
MarkLogic Server

Query Console User Guide

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1.0 Introduction to Query Console

Query Console is an interactive web-based XQuery development tool for writing and executing ad-hoc queries without creating .xqy files. Query Console enables you to quickly test code snippets, debug problems, profile queries, and run administrative XQuery scripts.

The following terms and definitions cover the primary Query Console components:

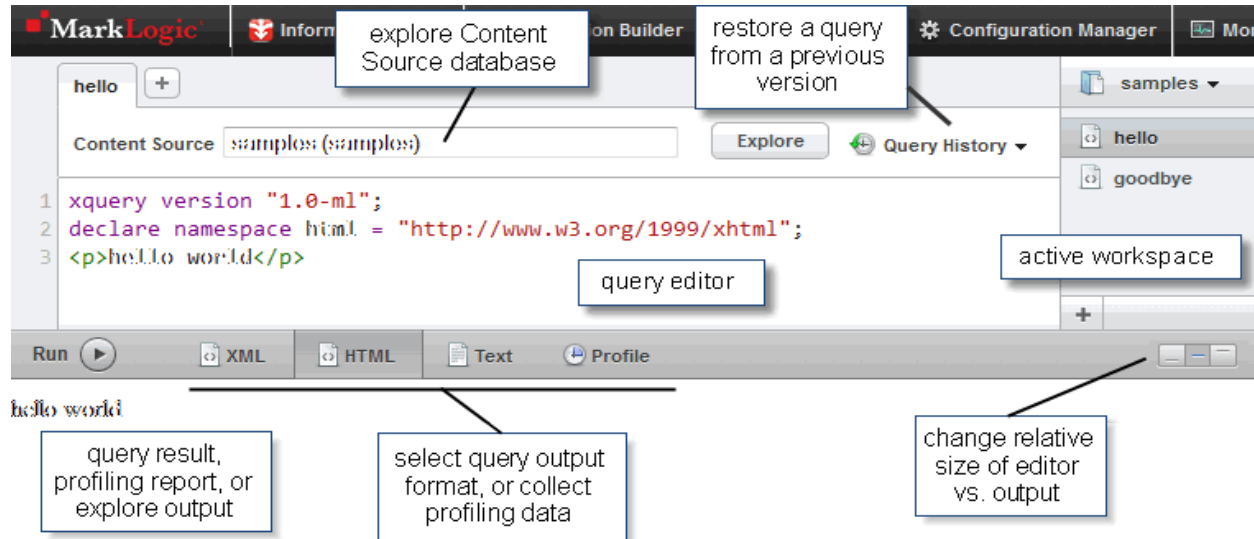
Term	Definition
<i>query</i>	Any executable block of XQuery code. When you run a query in Query Console, you may view the results in your choice of formats.
<i>workspace</i>	A collection of queries. Use workspaces to organize your queries. You may create multiple workspaces, but only one is active at a time.
<i>history</i>	A record of previously executed versions of a query. Each time you execute a query in Query Console, its query text is saved in the history. Use the history to restore a query to a previous state.
<i>content source</i>	The database and application server combination against which your query executes. Query Console automatically builds a list of available content sources for your MarkLogic Server and makes it available in the Content Source list.

Using Query Console, you can:

- Create, modify, delete and rename queries.
- Run a query and view the output as HTML, XML, or plain-text.
- Profile query performance.
- Explore the contents of a database.
- Create, delete, copy, or rename workspaces to improve query organization.
- Restore a query to a previous version from its saved history.
- Export and import workspaces for easy sharing among users or across MarkLogic Server instances.

The workspaces and queries created in Query Console are stored in MarkLogic Server, so they are available to you from any computer with access to your server instance. For example, you can create workspaces and queries on your desktop computer and use them from a lab machine with access to the same MarkLogic Server instance.

The picture below describes key Query Console UI features. For more information on using specific features, see the “Query Console Walkthrough” on page 5.



2.0 Query Console Walkthrough

This chapter provides a quick introduction to using the core Query Console features.

