
MarkLogic Server

Getting Started With MarkLogic Server

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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

You must first install MarkLogic Server before following the procedures in this guide. In addition, this document assumes that you have accepted the MarkLogic License Agreement. 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.

The purpose of this document is to explain how to get started using the software. 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>4.2 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.

Documentation	Description
<i>Search Developer's Guide</i>	Provides procedures, methodologies, and conceptual information about search-based application development tasks.
<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 an 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:

The screenshot displays the MarkLogic Server Entry Page, which is organized into four main sections: Use, Learn, Explore, and Community.

- Use:** This section contains three main cards:
 - Load Content:** Load new content into a new or existing database using Information Studio. Includes a '+ Load new content' button.
 - Build an Application:** Create a customized search application based on your content using Application Builder. Includes a '+ Start a new application' button.
 - Manage:** Administer this MarkLogic Server instance. Includes a link to 'Open the Admin Interface' and sub-links for Databases, App Servers, and Security.
- Learn:** This section provides resources for learning about MarkLogic Server:
 - Guides:** Includes links for Getting Started, Application Development, Search Development, and Administration.
 - References:** Includes links for XQuery Module and Built-in API, Query Performance and Tuning, Scalability, Availability, and Failover, and Content Processing Framework.
 - MarkLogic Server 4.2:** Includes links for Release Notes and Installation Guide.
 - Download all:** A button to download all resources.
- Explore:** This section offers various exploration tools and integrations:
 - Geospatial:** Integrate full-text and location-based search to unlock geospatial information within your content.
 - Advanced Analytics:** Discover and explore relationships between concepts using MarkLogic's built-in co-occurrence analysis support.
 - Integrations:** Includes links for MarkLogic Cloud Services, Toolkits for Office, and XCC for Java and .NET.
 - Search:** Search and explore sample content using the Application Builder and the Search API.
- Community:** This section promotes the MarkLogic Developer Community:
 - The The MarkLogic Developer Community:** A place for developers to share, discuss, and meet about MarkLogic Server, XQuery, and XML. Includes links for Download software, Get tutorials and samples, Explore open-source projects, Join a user group, and Catch up on developer news.
 - XQuery Development Tools for Eclipse:** Syntax highlighting, code completion, and built-in MarkLogic Server integration from within the open-source Eclipse IDE.
 - Featured Projects:** Includes links for CQ, RecordLoader, XQMVC, and MLJAM.

On the right side of the page, there is a **Support** section with a '+ Create a new support case' button and a link to 'Generate diagnostic information'. Below this is a **Developer Mailing List** section with a search bar and a list of recent posts, including 'in scope prefixes', 'Build element range indexes', and 'Sharepoint connector for MarkLogic'.

2.1 Use

Category	Description
Load Content	This link launches Information Studio. For details, see the <i>Information Studio Developer's Guide</i> .
Manage	This link launches the Administrator Interface. For details, see the <i>Administrator's Guide</i> .
Build an Application	This link launches Application Builder. For details, see the <i>Application Builder Developer's Guide</i> .

2.2 Explore

Category	Description
Search	This link launches the Oscars Explorer application. For details, see Using the Oscars Sample Application in the <i>Application Builder Developer's Guide</i> .
Featured Samples	This section includes links to various MarkLogic sample applications.
Integrations	This includes links to APIs that enable you to integrate other software with MarkLogic Server.

2.3 Community

Category	Description
MarkLogic Developer Network	This is a link to the MarkLogic Developer Network home page.
Toolkits for Microsoft Office	This section includes links to tools that enable you to build MarkLogic Server applications that integrate with Microsoft Excel, Powerpoint, and Word.
Featured Projects	This section includes links to some of the collaborative open source projects hosted on the MarkLogic Developer Network site.

2.4 Learn

Category	Description
Guides and Reference	These sections include links to the various procedural and reference documentation for MarkLogic Server.
MarkLogic Server 4.2	This section includes links to the release-specific documentation for MarkLogic Server.
Support	This section includes a link to the MarkLogic support site and ????
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 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 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.

