**Consider XML Documents with Roots Like This:**

<testConstructionProfile name="Curtis's biology TCP" tcp\_id="34cce75d-b47d-402b-937d-c605d0703f6b"/>

(: among other roots from other documents :)

**And the indexes:**

1) Value index on just name: @name

2) Value index on just tcp\_id: @tcp\_id

3) Pathvalue index on just name: /testConstructionProfile[@name]

4) Pathvalue index on just tcp\_id: /testConstructionProfile[@tcp\_id]

5) Pathvalue index on both: /testconstructionProfile[@name + @tcp\_id]

**Queries and debug output:**

doc('/testConstructionProfile')/testConstructionProfile[@tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b']

query:5:1:Path expr .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:Creating query plan on node /testConstructionProfile

query:5:1:for expression .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:No index found

query:5:1:Found index "Pathvalue index on just tcp\_id"

query:5:1:No index found

query:5:1:Found index "Value index on just tcp\_id"

query:5:1:No index found

query:5:1:Using query plan:

query:5:1:index(Pathvalue index on just tcp\_id)

query:5:1:Looking up "34cce75d-b47d-402b-937d-c605d0703f6b" in index **"Pathvalue index on just tcp\_id"**

doc('/testConstructionProfile')/testConstructionProfile[@name = "Curtis's biology TCP"]

query:7:1:Path expr .../child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:7:1:Creating query plan on node /testConstructionProfile

query:7:1:for expression .../child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:7:1:Found index "Pathvalue on both"

query:7:1:No index found

query:7:1:No index found

query:7:1:Found index "Pathvalue index on just name"

query:7:1:No index found

query:7:1:Found index "Value index on just name"

query:7:1:Using query plan:

query:7:1:index(Pathvalue index on just name)

query:7:1:Looking up "Curtis's biology TCP" in index **"Pathvalue index on just name"**

doc('/testConstructionProfile')//testConstructionProfile[@name = "Curtis's biology TCP"] **(: note the // :)**

query:7:1:Path expr .../descendant-or-self::node()/child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:7:1:Creating query plan on node /testConstructionProfile

query:7:1:for expression .../descendant-or-self::node()/child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:7:1:No index found

query:7:1:Found index "Value index on just name"

query:7:1:Found index "Value index on just name"

query:7:1:No index found

query:7:1:Using query plan:

query:7:1:index(Value index on just name)[(self::testConstructionProfile and parent::node())]

query:7:1:Looking up "Curtis's biology TCP" in index **"Value index on just name"**

doc('/testConstructionProfile')/testConstructionProfile[@tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b' **and** @name = "Curtis's biology TCP"]

query:9:1:Path expr .../child::testConstructionProfile[(@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b" and @name = "Curtis's biology TCP")]

query:9:1:Creating query plan on node /testConstructionProfile

query:9:1:for expression .../child::testConstructionProfile[(@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b" and @name = "Curtis's biology TCP")]

query:9:1:No index found

query:9:1:Found index "Pathvalue on both"

query:9:1:Found index "Pathvalue on both"

query:9:1:Found index "Pathvalue index on just tcp\_id"

query:9:1:No index found

query:9:1:Found index "Pathvalue index on just name"

query:9:1:Found index "Value index on just tcp\_id"

query:9:1:No index found

query:9:1:Found index "Value index on just name"

query:9:1:Using query plan:

query:9:1:index(Pathvalue on both)

query:9:1:Looking up "[Curtis's biology TCP, 34cce75d-b47d-402b-937d-c605d0703f6b]" in index **"Pathvalue on both"**

doc('/testConstructionProfile')/testConstructionProfile[@name = "Curtis's biology TCP" **and** @tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b']

query:11:1:Path expr .../child::testConstructionProfile[(@name = "Curtis's biology TCP" and @tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b")]

query:11:1:Creating query plan on node /testConstructionProfile

query:11:1:for expression .../child::testConstructionProfile[(@name = "Curtis's biology TCP" and @tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b")]