- [Accessing Query Console](#)
- [Creating and Running a Query](#)
- [Using the Query Execution History](#)
- [Profiling a Query](#)
- [Exploring Your Databases](#)
- [Organizing Queries with Workspaces](#)

2.1 Accessing Query Console

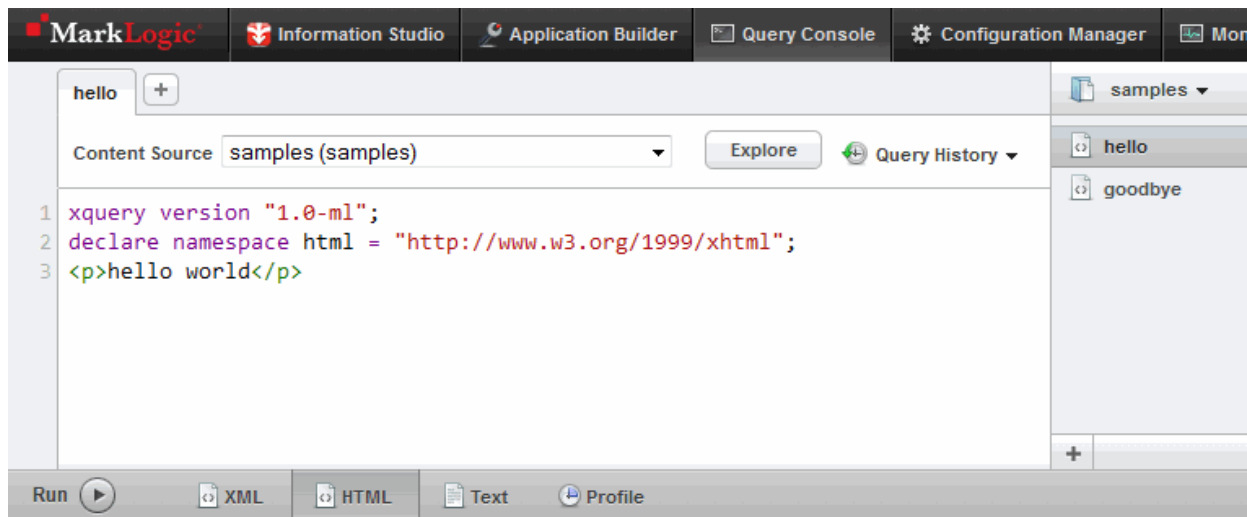
To begin using Query Console, open a browser and enter the URL:

```
http://your_ml_server:8000/qconsole
```

Note: If the application does not appear, you may not have sufficient privileges. To use Query Console, you must be a member of the `qconsole-user` role. If your privileges are insufficient, contact your MarkLogic Server administrator.

Note: Query Console does not grant extra access to databases or documents. To perform operations such as document insertion or deletion or database exploration from Query Console, you must have appropriate security privileges.

You should see a page that looks like the following:



hello world

2.2 Creating and Running a Query

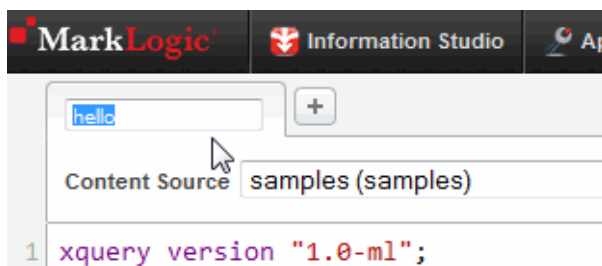
The first time you navigate to Query Console, or any time you create a new workspace, the workspace is seeded with a default query to give you a starting point. In this example, we will start with this default query.

To create and run a query:

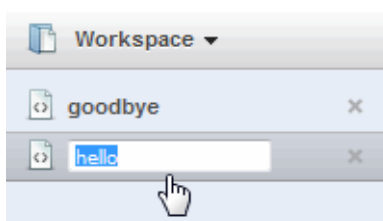
1. If `Query 1` is not the active query, click the tab for `Query 1` in the upper left of the query editor to make `Query 1` the active query.

If `Query 1` is not open in the editor, open it by clicking on its name in the workspace panel to the right.

2. To give your query a meaningful name, double-click on the query name in the tab and type in a new name, such as `hello`. Notice the name changes in the tab and in the workspace panel on the right.

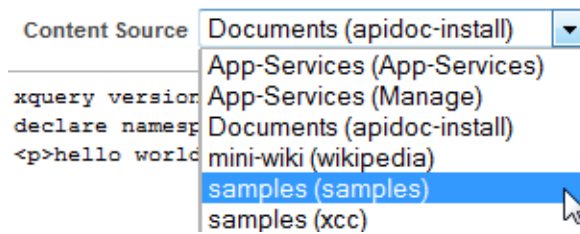


You may also rename a query by double-clicking its name in the workspace panel.



