your system:

- [Exploring the Use Cases](#)
- [Creating a New Server](#)
- [Building an XQuery Application](#)

Be sure to complete each procedure in the order presented.

### 2.1 Exploring the Use Cases

As part of the XQuery standard, the W3C working group has assembled a set of use cases that demonstrate how XQuery can be used to accomplish a variety of sample tasks. As part of its installation process, MarkLogic Server sets up a server environment that incorporates working demonstrations of these use cases. The use cases provide an excellent starting point for familiarizing yourself with the XQuery language and with some important aspects of MarkLogic Server.

To explore the use cases, complete the following steps:

1. Go to the following URL:

<http://localhost:8000/>

2. Click the “Load source XML into database” link at the top left frame.

The confirmation message displays in the top right frame.

3. View the following list of use cases on the left:

- Exemplars
- Tree
- Sequence
- Relational
- SGML
- String Search
- Namespace
- Recursive
- Strong

At this point, you have different options to explore the use cases. We recommend you use the following procedures as examples to maximize your experience with the use cases:

- [Viewing the Source XML](#)
- [Viewing a Use Case](#)
- [Editing a Use Case](#)

You may complete these procedures in any order.

### 2.1.1 Viewing the Source XML

**Note:** This procedure focuses on the first use case topic, “Exemplars.” You may view the source XML for any of the use cases.

To view the source XML, complete the following steps:

1. Click on the “1.0 Source XML” link in the left frame.
2. View the source code in the XQuery Source Window.
3. Scroll to the bottom of your XQuery Source Window and click Submit.
4. View the source XML at the bottom in the XQuery Results window.

### 2.1.2 Viewing a Use Case

**Note:** This procedure focuses on the first use case in “Exemplars.” You may view any use case in other topics as well.

To view the use case, complete the following steps:

1. Click on the “1.1 Value constraints” link in the left frame.
2. View the comment in the XQuery Source window:  
“Lists books published by Addison-Wesley after 1991 including their year and title.”
3. Scroll to the bottom of your XQuery Source Window.

4. Note that your current mode is one of the following:

- Query generates XML ([Switch to XHTML](#))
- Query generates XHTML ([Switch to XML](#))

If your query generates XML, then it displays the information with XML tags. If your query generates XHTML, then it displays the information in an easy-to-read table format.

5. Determine whether to view your query results in XML or XHTML mode.

To view query results in XML, be sure to use a browser capable of displaying XML. Internet Explorer or Firefox, for example, can display XML directly while some browsers, like older versions of Netscape Navigator, cannot.

6. Keep your mode as-is, or switch modes by clicking the appropriate link.

7. Click Submit.

8. View your results.

You may toggle between XML and XHTML modes as needed. If you switch modes, however, be sure to resubmit the query to see the new results.

The following example shows the results in XHTML:

**Use cases**  
[Load source XML into database](#)

**1 Exemplars**  
[1.0 Source XML](#)  
[1.1 Value constraints](#)  
[1.2 Element restructuring](#)  
[1.3 Nested query](#)  
[1.4 Nested grouping](#)  
[1.5 Join by title](#)  
[1.6 Element range](#)  
[1.7 Result ordering](#)  
[1.8 Tag-value constraints](#)  
[1.9 Text search](#)  
[1.10 Minimum value](#)  
[1.11 Element structure](#)  
[1.12 Deep Equal](#)

**2 Tree**  
[2.0 Source XML](#)  
[2.1 Table of contents](#)

**XQuery Source**

```
(:
:: (Q1.1)
:: List books published by Addison-Wesley after 1991,
:: including their year and title.
::
::)
<table width="100%">
<tr>
<td class="title" colspan="2"> Use case Q1.1: published since 1991</td>
</tr>
<tr>
<th align="left">Title</th>
```

**Use case Q1.1: published since 1991**

Title	Publication Year
TCP/IP Illustrated	1994
Advanced Programming in the Unix environment	1992

### 2.1.3 Editing a Use Case

**Note:** This procedure focuses on the first use case in “Exemplars.” You may edit any use case in the list.

To edit a use case, complete the following steps:

1. Click on the “1.1 Value constraints” link.
2. View the source code in the XQuery Source window.
3. Change the following source from:

```
where $b/publisher = "Addison-Wesley" and $b/@year > 1991
```

to:

```
where $b/publisher = "Addison-Wesley" and $b/@year > 1993
```

4. Check your current mode.

If you are in XML mode, you do not need to make other changes. However, if you are in XHTML mode, then you also need to change the table header to display the correct year. Change the following source from:

```
<td class="title" colspan="2"> Use case Q1.1: published since 1991 </td>
```

to:

```
<td class="title" colspan="2"> Use case Q1.1: published since 1993 </td>
```

This change ensures that the table header matches the new query results.

5. Click Submit.
6. View the new query results.

**Use cases**

[Load source XML into database](#)

**1 Exemplars**

- [1.0 Source XML](#)
- [1.1 Value constraints](#)
- [1.2 Element restructuring](#)
- [1.3 Nested query](#)
- [1.4 Nested grouping](#)
- [1.5 Join by title](#)
- [1.6 Element range](#)
- [1.7 Result ordering](#)
- [1.8 Tag-value constraints](#)
- [1.9 Text search](#)
- [1.10 Minimum value](#)
- [1.11 Element structure](#)
- [1.12 Deep Equal](#)

**2 Tree**

- [2.0 Source XML](#)
- [2.1 Table of contents](#)

**XQuery Source**

```
(:
:: (Q1.1)
:: List books published by Addison-Wesley after 1991,
:: including their year and title.
::
::)
<table width="100%">
<tr>
<td class="title" colspan="2"> Use case Q1.1: published since 1993</td>
</tr>
<tr>
<th align="left">Title</th>
<th align="left">Publication Year</th>
</tr>
```

**Use case Q1.1: published since 1993**

Title	Publication Year
TCP/IP Illustrated	1994

**Note:** You may change the source as much as you like. Explore and customize each use case as thoroughly as possible. MarkLogic Server reverts to the original source when you go to the next use case.

**2.2 Creating a New Server**

To create a new server, complete the following steps:

1. Open a new browser.
2. Go to the following URL:  
<http://localhost:8001/>
3. Log in with your admin username and password.
4. Click the Groups icon on the left.
5. Click on the Default icon within the Groups branch.
6. Click on the App Servers icon within the Default group.
7. Click the Create HTTP tab.
8. Go to the HTTP Server Name field and enter TestServer.

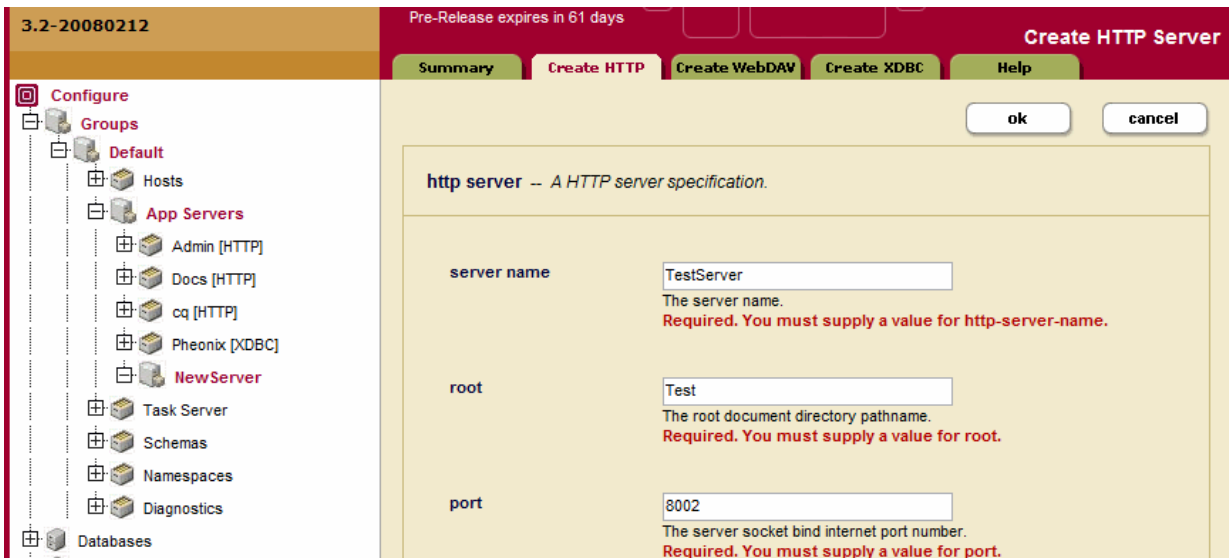
This will be the name that the admin interface uses to reference your server on display screens and in user interface controls.

