
MarkLogic Server

Getting Started With MarkLogic Server

MarkLogic 5
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1.0 Introduction to MarkLogic Server

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. The unique architecture of MarkLogic Server 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 Requirements

Before using the procedures in this guide, you must first install MarkLogic Server, including accepting the MarkLogic License Agreement and creating the initial MarkLogic user. Both a successful installation and acceptance of the license agreement are required before using the software. For instructions on installing the software, including a list of supported platforms, see the *Installation Guide*.

1.2 About this Document

This document describes how to get started using MarkLogic Server on your system. It introduces some concepts of MarkLogic Server and XQuery, and is intended for first-time users of MarkLogic Server. For more detail on other aspects of MarkLogic Server, see the following documentation, available through the support web site and through <http://developer.marklogic.com/>:

Documentation	Description
<i>MarkLogic 5 Release Notes</i>	Contains a summary of new features, upgrade compatible information, and known issues.
<i>Installation Guide</i>	Provides procedures for installing MarkLogic Server.
<i>Administrator's Guide</i>	Provides procedures for administrative tasks such as creating servers, creating databases, backing up databases, creating users, setting up your security policy, and so on.
<i>Application Builder Developer's Guide</i>	Provides step-by step information on using Application Builder to build a search application, and also provides information on customizing applications built with Application Builder.
<i>Application Developer's Guide</i>	Provides procedures, methodologies, and conceptual information about general MarkLogic Server application development tasks.
<i>Search Developer's Guide</i>	Provides procedures, methodologies, and conceptual information about search-based application development tasks.

Documentation	Description
<i>Content Processing Framework Guide</i>	Provides an introduction to the Content Processing Framework and procedures for installing the default content processing framework.
<i>Understanding and Using Security Guide</i>	Provides information on the role-based security model in MarkLogic Server.
<i>Query Performance and Tuning Guide</i>	Provides performance-related information that is useful to application developers and administrators.
<i>Scalability, Availability, and Failover Guide</i>	Provides information on large-scale system architecture, clustering, availability, and details on setting up both local-disk and shared-disk failover.
<i>MarkLogic XQuery and XSLT Function Reference</i>	API documentation for the MarkLogic built-in and module extensions to the XQuery standard functions, as well as API documentation for the W3C functions implemented in MarkLogic Server.
XCC Javadoc and .Net C# API Documentation	API documentation for the MarkLogic XML Contentbase Connector for Java API (XCC/J) and .Net XCC C# API documentation.
<i>XCC Developer's Guide</i>	An overview of the what you can do with the XCC libraries, examples of how to use XCC, and an overview of the sample applications included with XCC.
<i>XQuery and XSLT Reference Guide</i>	A condensed overview of the XQuery language, including information on the three XQuery dialects in MarkLogic Server. This book does include some syntax information, although it is primarily intended as in introduction and quick-reference to the language, not as a comprehensive reference.







2.0 MarkLogic Server Entry Page

The MarkLogic Server Entry Page provides access to administrative, development, and other MarkLogic Server resources.








In your Start menu, go to MarkLogic Server and select Use MarkLogic Server, or enter the following URL (substitute your hostname if MarkLogic is not running on your local machine):

<http://localhost:8000/>


Use

 <p>Load Content Load content into a new or existing database using Information Studio.</p> <p>Load new content →</p>	 <p>Build an Application Create a customized search application with Application Builder.</p> <p>Build an application →</p>	 <p>Create Code Develop, test, and profile XQuery and XSLT in your browser.</p> <p>Begin coding →</p>
 <p>Manage Configuration Inspect configuration and copy settings between environments with Configuration Manager.</p> <p>Explore Configuration →</p>	 <p>Monitor Status Visualize real-time status measures using the Monitoring Dashboard.</p> <p>View status →</p>	 <p>Administer Update low-level settings and security set-up in the Admin Interface.</p> <p>Administer →</p>