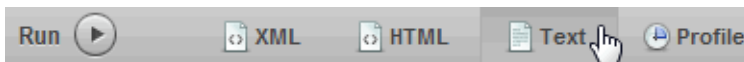
3. Optionally, replace the default query text in the `hello` query with your text. The default content is `<p>hello world</p>`.

- Click on the Source dropdown at the top of the editor to select a content source against which to run the query.

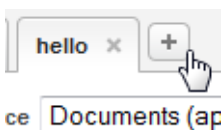


For this example, you may use any content source.

- Click the `Text` button on the Run control bar in the middle of the page to select plain text as the display format for query results.



- Click the Run button to evaluate your query. The results display in the output pane at the bottom of the page.
- Click the HTML or XML button and re-run your query to see the results in XML or HTML. Your query results display in the output pane at the bottom of the page.
- To create another query, click the “+” button to the right of the query tabs in the edit area.



The new query becomes active in the editor and appears in the workspace panel on the right.

2.3 Using the Query Execution History

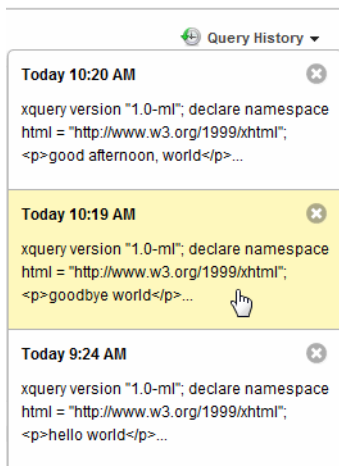
Each time you modify a query and evaluate it, Query Console saves the contents and time of execution in that query’s history. Query Console maintains a separate history for each query.

Query Console adds a history entry for each unique version of a query. If the query text is unchanged between runs or if the changes create a duplicate of an existing history entry for the query, Query Console does not create a new entry.

Query Console saves at most 50 history entries.

To use the query history:

1. Click on `Query History` to display a query's execution history. The history dropdown appears, with the most recent runs at the top of the list.
2. To revert the query to a previous state, click on the history entry. The selected query version is restored in the editor.



3. To remove a history entry, click the delete (X) button in the entry's upper right corner.
4. To close the history dropdown, click on the `history` dropdown again, or simply move the mouse outside the dropdown.

2.4 Profiling a Query

You may use Query Console to profile the performance of a query. Query Console profiles your query as if you passed your query to `prof:invoke`, and then displays a performance report in the results pane. The output from the query is not available when viewing a profiling report.

To profile a query:

1. If your App Server is does not already enable profiling, enable profiling by setting “profile allow” to true in the Admin UI, on App Server configuration settings page.

For detailed instructions, see [MarkLogic Server Profiling Requirements Capabilities](#) in the *Query Performance and Tuning Guide*.

2. Click on Profile to execute your query with profiling enabled.



- Notice the profiling report generated in the results pane. If no profiling report appears, profiling may not be enabled for your App Server; see Step 1.

Module:Line No.	Count	Shallow %	Shallow µs	Deep %	Deep µs	Expression
.main:3:0	1	-	0	-	0	<p>hello world</p>

Your Query Console query appears as the `.main` module in the profiling report.

For details on profiling queries and the meaning of the profile report columns, see the [Profiling Requests to Evaluate Performance](#) chapter in the *Query Performance and Tuning Guide* guide.

2.5 Exploring Your Databases

Use Query Console's Explore feature to browse the contents of your databases. To explore a database:

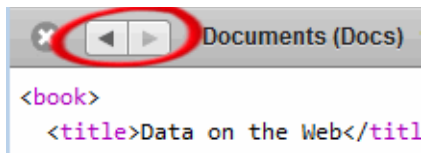
- Select a database from the `Content` `Source` dropdown at the top of the current query.
- Click Explore, to the right of the `Content` `Source` dropdown.
- Query Console overlays the query result pane with a paginated list of all documents in the selected database, similar to this:

Document	Root Element	Properties	Collections
/images/Bone-Thugs-N-Harmony+Tha-Crossroads.jpg	B null	(properties)	(no collections)
/images/The-Supremes+You-Can-t-Hurry-Love.jpg	B null	(properties)	(no collections)
/songs/Akon-featuring-Snoop-Dogg+I-Wanna-Love-You.xml	E top-song	(properties)	(no collections)
/songs/Eddie-Fisher+I-m-Walking-Behind-You.xml	E top-song	(properties)	(no collections)
/songs/Eddie-Fisher+Oh-My-Pa-Pa-O-Mein-Papa.xml	E top-song	(properties)	(no collections)

For each document in the database, the summary includes the document URI, the type and name of the root node, a link to the document properties, and a link to any collections to which the document belongs.