9. Go to the Root directory field and enter Test.

By default, the software looks for this directory in your MarkLogic Server program directory, as specified in your installation guide. You may also specify an absolute path (such as `C:\MarkLogicFiles\Test` on a Windows platform).

10. Go to the Port field and enter 8002.

The following screen shows an HTTP server with these values:



11. Scroll down to security and click “application-level”.
12. Choose an admin user (admin) as the Default User.
13. Leave the privilege field blank.

The following screen shows an HTTP server with these values

The screenshot shows a configuration panel with three sections:

- authentication**: A dropdown menu is set to "application-level". Below it is the text: "The authentication scheme to use for this server".
- default user**: A dropdown menu is set to "admin (admin)". Below it is the text: "The user used as the default user in application level authentication. Using the admin user as the default user is equivalent to turning security off."
- privilege**: An empty dropdown menu. Below it is the text: "The privilege restricting access to the server."

14. Scroll to the top or bottom and click OK.
15. See that TestServer is added to the HTTP Server branch.

### 2.3 Building an XQuery Application

To build an XQuery application, complete the following steps:

1. Use the following table to locate your MarkLogic Server program directory:

Platform	Program Directory
Microsoft Windows	C:\Program Files\MarkLogic
Red Hat Linux	/opt/MarkLogic
Sun Solaris	/opt/MARKlogic

2. Go to this program directory and create a new directory called Test.
3. This Test directory is the root directory that you just configured for your new HTTP server.
4. Open a text editor and create a new file called `load.xqy` in the Test directory.

5. Copy and save the following code into this `.xqy` file:

```
xmmp:document-insert("books.xml",
  <books xmlns="http://www.marklogic.com/ns/gs-books">
    <book bookid="1">
      <title>A Quick Path to an Application</title>
      <author>
        <last>Smith</last>
        <first>Jim</first>
      </author>
      <publisher>Scribblers Press</publisher>
      <isbn>1494-3930392-3</isbn>
      <abstract>This book describes in detail the power of how
to use XQuery to build powerful web applications that are built
on the MarkLogic Server platform.</abstract>
    </book>
  </books>
),

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Database loaded</title>
  </head>

  <body>
    <b>Source XML Loaded</b>
    <p>The source XML has been successfully loaded into the
database</p>
  </body>
</html>
```

6. Create another file called `dump.xqy` in the Test directory.

## 7. Copy and save the following code into this .xqy file:

```
default element namespace="http://www.w3.org/1999/xhtml"
declare namespace bk="http://www.marklogic.com/ns/gs-books"

<html>
  <head>
    <title>Database dump</title>
  </head>
  <body>
    <b>XML Content</b>
    {
      for $book in doc("books.xml")/bk:books/bk:book
      return
      <pre>
        Title: { $book/bk:title/text() }
        Author: { ($book/bk:author/bk:first/text(), " ",
                  $book/bk:author/bk:last/text()) }
        Publisher: { $book/bk:publisher/text() }
      </pre>
    }
    <a href="update-form.xqy">Update Publisher</a>
  </body>
</html>
```

