

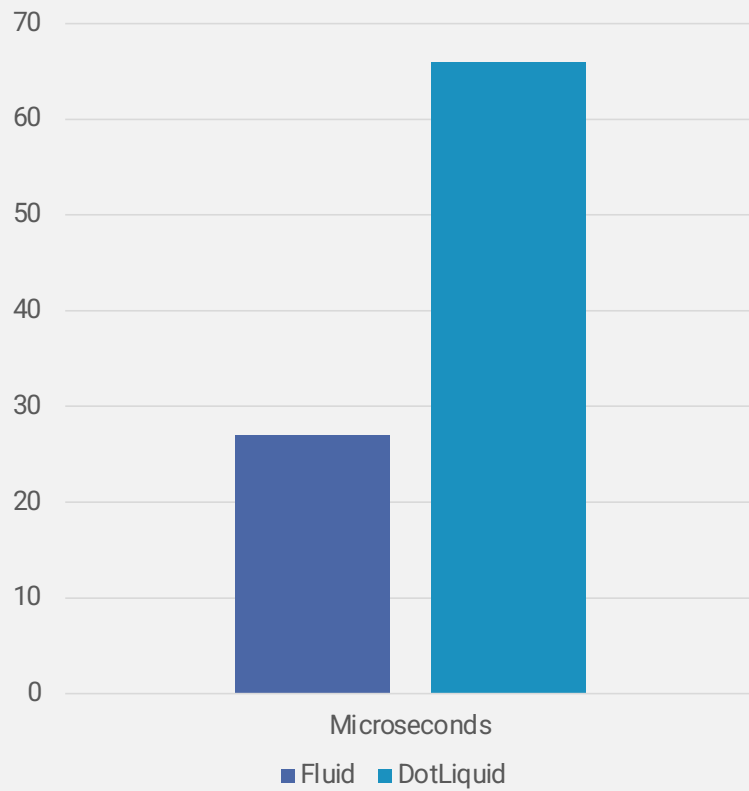


# Rock Lava Engine

Fluid vs DotLiquid



### Parsing Time (Lower is Better)



# Why?



# Summer 2020 Analysis

Criteria	Framework		
	DotLiquid ( <a href="#">link</a> )	Scriban ( <a href="#">link</a> )	Fluid ( <a href="#">link</a> )
<b>Project Maturity and Current Activity</b>			
Contributors (Major/Minor)	(5/45)	(1/21)	(2/21)
Issues (Open/Closed)	80/158	44/157	28/77
Recent Commits (last 12 months)	20	24	39
First Release	Jan-2011 (1.0.0)	Dec-2017 (v1.0.0)	Jun-2017 (0.1.0)
Current Release	Jun-2020 (2.0.361)	Jun-2020 (v2.1.3)	Jun-2020 (1.0.0-beta)
Nuget Downloads (last 6 weeks)	~200,000	~65,000	~23,000
<b>Documentation and Support</b>			
Documentation Quality	Moderate.	High	Low
Stack Overflow Posts	271	24	0
Significant Projects (Used By)	High	None	Moderate (Orchard Core CMS)
<b>Compatibility and Extensibility</b>			
Liquid Language Compatibility	High	High Some caveats with dates and numeric types.	High
Support for Custom Filters	High Filter functions use standard .NET Types.	High Filter functions use standard .NET Types.	Medium Requires specific function signature using Fluid Types.
Support for Custom Tags and Blocks	High	High	High
Support for Dynamic Types	Poor. Does not directly support ExpandableObject.	Excellent.	Excellent.
<b>Other Language Features</b>			
Template Compilation Error Reporting	Poor	Excellent	Good
Enforce Script Variable Declaration	No	Yes	No
<b>Performance (Scriban Benchmark Test)</b>			
Relative Parsing Time	Poor (65)	Excellent (10)	Good (28)
Relative Parsing Memory	Good (15)	Excellent (4)	Poor (28)
Relative Rendering Time	Poor (7.8)	Excellent (1)	Excellent (1)
Relative Rendering Memory	Poor (4000)	Excellent (120)	Excellent (130)
<b>Performance (Rock Benchmark Test)</b>			
Benchmark Test Results	N/A	427,971 ms	521,184 ms



# Configuration Via Global Attribute

Lava Engine Liquid Framework Value

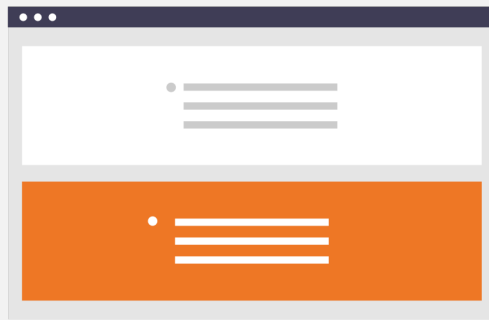
Lava Engine Liquid Framework

- DotLiquid
- Fluid
- DotLiquid (with Fluid verification)

1540	Global Attribute	Valid Username Caption	It must only contain letters, number or @. It must also be at least three characters...
1541	Global Attribute	Valid	AFA 7a 70 0: @ 12 1201\$

## Defaults to DotLiquid (if not set)

Note: Requires restart to enable.