Integrate

<p>Big Data and Cloud Leverage MarkLogic for real-time applications and batch analytics in virtualized environments.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;">  <p>Connector for Hadoop™ Perform Big Data analytics on MarkLogic data with Hadoop MapReduce.</p> <p>Download →</p> </div> <div style="border: 1px solid #ccc; padding: 5px;">  <p>MarkLogic Cloud Services Deploy MarkLogic Server into a cloud environment.</p> <p>Get started →</p> </div>	<p>Monitoring</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;">  <p>Plugin for Nagios® Integrate MarkLogic status monitoring into Nagios.</p> <p>Download →</p> </div> <div style="border: 1px solid #ccc; padding: 5px;">  <p>Smart Plug-in for HP Operations Manager® Integrate MarkLogic status monitoring into Operations Manager.</p> <p>Learn more →</p> </div>	
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;">  <p>Connector to SharePoint® Mirror content from SharePoint to MarkLogic for search, analytics, and delivery.</p> <p>Get started →</p> </div>	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;">  <p>Toolkits for Office® Build rich information applications for Microsoft Office®.</p> <p>Get started →</p> </div>	<div style="border: 1px solid #ccc; padding: 5px;">  <p>XCC for Java and .NET Connect to MarkLogic Server from Java or .NET applications.</p> <p>Download for Java →</p> <p>Download for .NET →</p> </div>

Explore

 <p>Geospatial Integrate full-text and location-based search to unlock geospatial information within your content. Find</p>	<p>Advanced Analytics Discover and explore relationships between concepts using MarkLogic's built-in co-occurrence analysis</p>
---	--

Learn

Guides

- [Getting Started](#)
- [Application Development](#)
- [Search Development](#)
- [Administration](#)
- [More →](#)

References

- [XQuery Module and Built-in API](#)
- [Query Performance and Tuning](#)
- [Scalability, Availability, and Failover](#)
- [Content Processing Framework](#)
- [More →](#)

MarkLogic Server 5.0

- [Release Notes](#)
- [Installation Guide](#)

[Download all](#)

Support

[+ Create a new support case](#)

[Generate diagnostic information →](#)

For additional support information please visit our [support site →](#)

Developer Mailing List

- [sentiments and marklogic](#) (1)
Today 10:31 am
- [Directory exists but xdm:directory-delete return xdm:doc-n...](#) (7)
Today 6:19 am
- [problem with pipeline conversion of docx](#) (2)
Oct 20, 2011
- [results returning faster when using string instead of intege...](#) (5)
Oct 20, 2011
- [How to get different facet counts for different searchable-e...](#) (17)
Oct 18, 2011
- [search:search api and range constraint for last modified dat...](#) (1)
Oct 17, 2011

[More →](#)

Subscribe to the MarkLogic

2.1 Use

This section includes links to the following applications that are part of your MarkLogic Server installation:

Category	Description
Load Content	This link launches Information Studio. For details, see the <i>Information Studio Developer's Guide</i> .
Build an Application	This link launches Application Builder. For details, see the <i>Application Builder Developer's Guide</i> .
Create Code	This link launches Query Console. For details, see the <i>Query Console User's Guide</i> .
Manage Configuration	This link launches the Configuration Manager. For details, see Using the Configuration Manager in the <i>Administrator's Guide</i> .
Monitor Status	This link launches the Monitoring Dashboard. For details, see the <i>Monitoring MarkLogic Guide</i> .
Administer	This link launches the Admin Interface. For details, see the <i>Administrator's Guide</i> .

2.2 Integrate

This section describes various connectors and tools that integrate with MarkLogic Server, including monitoring tool integrations that are described in the *Monitoring MarkLogic Guide*.

2.3 Explore

This section includes external links to various MarkLogic applications, including the Oscars Explorer application. For details, see [Using the Oscars Sample Application](#) in the *Application Builder Developer's Guide*.

2.4 Community

This section includes links to various projects on the MarkLogic Developer Community (developer.marklogic.com) home page. These include open-source tools such as an Eclipse plug-in, Record Loader, XQSync, and many other useful projects.