query:11:1:Found index "Pathvalue on both"

query:11:1:No index found

query:11:1:Found index "Pathvalue on both"

query:11:1:No index found

query:11:1:Found index "Pathvalue index on just tcp\_id"

query:11:1:Found index "Pathvalue index on just name"

query:11:1:No index found

query:11:1:Found index "Value index on just tcp\_id"

query:11:1:Found index "Value index on just name"

query:11:1:Using query plan:

query:11:1:index(Pathvalue on both)

query:11:1:Looking up "[Curtis's biology TCP, 34cce75d-b47d-402b-937d-c605d0703f6b]" in index **"Pathvalue on both"**

**Tidbit:**

If index #5 is the only index to exist:

5) Pathvalue index on both: /testconstructionProfile[@name + @tcp\_id]

And you run this query on just tcp\_id:

doc('/testConstructionProfile')/testConstructionProfile[@tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b']

query:5:1:Path expr .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:Creating query plan on node /testConstructionProfile

query:5:1:for expression .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:No index found

query:5:1:No query plan with indexes found, **walking descendants**

**Tidbit:**

If a sixth index is added:

6) Multi-path index:

Index path: /testConstructionProfile

Sub-Path: @name

Sub-Path: @tcp\_id

Then the multi-path index will be favored for all XQueries that use absolute paths:

doc('/testConstructionProfile')/testConstructionProfile[@tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b']

query:5:1:Path expr .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:Creating query plan on node /testConstructionProfile

query:5:1:for expression .../child::testConstructionProfile[@tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b"]

query:5:1:Found index "Multi-Path index"

query:5:1:No index found

query:5:1:Found index "Value index on just tcp\_id"

query:5:1:No index found

query:5:1:Found index "Pathvalue index on just tcp\_id"

query:5:1:No index found

query:5:1:Using query plan:

query:5:1:index(Multi-Path index)

query:5:1:Looking up "34cce75d-b47d-402b-937d-c605d0703f6b" in index **"Multi-Path index"**

doc('/testConstructionProfile')//testConstructionProfile[@name = "Curtis's biology TCP"] **(: note the // :)**

query:5:1:Path expr .../descendant-or-self::node()/child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:5:1:Creating query plan on node /testConstructionProfile

query:5:1:for expression .../descendant-or-self::node()/child::testConstructionProfile[@name = "Curtis's biology TCP"]

query:5:1:Found index "Value index on just name"

query:5:1:No index found

query:5:1:No index found

query:5:1:Found index "Value index on just name"

query:5:1:Using query plan:

query:5:1:index(Value index on just name)[(self::testConstructionProfile and parent::node())]

query:5:1:Looking up "Curtis's biology TCP" in index **"Value index on just name"**

doc('/testConstructionProfile')/testConstructionProfile[@name = "Curtis's biology TCP" **and** @tcp\_id = '34cce75d-b47d-402b-937d-c605d0703f6b']

query:5:1:Path expr .../child::testConstructionProfile[(@name = "Curtis's biology TCP" and @tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b")]

query:5:1:Creating query plan on node /testConstructionProfile

query:5:1:for expression .../child::testConstructionProfile[(@name = "Curtis's biology TCP" and @tcp\_id = "34cce75d-b47d-402b-937d-c605d0703f6b")]

query:5:1:Found index "Multi-Path index"

query:5:1:Found index "Multi-Path index"

query:5:1:Found index "Value index on just name"

query:5:1:No index found

query:5:1:Found index "Value index on just tcp\_id"

query:5:1:Found index "Pathvalue index on just name"

query:5:1:No index found

query:5:1:Found index "Pathvalue index on just tcp\_id"

query:5:1:Found index "Pathvalue on both"

query:5:1:No index found

query:5:1:Found index "Pathvalue on both"

query:5:1:Using query plan:

query:5:1:index(Multi-Path index)

query:5:1:Looking up "(Curtis's biology TCP, 34cce75d-b47d-402b-937d-c605d0703f6b)" in index **"Multi-Path index"**