Saxon-JS - Bug #4958

saxon-js 2.1: Crash in Saxon.XPath.evaluate with certain predicates

2021-04-01 04:04 - Michael Gunter

Status:	Resolved		**Start date:**	2021-04-01
Priority:	Normal		**Due date:**	
Assignee:			**% Done:**	0%
Category:			**Estimated time:**	0:00 hour
Sprint/Milestone:			**Spent time:**	0:00 hour
Applies to JS Branch:			**Fixed in JS Release:**	
Fix Committed on JS Branch:			**SEF Generated with:**	

Description

I have isolated a crash condition that occurs using certain predicates. The problem can be seen in the code at
https://github.com/Neuroboy23/saxon-test. This crash occurs in saxon-js 2.1. It does *not* occur in saxon-js 2.0.

Given this XML input:

```
<?xml version="1.0"?>
<objects>
    <object name="foo" />
    <object-ref name="foo" />
</objects>
```

And this code:

```
import Saxon from "saxon-js";
Saxon.XPath.evaluate(
    "//*[ends-with(local-name(), '-ref')]",
    document
);
```

The Saxon.XPath.evaluate call above crashes with the following exception:

```
C:\dev\saxon-test\node_modules\saxon-js\SaxonJS2N.js:4065
y){return F.substring(0,y.length)===y}function q(F,y){return F.substring(F.length-y.length)===y}fu
nction z(F,y){return y&&(y=y.next())?y.toString():F.collation||Xd.getInheritedProperty(F,"defaultC
ollation")}function P(F,y){y=F?p(F,"http://www.w3.org/2013/collation/UCA")&&36<F.length?aa(F,F.sub
string(37),y):p(F,"http://saxon.sf.net/collation")&&29<F.length?aa(F,F.substring(30),y):y.fixed.qa
.jd[F]:pa();if(!y)throw new M("Unrecognized collation "+F,"FOCH0002");return y}function aa(F,y){if
(""===y)y=pa();



 ^
TypeError: Cannot read property 'jd' of undefined
    at P (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4065:394)
    at Object.Ub (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4073:213)
    at ends-with (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4274:469)
    at C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4388:324
    at jc.K [as g] (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4387:511)
    at jc.next (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:3975:180)
    at lc.next (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:3976:69)
    at lc.ba.forEachItem (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:3971:574)
    at lc.ba.expand (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:3972:191)
    at Object.Yd (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:3992:174)
    at C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4381:382
    at Object.J [as evaluate] (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4357:
15)
    at Object.evaluate (C:\dev\saxon-test\node_modules\←[4msaxon-js←[24m\SaxonJS2N.js:4605:248)
```

```
                 at file:///C:/dev/saxon-test/index.js:17:33
```

History

#1 - 2021-04-01 04:07 - Michael Gunter

For completeness' sake, here's the same code block above with the addition of the code to load the xml file the file test.xml. The crash with this code is the same as above.

```
import Saxon from "saxon-js";
const document = await Saxon.getResource({
    file: "test.xml",
    type: "xml"
});
Saxon.XPath.evaluate(
    "//*[ends-with(local-name(), '-ref')]",
    document
);
```

#2 - 2021-04-01 10:28 - Michael Kay

Using a top--level "await" like this is a very new feature in Node, and not one that we've tested as far as I'm aware. Does it still fail if you use the more traditional structure

```
Saxon.getResource({
    file: "test.xml",
    type: "xml"
}).then(document =>
  Saxon.XPath.evaluate(
      "//*[ends-with(local-name(), '-ref')]",
      document
  );
```

?

#3 - 2021-04-02 02:37 - Michael Gunter

Yes. The same error is thrown when using .then instead of await. I have updated the code on https://github.com/Neuroboy23/saxon-test accordingly.

#4 - 2021-04-02 02:38 - Michael Gunter

To be clear: A concise demonstrable script is at https://github.com/Neuroboy23/saxon-test/blob/master/index.js

#5 - 2021-04-07 18:00 - Norm Tovey-Walsh

- Status changed from New to In Progress

This appears to be caused by an error in the way the context is initialized for evaluating XPath expressions. The context is missing the fixed options (hence the cannot read property ... of undefined error) and it needs to access the collation for the ends-with function. Now I just need to work out how and where that's *supposed* to happen.

#6 - 2021-04-27 16:50 - Norm Tovey-Walsh

- Status changed from In Progress to Resolved

I've committed a fix which resolves this issue. The static context was missing the collations when using the XPath evaluate function.

#10 - 2021-04-27 22:39 - Michael Gunter

What's the ETA for public deployment? (I'm a software developer myself, and I understand that question is annoying and sometimes hard to answer. But as a first-time Saxonica/Saxon-JS user, I don't know your organization yet.)

#11 - 2021-04-28 12:24 - Norm Tovey-Walsh

There were a couple of items that didn't make it into the 2.1 release that have now been finished, so I'd like to do another release as soon as it's practical. Several bugs have been reported against 2.1 and we're working on those now. It makes sense to fix those first, I think.

None of which actually answers your question.

"I'd be pleased if we got another release out before June." But that's not a promise of any sort. :-)