2.5 Learn

This section includes links to the documentation and other resources available to help you learn about MarkLogic Server, including the following:

Category	Description
Guides and Reference	These sections include links to the various procedural and reference documentation for MarkLogic Server.
MarkLogic 5	This section includes links to the release-specific documentation for MarkLogic Server.
Support	This section includes a link to the MarkLogic support site and links to open a support case and get diagnostic information about your installation.
Developer Mailing List	This section includes links to various topics made available through the MarkMail application.

3.0 Getting Started with MarkLogic Server Applications

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

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

Be sure to complete each procedure in the order presented.

3.1 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 provides a workspace for Query Console containing 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 (substitute your hostname if MarkLogic is not running on your local machine):

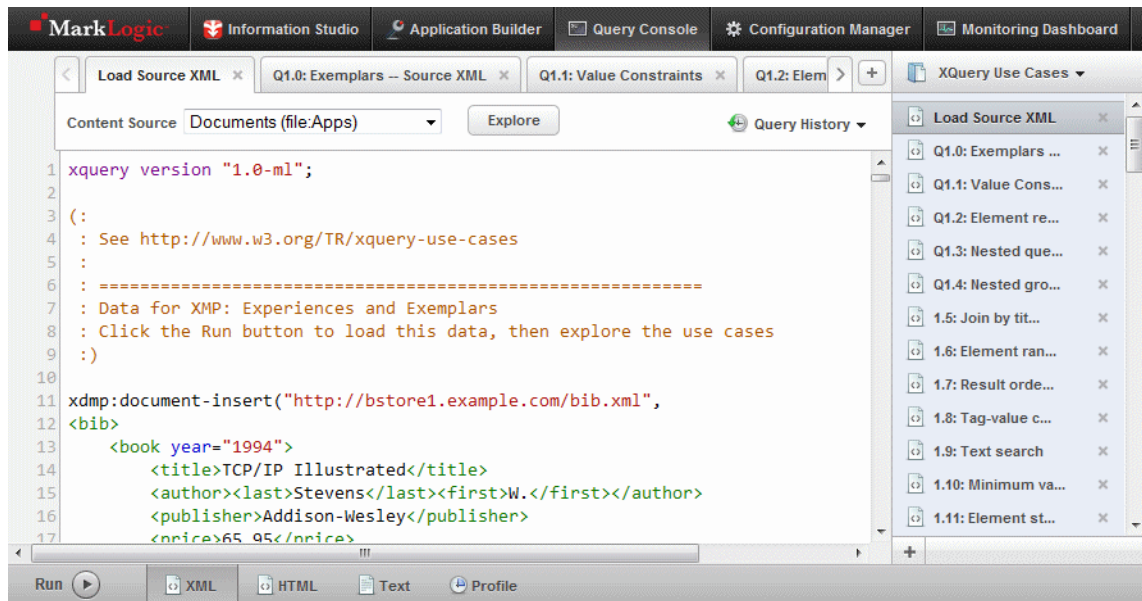
<http://localhost:8000/>

2. Click the Query Console button in the top navigation bar.
3. In Query Console, click the Workspace link (towards the upper right corner of Query Console) and select Import...
4. Navigate to `<marklogic-dir>/Samples/w3c-use-cases.xml`.

Note: If MarkLogic is running on the same machine as your browser, you can navigate to this directory (for example, `c:/Program Files/MarkLogic/Samples` on Windows or `/opt/MarkLogic/Samples` on Linux), but if MarkLogic is installed on a remote server, then you must copy this file from the server to the machine in which your browser is running, and then navigate to the directory where you copied the file.

5. Click Import. The W3C XQuery use cases are imported into Query Console.

6. Click Load Source XML query buffer in the workspace pane to display the query into Query Console.



7. Click the Run button.

A confirmation message displays indicating the documents have been loaded.

8. The use cases are divided into the following categories, with each category having several queries:

- 1.0: Exemplars
- 2.0: Tree
- 3.0: Sequence
- 4.0: Relational
- 5.0: SGML
- 6.0: String Search
- 7.0: Namespace
- 8.0: Recursive
- 9.0: 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 can complete these procedures in any order.

3.1.1 Viewing the Source XML

Note: This procedure focuses on the first use case topic, “1.0: Exemplars.” You can view the source XML for any of the use cases.

