

Designing a domain-specific-language to configure highly usable authoring environments

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What is Domain Specific Language (DSL)



A Domain Specific Language is a programming language with a higher level of abstraction optimized for a specific class of problems





What is Tridion Docs – Collective Spaces

Collective Spaces provides an easy-to-use interface to create, edit and review corporate content



An easy-to-use browser-based editor



Synchronized commenting and threaded conversations for unified collaboration



A simplified view for reviewers to access all assigned projects from a single interface



Advanced tracking of changes for information governance



Sophisticated Document History capabilities



Workflow and review status tracking

DITA



DITA content has a ton of value, and Collective Spaces makes it easy for regular people to get that value

Think it's simple to make it that usable? Think again!

DITA has 600+ elements and customers can have their own specializations on top of that.





Why we need DSL?

- It is not possible to have all configuration in the OOTB product
- Nobody wants to hack into the core of any product to configure it
- A minimal skill set should be required
- The feedback loop should be fast

Without DSL



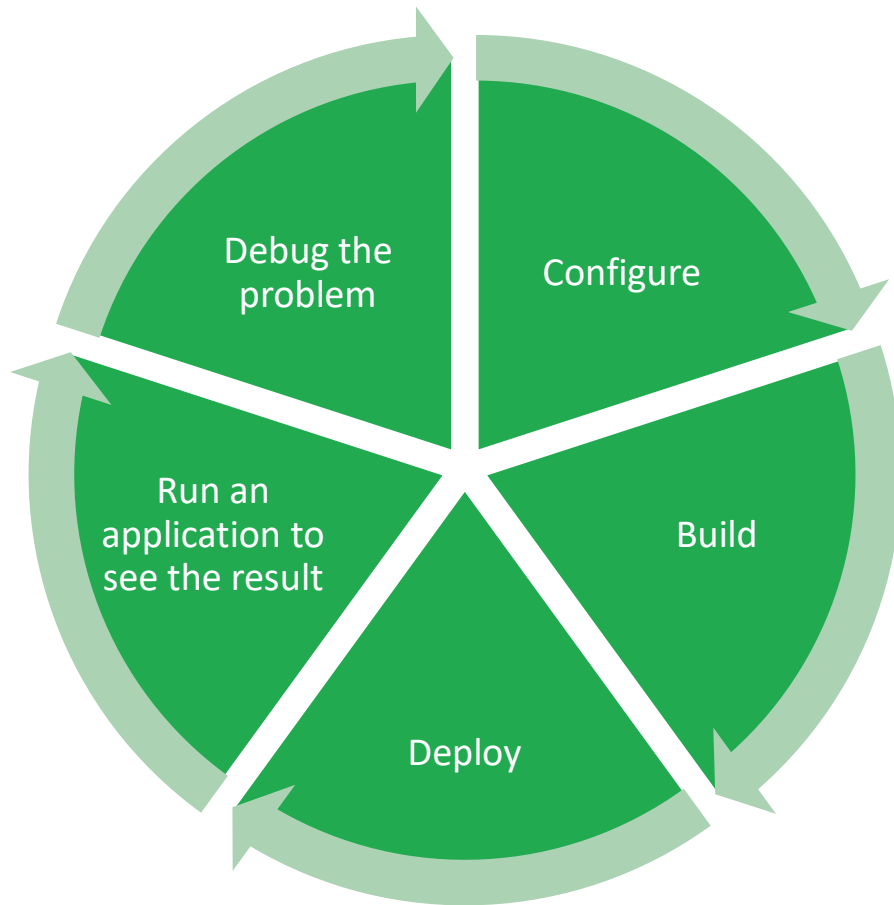
Knowledge required:

- JavaScript
- XPath/XQuery
- NPM/Yarn
- JSON
- Fonto configuration specification
- Fonto development tool

Obstacles:

- Requires re-building of an application (Fonto + Integration with Collective Spaces)
- Requires access to the source code
- Requires installation of a big amount of npm packages
- Requires product installation after the configuration was done
- Long learning process
- Hard to debug the problems
- No validation on runtime
- Easy to mess up with the dependencies