3.1.1 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 Query.
4. View the source XML at the bottom in the XQuery Results window.

3.1.2 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 HTML](#))
- Query generates HTML ([Switch to XML](#))

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

5. Determine whether to view your query results in XML or HTML 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 Query.

8. View your results.

You may toggle between XML and HTML 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 HTML:

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

3.1.3 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 HTML 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 Query.
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.

3.2 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.

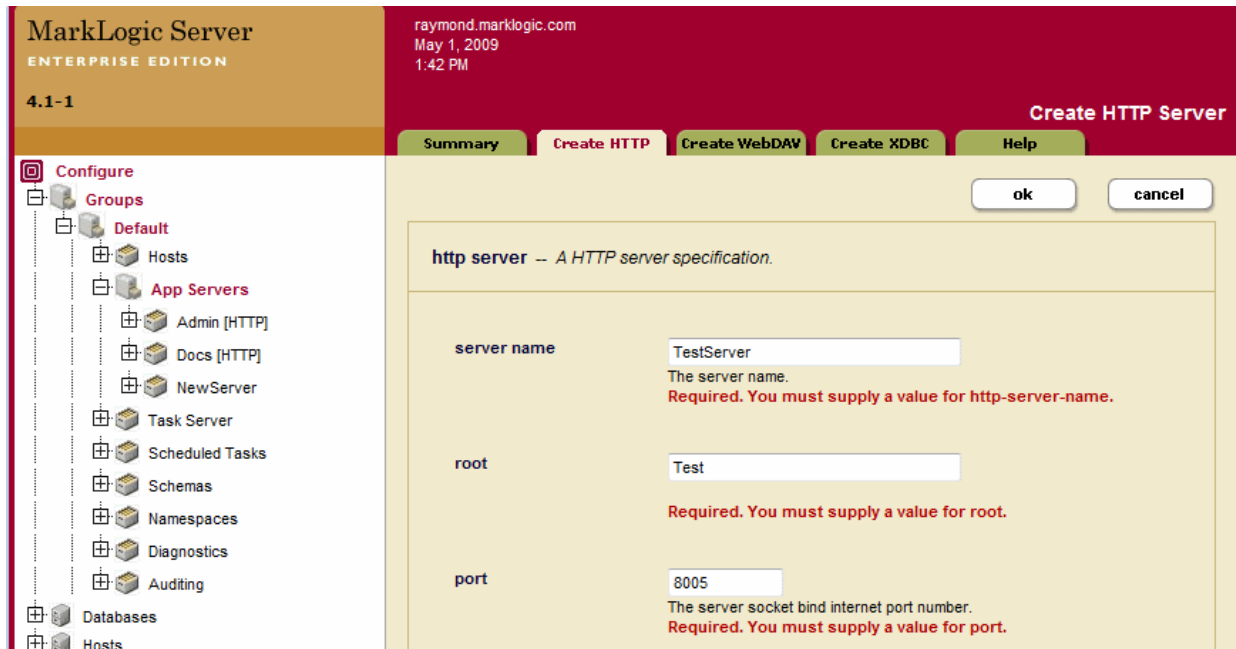
This will be the name that the Admin Interface uses to reference your server on display screens and in user interface controls.

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 8005.

The following screen shows an HTTP server with these values:



11. Scroll down to Authentication 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 window with three sections: **authentication**, **default user**, and **privilege**. Each section has a dropdown menu and a descriptive text below it.

- authentication**: The dropdown is set to "application-level". Below it, the text reads: "The authentication scheme to use for this server".
- default user**: The dropdown is set to "admin (admin)". Below it, the text reads: "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**: The dropdown is empty. Below it, the text reads: "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.