To view the source XML, complete the following steps:

1. Click the 1.0 Source XML query buffer in the workspace pane to display the query into Query Console.
2. View the source code in the query editor tab.
3. Click Run.
4. View the source XML at the bottom in the XQuery Results pane.

3.1.2 Viewing a Use Case

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

To view the use case, complete the following steps:

1. Click the 1.1 Value constraints query buffer in the workspace pane to display the query into Query Console.
2. View the source code in the query editor tab.

```
Lists books published by Addison-Wesley after 1991 including their year  
and title.
```

Notice that XQuery comments are wrapped in “smiley faces”: (: comment :)

3. Click Run.
4. View your results.

The following shows the results:

The screenshot displays the MarkLogic Query Console interface. At the top, there are navigation tabs for MarkLogic, Information Studio, Application Builder, Query Console, Configuration Manager, and Monitoring Dashboard. The main workspace shows a query editor with the following XQuery code:

```

1 (:
2 :: (Q1.1)
3 :: List books published by Addison-Wesley after 1991
4 :: including their year and title.
5 ::
6 :)
7 <bib>
8 {
9   for $b in doc("http://bstore1.example.com/bib.xml")/bib/book
10  where $b/publisher = "Addison-Wesley" and $b/@year > 1991
11  return

```

Below the query editor, there are buttons for Run, XML, HTML, Text, and Profile. The results pane shows the following XML output:

```

<bib>
  <book year="1994">
    <title>TCP/IP Illustrated</title>
  </book>
  <book year="1992">
    <title>Advanced Programming in the Unix environment</title>
  </book>
</bib>

```

On the right side, there is a panel titled "XQuery Use Cases" with a list of use cases, including "Load Source XML", "Q1.0: Exemplars ...", "Q1.1: Value Cons...", "Q1.2: Element re...", "Q1.3: Nested que...", "Q1.4: Nested gro...", "1.5: Join by tit...", "1.6: Element ran...", and "1.7: Results".

3.1.3 Editing a Use Case

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

To edit a use case, complete the following steps:

1. Click the 1.1 Value constraints query buffer in the workspace pane to display the query into Query Console.
2. View the source code in the query editor tab.

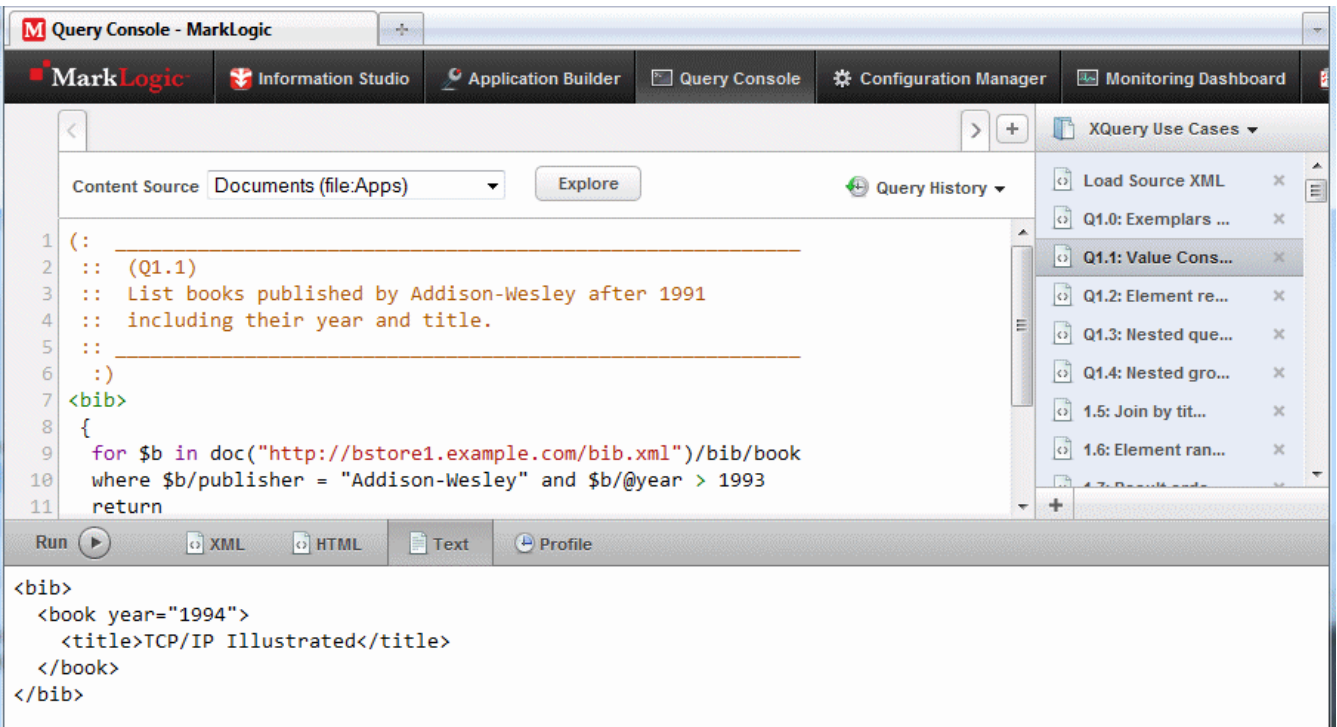
3. Change the following source from:

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

to:

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

4. Click Run.
5. View the new query results.



The screenshot shows the MarkLogic Query Console interface. The top navigation bar includes 'MarkLogic', 'Information Studio', 'Application Builder', 'Query Console', 'Configuration Manager', and 'Monitoring Dashboard'. The main workspace is divided into several sections:

- Content Source:** Set to 'Documents (file:Apps)' with an 'Explore' button.
- Query Editor:** Contains an XQuery with the following code:

```
1 (:  
2 :: (Q1.1)  
3 :: List books published by Addison-Wesley after 1991  
4 :: including their year and title.  
5 ::  
6 :)  
7 <bib>  
8 {  
9   for $b in doc("http://bstore1.example.com/bib.xml")/bib/book  
10  where $b/publisher = "Addison-Wesley" and $b/@year > 1993  
11  return
```
- Query History:** A list of saved queries, including 'Load Source XML', 'Q1.0: Exemplars ...', 'Q1.1: Value Cons...', 'Q1.2: Element re...', 'Q1.3: Nested que...', 'Q1.4: Nested gro...', '1.5: Join by tit...', and '1.6: Element ran...'. 'Q1.1: Value Cons...' is currently selected.
- Run Controls:** A 'Run' button and output format options: 'XML', 'HTML', 'Text', and 'Profile'.
- Results:** The output of the query is displayed as XML:

```
<bib>  
<book year="1994">  
  <title>TCP/IP Illustrated</title>  
</book>  
</bib>
```

Note: You may change the source as much as you like. Explore and customize each use case as thoroughly as possible. You can reload the workspace from the Sample directory to restore it.

3.2 Creating a New App Server

In this section, you create a new HTTP App Server. An App Server is used to evaluate XQuery code against a MarkLogic database and return the results to a browser. This App Server uses the Documents database, which is installed as part of the MarkLogic Server installation process. In “Sample XQuery Application” on page 15, you use this App Server to run a sample XQuery application.

To create a new App Server, complete the following steps:

1. Open a new browser window or tab.
2. Open the Admin Interface by navigating to the following URL (substitute your hostname if MarkLogic is not running on your local machine):

<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.