Debugging flow without DSL



A quick response/error prompting is quite crucial when you do any kind of development

With DSL



We put tons of clever thought into making it work, and hence this makes life better for Tridion Docs partners and customers alike

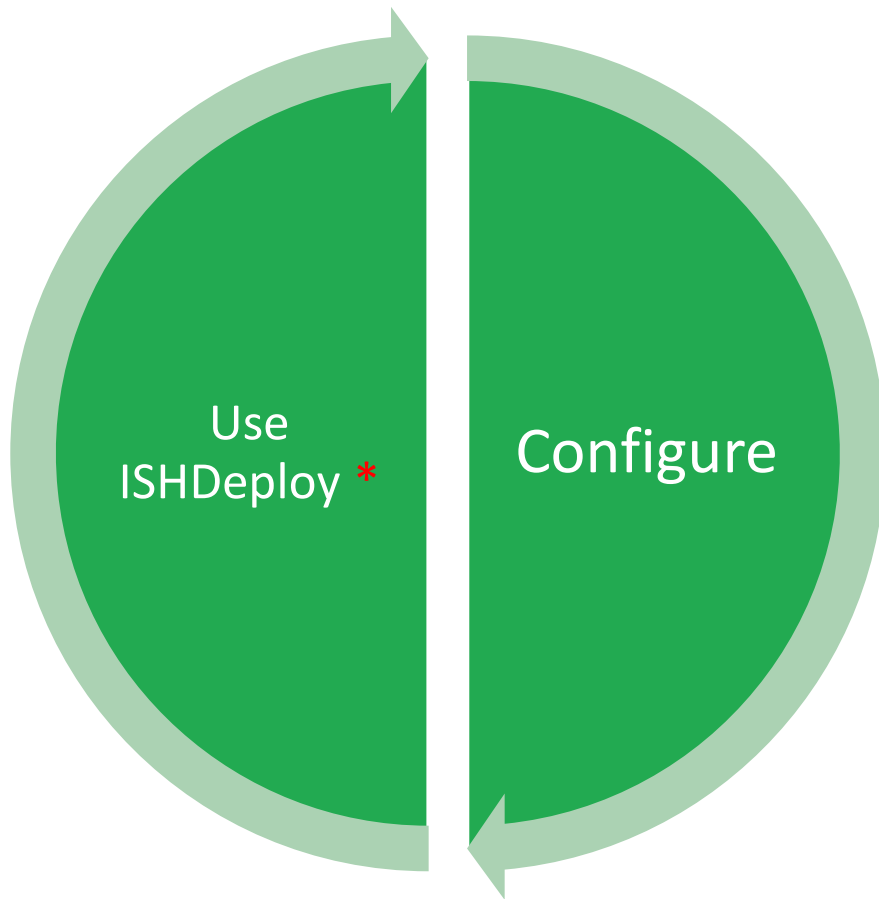
Knowledge required:

- XML
- DSL

Benefits:

- No need for re-building of the application, so no need for npm packages, etc...
- Upgradability across the 4 releases per year by Fonto... engineering does the heavy lifting for you
- Controllability
- Validation in place due to availability of the Schema for XML
- ISHDeploy to validate and make configuration a part of the product

Debugging flow with DSL



A quick response about an error leads to a better end result and save development time

* run Set-ISHFontoSchemaExperience cmdlet

ISHDeploy



ISHDeploy is the configuration language of Tridion Docs Content Manager, where engineering takes care of the complexity across releases behind the scenes



Validate

Validate the configuration XMLs



Compile

Compile the schemas to the format Fonto understands using the Fonto Schema Compiler



Write

Write the SchemaLocationsConfig.xml - holds which compiled schema to use for which DTD



Restart

Restart the Collective Spaces application pool, so the new config is taken into account after a browser refresh



What next?

Don't think that DSL is useful only for DITA configuration!