- Click on a document URI to view the document contents.
- Use the forward and back buttons in the upper left of the Explore output pane to navigate as you drill down into document contents, properties, and collections. For example, to

return to the database content summary after clicking on a document's URI, click the back arrow.



6. If there are properties associated with the document, click the properties link for the document to view the properties as XML.
7. If the document is part of a collection, click the collection name in the Collections column to explore that collection.
8. To dismiss the Explore view and restore the Run bar, click the close button (X) in the upper left corner of the Explore output pane.

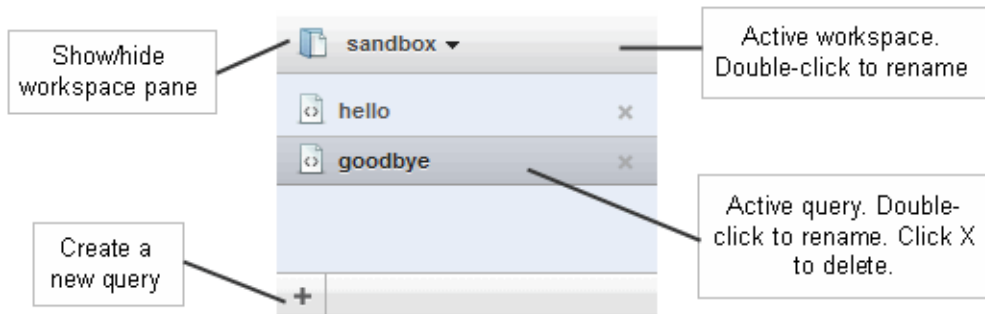
2.6 Organizing Queries with Workspaces

In Query Console, you organize your queries in workspaces. Though only one workspace is active at a time, you may create multiple workspaces. When you create a new query, Query Console automatically saves it in the active workspace.

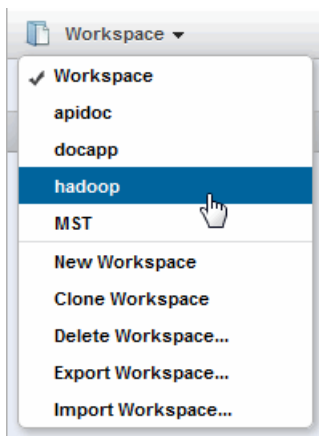
- [Workspace Overview](#)
- [Renaming a Workspace](#)
- [Copying a Workspace](#)
- [Deleting a Workspace](#)
- [Exporting a Workspace](#)
- [Importing a Workspace](#)

2.6.1 Workspace Overview

Use the workspace pane on the upper right of the page to interact with or change the active workspace. The workspace panel shows the name of the active workspace and lists its contained queries:

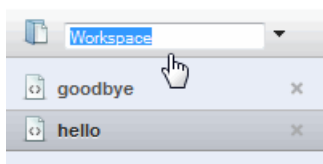


To see a list of available workspaces or to create, clone, delete, import or export a workspace, use the dropdown menu to the right of the workspace name:



2.6.2 Renaming a Workspace

To rename a workspace, double-click on the workspace name at the top of the workspace panel:



2.6.3 Copying a Workspace

To copy a workspace:

1. If the workspace to copy is not the active workspace, make it the active workspace by selecting it in the workspace menu.
2. Click the `Clone Workspace` item in the workspace menu. A new workspace named "Clone of *workspace_name*" is created and becomes the active workspace.
3. To rename the new workspace, double-click on the name at the top of the workspace panel.

When you clone a workspace, all the queries in the original workspace are copied to the new workspace. Query histories are not copied.

2.6.4 Deleting a Workspace

To delete a workspace and all of the queries it contains:

1. If the workspace to delete is not the active workspace, make it the active workspace by selecting it in the workspace menu.
2. Click the `Delete Workspace` item in the workspace menu.
3. Click OK in the confirmation dialog box to confirm deletion of the workspace.

If you delete the last workspace, Query Console automatically creates a workspace with the default initial contents.

2.6.5 Exporting a Workspace

Export a workspace to share it with another user or use it with a different MarkLogic Server instance. Exporting a workspace saves the workspace and queries to an external file which may then be imported back into Query Console. Query history is not exported.