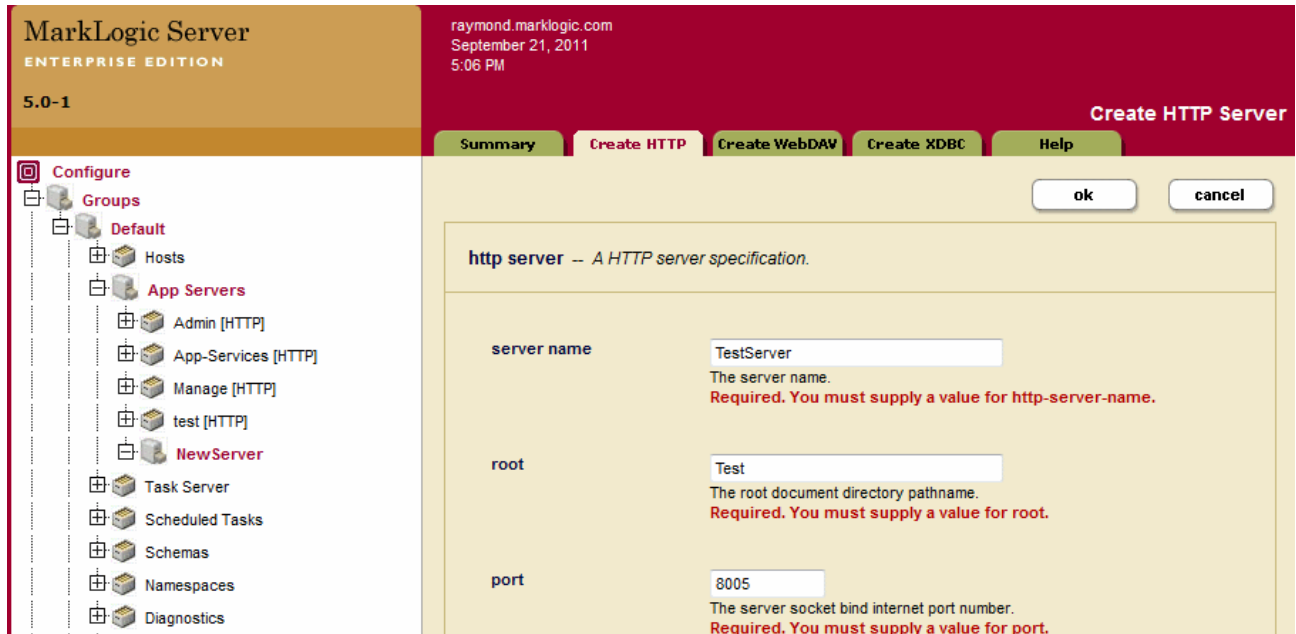
This is the name that the Admin Interface uses to reference your server on display screens and in user interface controls.

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 the *Installation Guide*. You can also specify an absolute path (such as `C:\MarkLogicFiles\Test` on a Windows platform or `/space/test` on a Linux platform).

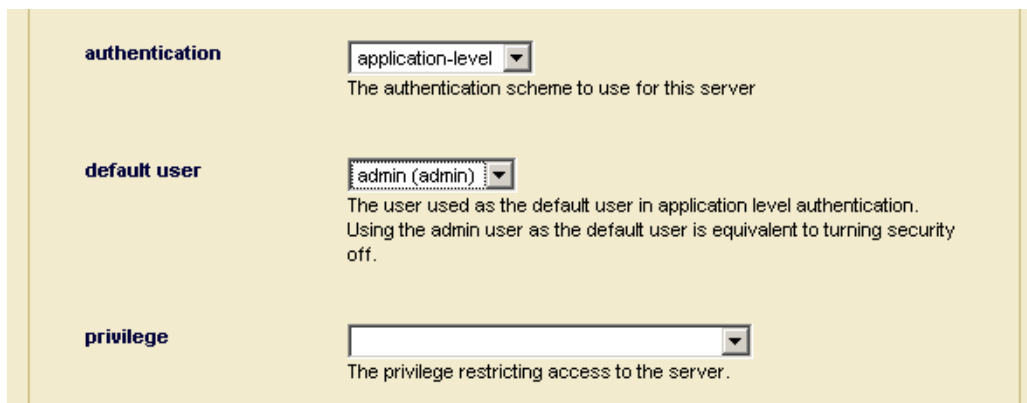
10. Go to the Port field and enter 8005.

The following screen shows an HTTP server with these values:



11. Scroll down to Authentication and select `application-level`.
12. Choose an admin user (it has the word `admin` in parenthesis) as the Default User.
13. Leave the privilege field blank.

The following screen shows an HTTP server with these values



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

3.3 Sample XQuery Application

In this section, you create a sample XQuery application. This is a simple browser-based application that allows you to load and modify some data.