In addition to DITA elements configuration we allow to:

- Define custom menus structure in Draft Space
- Define custom sidebar to render custom application
- To be continue...

And for all of that, you need only XML knowledge and DSL documentation

Element configuration



```
<behaviorgroup name="Highlighting elements">
  <highlighting xpath="self::b" italic="yes" underline="yes">
    <label>Bold overwritten</label>
    <menuitems>
      <menuitem>
        <label>Toggle bold</label>
        <toggletemplate elementname="b"/>
      </menuitem>
    </menuitems>
  </highlighting>
</behaviorgroup>

<behaviorgroup name="Inline elements">
  <inline xpath="self::mykeyword" backgroundcolor="blue">
    <label>My keyword</label>
    <menuitems>
      <menuitem>
        <label>Toggle my keyword</label>
        <toggletemplate elementname="mykeyword"/>
      </menuitem>
    </menuitems>
  </inline>
</behaviorgroup>
```

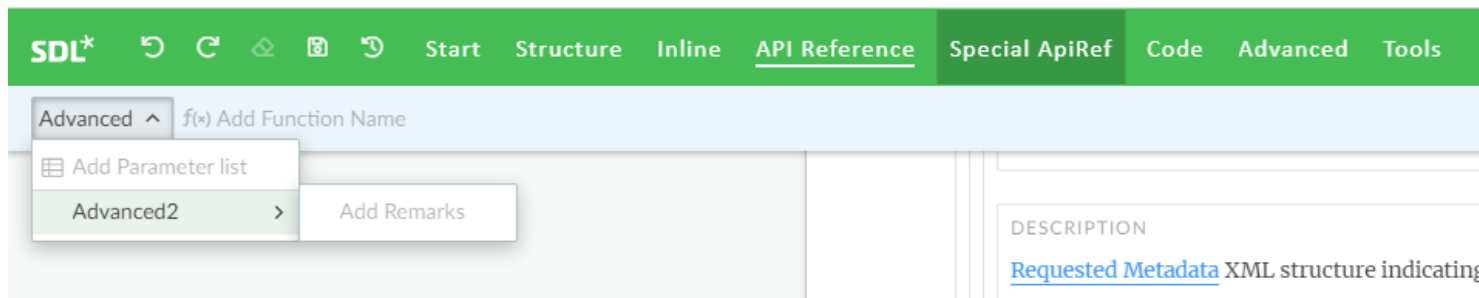
Menu configuration



```
<menuconfiguration>
  <extramenu xpath="ancestor-or-self::apiRef">
    <label>Special ApiRef</label>
    <description>Menus to insert API reference elements</description>
    <menuexpandgroup>
      <label>Advanced</label>
      <description>Choose one of the advanced elements</description>
      <menuitemref ref="add-paramlist" icon="th-list"/>
      <menuseparator/>
      <menuexpandgroup>
        <label>Advanced2</label>
        <description>Choose one of the advanced elements</description>
        <menuitemref ref="add-remarks"/>
      </menuexpandgroup>
    </menuexpandgroup>
    <menuseparator/>
    <menuitemref ref="add-functionname" icon="function"/>
  </extramenu>
  <extramenu>
    <label>Code</label>
    <description>Menus to insert code elements</description>
    <menuitemref ref="add-codeblock" icon="code"/>
  </extramenu>
</menuconfiguration>
```

```
<block xpath="self::remarks" type="cannotbesp!
  <label>Remarks</label>
  <menuitems>
    <menuitem id="add-remarks">
      <label>Add Remarks</label>
      <inserttemplate>
        <remarks/>
      </inserttemplate>
    </menuitem>
  </menuitems>
</block>
```

```
<block xpath="self::functionname" type="canno
  <label>Function Name</label>
  <placeholderText>Fill in a function name
  <menuitems>
    <menuitem id="add-functionname">
      <label>Add Function Name</label>
      <inserttemplate>
        <functionname/>
      </inserttemplate>
    </menuitem>
  </menuitems>
</block>
```





DEMO TIME



Questions & Answers

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