To export a workspace:

1. If the workspace to export is not the active workspace, make it the active workspace by selecting it in the workspace menu.
2. Click the `Export Workspace` item in the workspace menu. The workspace is saved as an external XML file, using your browser download facility.

By default, the exported file is named *workspace_name.xml*.

2.6.6 Importing a Workspace

You may import a previously exported workspace into your Query Console.

To import a workspace:

1. Click the `Import Workspace` item in the workspace menu. The "Import a Workspace" dialog box comes.
2. Use the "Import a Workspace" dialog box to select an exported workspace XML file.
To cancel the import, click anywhere outside the dialog box.
3. Click `Import` to load the workspace. A loading progress window displays.
4. When loading completes, the imported workspace becomes the active workspace.

If a workspace already exists with same name as the imported workspace, the imported workspace name is modified by appending a unique number to the name.

3.0 Keyboard Shortcuts

Query Console provides keyboard shortcuts for controlling the UI minimal mouse interaction.

Where there are combination key sequences in the table below, press and hold the modifier key or keys while pressing the final key. For example, `Ctrl R` means press and hold the `Ctrl` key and then press the (lower case) `R` key.

Operation	Windows/Linux	Macintosh
Run query and show results in the currently selected output format	Ctrl Enter	Ctrl Enter
Run query and show results in XML	Ctrl Alt Enter	Ctrl Option Enter
Run query and show results in HTML	Alt Shift Enter	Option Shift Enter
Run query and show results in plain text	Ctrl Shift Enter	Ctrl Shift Enter
Profile query	Ctrl Alt Shift Enter	Ctrl Option Shift Enter
Create a new query	Alt =	Ctrl =
Close the current query	Alt -	Ctrl -
Change the relative height of the query editor and results pane. (Cycles through positions).	Double Click, or Ctrl Shift Space	Double Click, or Ctrl Shift Space
Bring the next open query to the top in the query editor	Ctrl Alt Shift Right Arrow	Ctrl Option Shift Right Arrow
Bring the previous open query to the top in the query editor	Ctrl Alt Shift Left Arrow	Ctrl Option Shift Left Arrow
Bring the first (leftmost) open query to the top in the editor	Ctrl Alt 1	Ctrl Option 1
Bring the Nth open query from the left to the top in the editor. No shortcut for N > 10.	Ctrl Alt <i>query_num</i> for <i>query_num=2..0</i>	Ctrl Option <i>query_num</i> for <i>query_num=2..0</i>
Maximize editor and hide workspace pane	Ctrl Alt ’	Ctrl Option ’
Expand/collapse query execution history	Ctrl Alt H	Ctrl Option H
Create a new workspace	Ctrl Alt W	Ctrl Option W
Clone the current workspace	Ctrl Alt Shift W	Ctrl Option Shift W

Operation	Windows/Linux	Macintosh
Select query above the current selection, when the workspace panel has the focus	Up Arrow	Up Arrow
Select query below the current selection, when the workspace panel has the focus	Down Arrow	Down Arrow

4.0 Administering Query Console

This chapter covers tasks specific to administering Query Console on your MarkLogic Server.

4.1 Controlling Access to Query Console

Query Console stores per user information about workspaces and queries in MarkLogic Server. Query Console uses the following pre-defined security roles:

- `qconsole-user`
- `qconsole-internal`

Users also require normal privileges to any databases or documents they access through Query Console.

For details about the MarkLogic Server security model and about configuring users and roles, see the *Understanding and Using Security Guide* and [Security Administration](#) in the *Administrator's Guide*.

4.1.1 `qconsole-user`

The `qconsole-user` role is a minimally privileged role that is needed to use Query Console. You must grant this role to all users who are allowed to use Query Console.

The `qconsole-user` role has the following execute privileges:

- `qconsole` (<http://marklogic.com/xdmp/privileges/qconsole>)

4.1.2 `qconsole-internal`

The `qconsole-internal` role is used by Query Console to amp certain functions that Query Console performs. You should not explicitly grant the `qconsole-internal` role to any user; it is only for internal use by Query Console.

4.2 Removing a User's Data From the Server

When Query Console users create workspaces and queries, the data is saved on the server in the App-Services database. If you need to remove all of a user's Query Console state information from the server, use a script similar to the following script.

