Xindice 1.1 XPath Guide

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NOTICE:

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> **Note:**
> If you notice incorrectness in this documentation, please <u>notify</u> Xindice community. Your feedback will help create better documentation.

1. Querying the Database

Xindice currently supports XPath as a query language. Queries can be executed from within client application (please refer to the <u>developers giude</u>), through XML-RPC interface, or via a command line (please refer to the <u>command line tool guide</u>). This document describes what XPath queries are supported and what are the results of the query.

2. Sample Database

XPath queries and results described below were run against sample /db/addressbook collection. Documents in the addressbook collection have following structure:

```xml
<?xml version="1.0"?>
<person>
  <fname>John</fname>
  <lname>Smith</lname>
  <phone type="work">563-456-7890</phone>
  <phone type="home">534-567-8901</phone>
  <email type="home">jsmith@somemail.com</email>
  <email type="work">john@lovesushi.com</email>
  <address type="home">34 S. Colon St.</address>
  <address type="work">9967 W. Shrimp Ave.</address>
</person>
```

3. Query for Document

One of the common usages for XPath is to obtain documents satisfying some criteria. Suppose we want to find everybody with the cell phone:

```
xindice xpath -c /db/addressbook -q "/person[phone/@type='cell']"
```

Result of the query will be one or more documents. If you have only two person entries in the collection, then only one result will be found:

```xml
<person xmlns:src="http://xml.apache.org/xindice/Query"
        src:col="/db/addressbook" src:key="address2">
  <fname>SlackJawedLocal</fname>
  <lname>Cletus</lname>
  <phone type="work">123-456-7890</phone>
  <phone type="home">234-567-8901</phone>
  <phone type="cell">345-678-9012</phone>
```

```
    <email type="home">cletus@hotmail.com</email>
    <email type="work">cletus@micrsquish.com</email>
    <address type="home">1234 S. Elm St.</address>
    <address type="work">4567 W. Pine St.</address>
  </person>
```

4. Query for Element

Here we will issue a query resulting only in some elements from the document. Suppose we want to find everybody's home phone numbers:

```
  xindice xpath -c /db/addressbook -q "/person/phone[@type='home']"
```

Result of the query will be all elements satisfying criteria from all documents.

```
  <phone src:col="/db/addressbook" src:key="address1"
         xmlns:src="http://xml.apache.org/xindice/Query"
         type="home">534-567-8901</phone>
  <phone src:col="/db/addressbook" src:key="address2"
         xmlns:src="http://xml.apache.org/xindice/Query"
         type="home">234-567-8901</phone>
```

5. Query for Text Node

With Xindice 1.1b4 and above, it is possible to query for text nodes. Each resulting text node will be wrapped into `result` element in the Query namespace.

```
  xindice xpath -c /db/addressbook -q "/person[fname='John']/phone/text()"
```

Result of the query will be all phones for all Johns in the collection.

```
  <xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
             xq:col="/db/addressbook"
xq:key="address1">563-456-7890</xq:result>
  <xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
             xq:col="/db/addressbook"
xq:key="address1">534-567-8901</xq:result>
```

6. Query for String

XPath expressions with String result are also supported.

```
  xindice xpath -c /db/addressbook -q "string(/person[fname='John']/phone)"
```

Result of the query will be first phone number for all Johns in the collection, and empty result for each non-John.

```
  <xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
             xq:col="/db/addressbook"
```

```
xq:key="address1">563-456-7890</xq:result>
  <xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
             xq:col="/db/addressbook" xq:key="address2"></xq:result>
```

Note:

Because XPath is evaluated against each document, and because `string()` function always returns a result, such query will produce result from each document in the collection. In this example, result from second document is empty, as criteria `fname='John'` was not satisfied.

7. Query for Number

XPath expressions with Number result are also supported.

```
xindice xpath -c /db/addressbook -q "count(/person/phone)"
```

This XPath will return count of phone numbers on file for each person. If person does not have phone numbers, result for this person will be `0.0`.

```
<xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
           xq:col="/db/addressbook" xq:key="address1">2.0</xq:result>
<xq:result xmlns:xq="http://xml.apache.org/xindice/Query"
           xq:col="/db/addressbook" xq:key="address2">3.0</xq:result>
```