3.3 Sample XQuery Application

To run the sample 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:

```
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-ml";
(: 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:

Open a new browser.

Go to the following URL:

<http://localhost:8005/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

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:

<http://localhost:8005/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](#)

3.3.3 Submitting New Information

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

1. Go to the following URL:

<http://localhost:8005/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.

4.0 Getting Started with XQuery

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

- [About CQ](#)
- [Using CQ](#)
- [XQuery Mini Tutorial](#)
- [What Next?](#)

4.1 About CQ

CQ is an interactive web-based query tool that allows 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. CQ is designed for use with an HTTP App Server instance and a modern web browser with JavaScript support and XML display. CQ is bundled with MarkLogic Server and is also available for download from the MarkLogic Developer Network:

`http://developer.marklogic.com/code/`

CQ is included in the `MarkLogic/Samples/cq` directory and is licensed under the open source Apache 2.0 license. You will also find the source code checked into the `developer.marklogic.com` subversion repository.

4.2 Using CQ

This section describes how to use CQ to execute queries and view the results.

1. Copy the entire `MarkLogic/Samples/cq` directory to the `MarkLogic/Test` directory. This is the root directory used by the `TestServer` App Server you created in “Creating a New Server” on page 13.
2. Open a browser and enter the URL: `http://localhost:8005/cq`

3. In order to use CQ, you must have the privileges assigned to the `cq-basic` role, as a minimum. If your MarkLogic Server is not yet configured with CQ roles, you will see the Security Configuration Problem page below. Click the `install-roles.xqy` link to automatically install the roles.

Note: You must have privileges to install new roles. Otherwise, you will receive a 500 error. In this case, request that your system administrator install the CQ roles and assign the `cq-basic` role to your user account.

Security Configuration Problem

One or more security problems prevent this user (simple) from loading cq. Please use the [admin server](#) to resolve the problems listed below.

The current user is missing certain exec privileges required by cq. The admin user may be able to fix this problem by clicking on this [install-roles.xqy](#) link, and then granting the `cq-basic` role to the simple login.

- <http://marklogic.com/xdmp/privileges/xdmp-add-response-header>
- <http://marklogic.com/xdmp/privileges/xdmp-invoke>
- <http://marklogic.com/xdmp/privileges/xdmp-license-accepted>

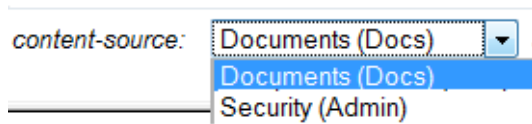
4. Once you have gained access to CQ, you should see a page that looks like the following. In CQ, a *session* is a group of *query buffers*. Each query is displayed in the Current XQuery pane and is saved in a persistent query buffer. The list of query buffers are displayed in the Queries pane on the right, The results of the executed query are displayed below in the Query Results pane.

The screenshot displays the MarkLogic Server CQ interface. At the top, a yellow banner shows 'Current XQuery' and 'cq v4.2-20100614'. Below this, the 'Current XQuery' pane contains the following XQuery code:

```
xquery version "1.0-m1";
(: buffer 1 :)
<p>hello world</p>
```

Below the code pane, there are buttons for 'content-source: Documents (samples)', 'as', 'TEXT', 'XML', 'HTML', and 'Profile'. To the right, the 'Queries (alt) +' pane shows a list of query buffers, each with a number and a description: '1. xquery version "1.0-m1"; (: buffer 1 :)', '2. xquery version "1.0-m1"; (: buffer 2 :)', '3. xquery version "1.0-m1"; (: buffer 3 :)', '4. xquery version "1.0-m1"; (: buffer 4 :)', '5. xquery version "1.0-m1"; (: buffer 5 :)', '6. xquery version "1.0-m1"; (: buffer 6 :)', '7. xquery version "1.0-m1"; (: buffer 7 :)', '8. xquery version "1.0-m1"; (: buffer 8 :)', '9. xquery version "1.0-m1"; (: buffer 9 :)', and '10. xquery version "1.0-m1"; (: buffer 10 :)'. Below the queries pane, the 'Query results' pane is visible, showing the results of the executed query.

- Each query is executed against the database selected in the `content-source` drop-down menu:



- You can execute a query in either plain text, XML, or HTML formats. For the default “hello world” query, click on `TEXT` and note the results:



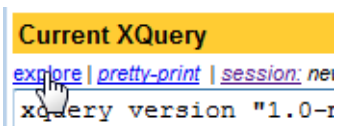
- Click on the `XML` and `HTML` buttons to see the query output in XML and HTML formats.
- Click on `Profile` to see statistics about the performance characteristics of the query, along with the query results. For details on profiling queries and the meaning of the profile fields, see the [Profiling Requests to Evaluate Performance](#) chapter in the *Query Performance and Tuning Guide* guide.

Profiled 1 expressions in PT0S

location	expression	count	shallow-% ▾	shallow-μs	deep-%	deep-μs
.main: 4	<p>hello world</p>	1	-	0	-	0

<p>hello world</p>

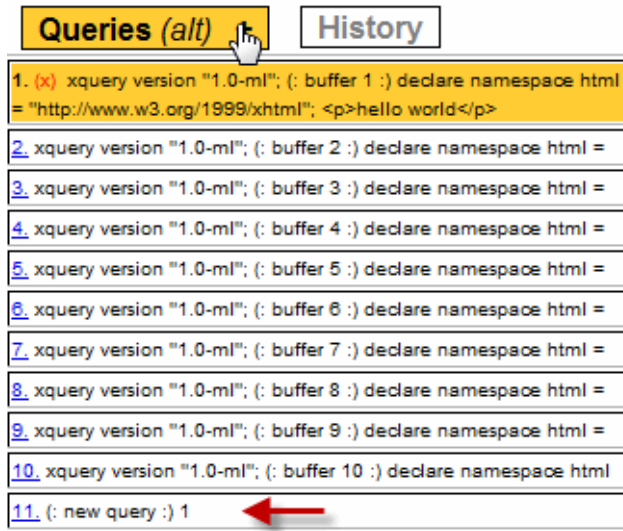
- In the upper left portion of the page, click on `explore` to view the documents loaded into the database:



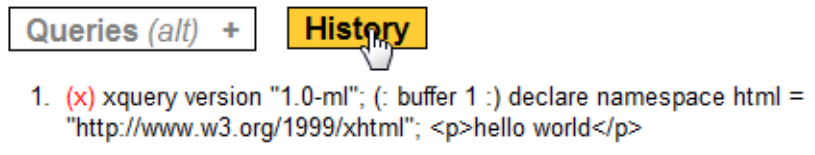
- Click on `pretty-print` to run the pretty-print utility to reformat the content in the Current XQuery window.
- Click on `session` to manage your CQ session and to create new sessions.

session name	user	created	last modified			
New Session	TheDude	2009-11-06T13:01:45.432-08:00	2009-11-06T13:44:05.453-08:00	<button>Resume</button>	<button>Clone</button>	<button>Delete</button>
<button>New Session</button>						

12. The navigation pane on the right side of the page lists all of the query buffers. Click on + to add a new query buffer to your session (Query 11, in the example below):



13. Click on History to provide a list of previously executed queries in your session:



4.3 XQuery Mini Tutorial

This section includes the following procedures to demonstrate how to use CQ 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](#)

4.3.1 Creating and Inserting a Document into the Database

Open a query buffer in CQ and cut and paste the following code into the query window. Click the **TEXT** button.

```
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>
)
```

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*.

4.3.2 Querying the Document

In another CQ query buffer, cut and paste the following code from the `dump.xqy` module and click on the `HTML` button to view the output in HTML.

```
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>
```

Taking a closer look at the 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 element inside 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*.

4.3.3 Modifying the Document

In another CQ query buffer, cut and paste the following code 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>)
```

Now rerun the query in “Querying the Document” on page 27.

4.3.4 Adding a New Element to the Document

In another CQ query buffer, cut and paste the following code to add another `book` to the `books` element described in “Creating and Inserting a Document into the Database” on page 26:

```
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">
```

Now rerun the query in “Querying the Document” on page 27.

4.4 What Next?

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*.

5.0 Technical Support

MarkLogic provides technical support according to the terms detailed in your Software License Agreement or End User License Agreement. For evaluation licenses, MarkLogic may provide support on an “as possible” basis.

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For complete product documentation, the latest product release downloads, and other useful information for developers, visit our developer site at <http://developer.marklogic.com>.

If you have questions or comments, you may contact MarkLogic 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.