For further assistance, contact MarkLogic Technical Support.

```
xquery version "1.0-ml";

declare namespace qc="http://marklogic.com/appservices/qconsole";

(: find the user id associated with a user name :)
declare function local:get-user-id($user-name as xs:string)
{
  let $eval :=
```

```

    fn:concat (
      'xquery version "1.0-m1";
      import module namespace
        sec="http://marklogic.com/xdmp/security"
          at "/MarkLogic/security.xqy";
      sec:uid-for-name("", $user-name, '')')
let $options :=
  <options xmlns="xdmp:eval">
    <database>{xdmp:database("Security")}</database>
  </options>
return
  xdmp:eval($eval, (), $options)
};

(: retrieve all workspace URI's for a named user :)
declare function local:get-workspace-uris(
  $user-name as xs:string)
{
  let $user-id := local:get-user-id($user-name)
  return
    if (fn:empty($user-id))
    then ()
    else
      for $d in fn:doc()/qc:workspace/qc:security[qc:userid eq $user-id]
      return base-uri($d)
};

(: retrieve id's for all queries in a given workspace :)
declare function local:get-query-ids(
  $workspace-uri as xs:string)
{
  for $qid in
    fn:doc($workspace-uri)/qc:workspace/qc:queries/qc:query/*:id
  return $qid
};

(: Retrieve id's of all history entries associated with a query id :)
declare function local:get-query-history(
  $qid as xs:unsignedLong)
{
  for $d in fn:doc()
  where $d/qc:history/qc:query[qc:id eq $qid]
  return base-uri($d)
};

let $user-name := xdmp:get-request-field("username")
let $user-documents :=
  for $ws in local:get-workspace-uris($user-name)
  return (
    for $qid in local:get-query-ids($ws)
    return
      (
        fn:concat("/queries/", $qid, ".txt"),
        local:get-query-history($qid)
      )
  )

```

```
    ),  
    $ws  
  )  
  for $d in $user-documents  
  return xdm:document-delete($d)
```

5.0 Appendix: Differences Between Query Console and CQ

Query Console is a fully supported query development tool which includes all the features of CQ. Most Query Console concepts and features should feel familiar to experienced CQ users, but there are some differences, as summarized in this section.

- [Query Console Installs with MarkLogic Server](#)
- [Workspaces Replace Sessions](#)
- [Queries Replace Buffers](#)
- [Session and Query Data Are Stored on the Server](#)
- [Query History is Per Query](#)

5.1 Query Console Installs with MarkLogic Server

Query Console installs when MarkLogic Server is installed. Any user in the `qconsole-user` role may use the tool. No additional configuration is necessary to begin using Query Console.

To access Query Console, navigate to:

```
http://your_ml_server:8000/qconsole
```

5.2 Workspaces Replace Sessions

CQ sessions are equivalent to Query Console workspaces. As with CQ sessions, Query Console workspaces may be created, deleted, and cloned.

Query Console workspaces differ from CQ sessions in the following ways:

- Workspaces may be renamed.
- Workspaces list queries by name, rather than by position/contents.
- Query Console stores workspace data on the server, rather than local to your browser. Therefore, your workspaces and queries are available from any host which can communicate with your MarkLogic Server instance.
- A workspace may be exported from one Query Console session and imported into another, allowing you to easily share queries among users or across MarkLogic Server instances.

5.3 Queries Replace Buffers

CQ buffers are equivalent to Query Console queries. As with CQ buffers, Query Console queries may be created, deleted, and restored from history.

Query Console queries differ from CQ buffers in the following ways:

- Queries are named. The tool supplies a default name when you create a query. You may change the name by double-clicking on the query name in the editor or workspace.
- More than one query may be open for editing at a time.
- The query editor displays line numbers.

5.4 Session and Query Data Are Stored on the Server

In CQ, sessions are stored in a `sessions` sub-directory under your CQ application server root. Though you may share a CQ session and its buffers by copying the session XML file from this location, sessions are otherwise unavailable if you change computers.

Query Console stores your workspace and query data in MarkLogic Server, so your queries are available from any host which can reach your server. Workspaces and their queries cannot be shared across users.

5.5 Query History is Per Query

In CQ, each time you execute the query in a buffer, the query text is saved in the query history. All queries in a session share a single query history.

In Query Console, each query has its own history, making it easier to manage and restore historical versions of queries.

See [Using the Query Execution History](#) for more details.

6.0 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.

For customers with a support contract, we invite you to visit our support website at <http://support.marklogic.com> to access information on known and fixed issues.

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.

Product Notices

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