To create and run the sample XQuery application, complete the following steps:

1. Use the following table to locate your MarkLogic Server installation directory (*<marklogic-dir>*):

Platform	Installation Directory
Microsoft Windows	C:\Program Files\MarkLogic
Red Hat Linux	/opt/MarkLogic
Sun Solaris	/opt/MARKlogic
Mac OS X	~/Library/MarkLogic

2. Go to this installation directory (*<marklogic-dir>*) 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:

```
xquery version "1.0-ml";
(: load.xqy :)
xdmp: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:

```
xquery version "1.0-ml";
(: dump.xqy :)
declare namespace bk = "http://www.marklogic.com/ns/gs-books";

<html xmlns="http://www.w3.org/1999/xhtml">
  <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:

```
xquery version "1.0-m1";
(: update-form.xqy :)
declare namespace bk="http://www.marklogic.com/ns/gs-books";

<html xmlns="http://www.w3.org/1999/xhtml">
  <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:

```
xquery version "1.0-ml";
(: update-write.xqy :)
declare namespace bk="http://www.marklogic.com/ns/gs-books";

declare function local: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 xmlns="http://www.w3.org/1999/xhtml">
  <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/>
      { local: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.

3.3.1 Loading the Source XML

To load the source XML, complete the following procedure:

1. Open a new browser window or tab.
2. Go to the following URL (substitute your hostname if MarkLogic is not running on your local machine):

<http://localhost:8005/load.xqy>

MarkLogic Server runs the new `load.xqy` file.

3. View the following confirmation message:

Source XML Loaded

The source XML has been successfully loaded into the database

3.3.2 Generating a Simple Report

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

1. Go to the following URL (substitute your hostname if MarkLogic is not running on your local machine):

<http://localhost:8005/dump.xqy>

MarkLogic Server runs the `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](#)

3.3.3 Submitting New Information

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

1. Go to the following URL (substitute your hostname if MarkLogic is not running on your local machine):

<http://localhost:8005/update-form.xqy>

MarkLogic Server runs 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*:

<input type="text" value="Scribblers Press"/>	<input type="button" value="Update publisher"/>
---	---

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

This action automatically calls `update-write.xqy`, which updates the publisher element in the database, and then redirects the browser to `dump.xqy` which displays the updated book information.

XML Content

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

[Update Publisher](#)

5. (Optional) Continue exploring your new files or write your own code to create new XQuery applications.

4.0 Getting Started with XQuery

This chapter describes how to use Query Console to interactively create and execute XQuery code. This chapter includes the following sections::

- [About Query Console](#)
- [XQuery Mini Tutorial](#)
- [What Next?](#)

4.1 About Query Console

Query Console is an interactive web-based query tool that is bundled with MarkLogic Server. Query Console enables you to write ad-hoc queries and view the results without using .xqy files. You can view the results as HTML, XML, or plain-text output. Query Console is designed for a modern web browser with JavaScript support and XML display.

The examples in this chapter assume you are using Query Console. To learn more about Query Console, see the [Query Console Walkthrough](#) in the *Query Console User's Guide*

4.2 XQuery Mini Tutorial

This section includes the following procedures to demonstrate how to use Query Console to take a closer look at the XQuery code in the modules from “Sample XQuery Application” on page 15:

- [Creating and Inserting a Document into the Database](#)
- [Querying the Document](#)
- [Modifying the Document](#)
- [Adding a New Element to the Document](#)

4.2.1 Creating and Inserting a Document into the Database

This section examines a simple XQuery program that creates a document. First, run the code as follows:

1. Open Query Console in a browser and create a new query.
2. Cut and paste the following code into the XQuery source editor.

```
xquery version "1.0-ml";
xdmp: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>
)
```

3. Click Run. Query Console indicated that your query returned the empty sequence.

Taking a closer look at this code, we see it uses the `xdmp:document-insert` function to insert a `books` node into a document with the URI, `books.xml`. The `books` node is in the `http://www.marklogic.com/ns/gs-books` namespace, which is specified with the following namespace declaration:

```
xmlns="http://www.marklogic.com/ns/gs-books"
```

For details on the use of namespaces, see [Understanding XML Namespaces in XQuery](#) in the *XQuery and XSLT Reference Guide*.