8. Create another file called `update-form.xqy` in the Test directory.
9. Copy and save the following code into this `.xqy` file:

```
default element namespace="http://www.w3.org/1999/xhtml"
declare namespace bk="http://www.marklogic.com/ns/gs-books"

<html>
  <head>
    <title>Change Publisher</title>
  </head>
  <body>
    {
      let $book := doc("books.xml")/bk:books/bk:book[1]
      return
      <form action="update-write.xqy">
        <input type="hidden" name="bookid" value="{ $book/
@bookid }"/>
        <p><b>
Change publisher for book <i>{ $book/bk:title/text() }</i>:
        </b></p>
        <input type="text" name="publisher"
          value="{ $book/bk:publisher/text() }"/>
        <input type="submit" value="Update publisher"/>
      </form>
    }
  </body>
</html>
```

10. Create another file called `update-write.xqy` in the Test directory.
11. Copy and save the following code into this `.xqy` file:

```
default element namespace="http://www.w3.org/1999/xhtml"
declare namespace bk="http://www.marklogic.com/ns/gs-books"

define function updatePublisher()
{
  if (doc("books.xml")) then
    let $bookid := xdmp:get-request-field("bookid")
    let $publisher := xdmp:get-request-field("publisher")
    let $b := doc("books.xml")/bk:books/bk:book[@bookid =
    $bookid]
    return
      if ($b) then
        (
          xdmp:node-replace($b/bk:publisher,
            <bk:publisher>{ $publisher }</bk:publisher>)
          ,
          xdmp:redirect-response("dump.xqy")
        )
      else
        <span>Could not locate book with bookid { $bookid }.</span>
    else
      <span>Unable to access parent XML document.</span>
}

<html>
  <head>
    <title>Update In Process</title>
  </head>

  <body>
    Attempting to complete update and redirect browser to detail
    page.
    <p>
      If you are seeing this page, either the redirect has failed
      or the update has failed. The update has failed if there is
      a reason provided below:
      <br/>
      { updatePublisher() }
    </p>
  </body>
</html>
```

12. Confirm that you have the following new files in your Test directory:
  - `load.xqy`
  - `dump.xqy`
  - `update-form.xqy`
  - `update-write.xqy`
13. Confirm that all files end with the `.xqy` extension, not the `.txt` extension.
14. Using these files, continue to the following procedures:
  - [Loading the Source XML](#)
  - [Generating a Simple Report](#)
  - [Submitting New Information](#)

Be sure to complete these procedures in order.

### 2.3.1 Loading the Source XML

To load the source XML, complete the following procedure:

Open a new browser.

Go to the following URL:

<http://localhost:8002/load.xqy>

MarkLogic Server is running the new `load.xqy` file.

View the following confirmation message:

**Source XML Loaded**

The source XML has been successfully loaded into the database

### 2.3.2 Generating a Simple Report

To generate a simple report from the newly loaded XML, complete the following steps:

1. Go to the following URL:

<http://localhost:8002/dump.xqy>

MarkLogic Server is running the new `dump.xqy` file.

2. View the new HTML-compatible report:

**XML Content**

Title: A Quick Path to an Application  
Author: Jim Smith  
Publisher: Scribblers Press

[Update Publisher](#)

### 2.3.3 Submitting New Information

To submit new information to the database, complete the following steps:

1. Go to the following URL:

<http://localhost:8002/update-form.xqy>

MarkLogic Server is running the new `update-form.xqy` file.

2. View the simple form to update a publisher:

**Change publisher for book *A Quick Path to an Application*:**

3. Enter “Menlo Books” as the new publisher.
4. Click Update publisher.

This action automatically calls `update-write.xqy` to update the publisher element in the database.

5. View the new XML content.

**XML Content**

Title: A Quick Path to an Application  
Author: Jim Smith  
Publisher: Menlo Books

[Update Publisher](#)

**Note:** You can continue exploring your new files or write your own code to create new XQuery applications.

## 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.

For registered customers, we invite you to visit our support website at <http://support.marklogic.com> to access our full suite of documentation and help materials. For all customers, including community licensed customers, visit the Mark Logic Developer’s site at <http://developer.marklogic.com>, which includes full product documentation, downloads, and developer community open-source projects.

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

[support@marklogic.com](mailto:support@marklogic.com)

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