4.2.2 Querying the Document

This section examines a simple XQuery program that queries the document you previously. First, run the code as follows:

1. Create another Query Console query.
2. Cut and paste the following code into Query Console in the new query editor. This code is from the `dump.xqy` module in “Sample XQuery Application” on page 15.

```
xquery version "1.0-ml";
(: dump.xqy :)
declare namespace bk = "http://www.marklogic.com/ns/gs-books";

<html xmlns="http://www.w3.org/1999/xhtml">
  <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>
    }
  </body>
</html>
```

3. Click on the `HTML` button to view the output in HTML.
4. Click Run and examine the results.

Taking a closer look at this query, we see it binds the `bk` prefix to the namespace in which the inserted `books` node resides.

```
declare namespace bk = "http://www.marklogic.com/ns/gs-books";
```

This `bk` prefix can now be used throughout the query to reference the namespace.

The query also defines a `for` clause with an XPath expression that iterates through each child element of the `book` element. Note that the `books` and `book` elements are in the namespace bound by the `bk` prefix:

```
for $book in doc("books.xml")/bk:books/bk:book
```

For details on the `for` clause, see [FLWOR Expressions](#) in the *XQuery and XSLT Reference Guide*.

The following lines include simple XPath expressions that return the text node inside each specified element. Note that each element is in the namespace bound by the `bk` prefix:

```
Title: { $book/bk:title/text() }
Author: { ($book/bk:author/bk:first/text(), " ",
          $book/bk:author/bk:last/text()) }
Publisher: { $book/bk:publisher/text() }
```

For details on XPath, see [XPath Quick Reference](#) in the *XQuery and XSLT Reference Guide*.

4.2.3 Modifying the Document

Create another Query Console query. Cut and paste the following code into the new query to change the text in the publisher element:

```
xquery version "1.0-ml";

declare namespace bk = "http://www.marklogic.com/ns/gs-books";

xdmp:node-replace(doc("books.xml")//bk:publisher,
  <bk:publisher>Pirate's Press</bk:publisher>)
```

After running this query, rerun the query in “Querying the Document” on page 24 and notice the changed content.

4.2.4 Adding a New Element to the Document

Create another query in Query Console. Cut and paste the following code into the new query to add another `book` to the `books` element described in “Creating and Inserting a Document into the Database” on page 23:

```
xquery version "1.0-ml";

declare namespace bk = "http://www.marklogic.com/ns/gs-books";

xdmp:node-insert-child(doc("books.xml")/bk:books,
  <book bookid="2" xmlns="http://www.marklogic.com/ns/gs-books">
    <title>An Alternate Path to an Application</title>
    <author>
      <last>Smith</last>
      <first>Jim</first>
    </author>
    <publisher>Scribblers Press</publisher>
    <isbn>3491-3234352-1</isbn>
    <abstract>This book describes another way to use XQuery to build
powerful web applications that are built on the MarkLogic Server
platform.</abstract>
  </book> )
```

Taking a closer look at this query, we see it uses the `xdmp:node-insert-child` function to insert the `book` element as a child of the existing `books` element. To construct the `book` element in the same namespace as the `books` element, we explicitly declare the inserted `book` element to be in the same namespace as the `books` element:

```
<book bookid="2" xmlns="http://www.marklogic.com/ns/gs-books">
```

After running this query, rerun the query in “Querying the Document” on page 24.

4.3 What Next?

To learn more about MarkLogic Server, take a closer look at the MarkLogic documentation on developer.marklogic.com, including the following:

- For more detail on the XQuery language, see the *XQuery and XSLT Reference Guide*.
- For a complete list of standard XQuery functions and MarkLogic Server enhanced functions, see the *MarkLogic XQuery and XSLT Function Reference*.
- For details on how to build XQuery applications, see the *Application Developer’s Guide* and the *Search Developer’s Guide*.
- For details on the features of Query Console, see *Query Console User’s Guide*.

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