# DotLiquid

## With Fluid Verification

A hybrid mode for spotting Fluid issues  
before you cut over



# LavaParseException Errors



Name ▾



## Exception Occurrences

[Home](#) > [System Settings](#) > [Exception List](#) > Exception Occurrences



### (Rock.Lava.LavaParseException) Lava Template Parse...

Shows the group of exception log entries matching a specific type and partial description.

Exception Type

Rock.Lava.LavaParseException

Description

Lava Template Parse...

### Exception List

Filter Options ▾



Id	Date/Time	Page/URL	Logged In User	Description
111	8/6/2021 7:44 PM	https://prealpha.rocksolidchurchdemo.com/page/679		Lava Template Parse failed: Invalid '{% workflow %}' tag at (3:12) [Template="{% workflow where:'WorkflowTypeId == 5' %} {% for w in workflowItems %} {{ w}} {% endfor %} {% end workflow %} "] [Engine=Fluid]
110	8/6/2021 7:44 PM	https://prealpha.rocksolidchurchdemo.com/page/679		Lava Template Parse failed: Invalid '{% workflow %}' tag at (3:12) [Template="{% workflow where:'WorkflowTypeId == 5' %} {% for w in workflowItems %} {{ w}} {% endfor %} {% end workflow %} "] [Engine=Fluid]



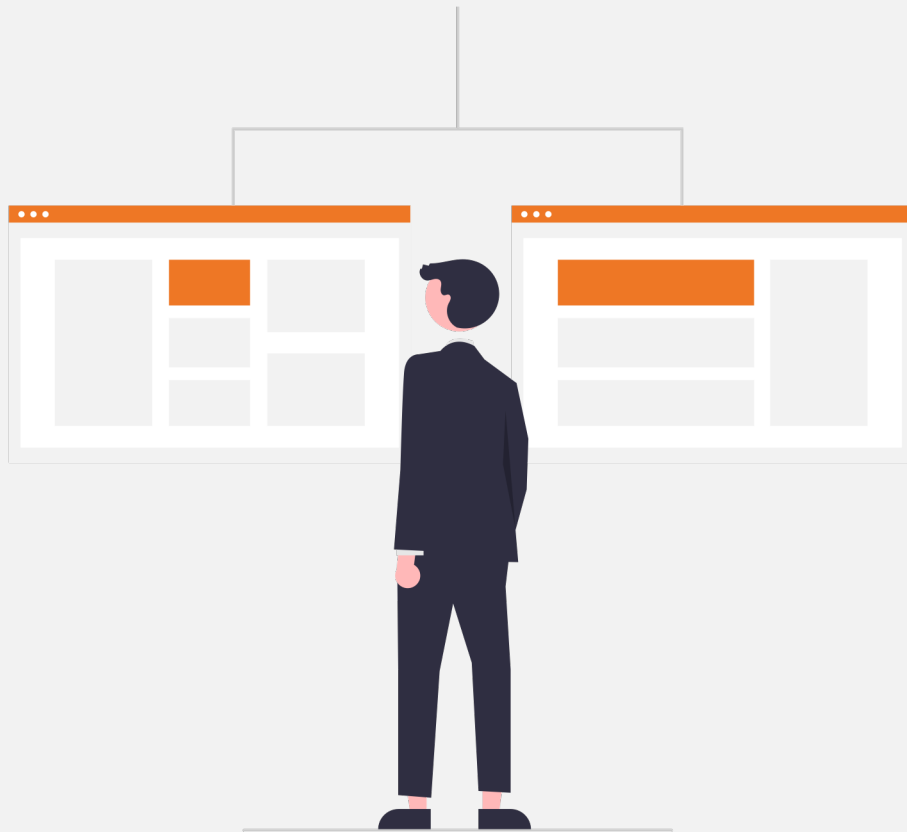
# Anatomy of an Error

Lava Template Parse failed:

Invalid '{% workflow %}' tag at (3:12)

```
[Template=" {% workflow where:'WorkflowTypeId == 5' %}  
{% for w in workflowItems %} {{ w }} {% endfor %}  
{% end workflow %} "]
```

```
[Engine=Fluid]
```



# Differences

Between DotLiquid and Fluid





# Non-allowed escape sequences

```
{% assign isValidEmail = 'ted@test.com' | RegExMatch: '\w+([-+.]\w+)*@\w+([-+.]\w+)*\.\w+([-+.]\w+)*' %}  
{% if isValidEmail %}  
    This is a valid email!  
{% endif %}
```

Only `\n` `\r` `\t` `\v` `\'` `\"` `\\` etc. are allowed escape sequences ‡

## DotFluid Output

This is a valid email!

## DotFluid Output

Lava Template Parse failed: '%}' was expected at (1:53)

```
[Template="{% assign isValidEmail =  
'ted@test.com' | RegExMatch: '\w+([-  
+.]\w+)*@\w+([-+.]\w+)*\.\w+([-+.]\w+)*'  
%}  
"]  
[Engine=Fluid]
```

‡ See full list at <https://docs.microsoft.com/en-us/cpp/c-language/escape-sequences?view=msvc-160>



# Non-allowed escape sequences



```
{% assign isValidEmail = 'ted@test.com' | RegExMatch: '\w+([-+.]\w+)*@\w+([-.]\w+)*\.\w+([-.]\w+)*' %}  
{% if isValidEmail %}  
    This is a valid email!  
{% endif %}
```

## Workaround



```
{% capture expression %}\w+([-+.]\w+)*@\w+([-.]\w+)*\.\w+([-.]\w+)*{% endcapture %}  
{% assign isValidEmail = 'ted@test.com' | RegExMatch:expression %}  
{% if isValidEmail %}  
    This is a valid email!  
{% endif %}
```

Non-allowed escape sequences must be captured first and used as a variable.



## Non-allowed escape sequences (Pt 2)

```
{% assign slug = Recipe.Title | Remove:'á' | Remove:';' | Remove:''' | Remove:'\ ' | Remove:'/' | ToCssClass %}  
{{ slug }}
```

### DotLiquid Output

-X-

### Fluid Output

Lava Template Parse failed: '%' was expected at (1:94)

```
[Template="{%- assign slug = Recipe.Title |  
Remove:'á' | Remove:';' | Remove:''' | Remove:'\ '  
Remove:'/' | ToCssClass -%}{{slug}}"]
```

[Engine=Fluid]



## Non-allowed escape sequences (Pt 2)

```
{% assign slug = Recipe.Title | Remove:'á' | Remove:';' | Remove:'"' | Remove:'\ ' | Remove:'/' | ToCssClass %}  
{{ slug }}
```

### Reason

This works as written in DotLiquid, but fails in Fluid because the `\` sequence is a Fluid escape sequence but then the argument is missing a `'` – but regardless this changes the original intent of the `Remove` operation.

**Use `{% capture %}` instead.**



# Split differences

```
{} ' ' | Split:', ' | Size {}  
{} null | Split:', ' | Size {}  
{} 'Word' | Split:', ' | Size {}
```

## DotLiquid Output

1  
1  
1

## Fluid Output

0  
0  
1



# Include Lava Scope Behavior

```
x.lava
{% assign a = 'B' %}
```

```
{% assign a = 'A' %}
a: {{ a }}
{% include '~/x.lava' %}
a is now: {{ a }}
```

DotLiquid Output

a: A  
a is now: B

Fluid Output

a: A  
a is now: A

Variables defined inside an `include` no longer leak out in Fluid



# Double Single Quote Usage

You cannot use a single quote inside something that is single quoted.



```
{% assign a = 'I can't see the issue.' %}  
result: {{ a }}
```

## DotLiquid Output

I can

## Fluid Output

Lava Error: Create Lava Template failed.: Syntax error, expected: |, }, +, -, \*, /, %, ==, >, <, >=, <=, <>, !=, contains, and, or, ], %} at line:22, col:30

**OR**

Lava Error: Lava Template Parse failed: An identifier was expected after the 'assign' tag at (1:112) [Engine=Flu...



# Nested Comment Tags

You cannot nest comments.



```
{% comment %}  
Outer Comment  
{% comment %}Inner Comment{% endcomment %}  
{% endcomment %}  
Start of Text
```

## DotLiquid Output

Start of Text

## Fluid Output

Lava Template Parse failed: Unknown tag  
'endcomment' at (1:75)

```
[Template="{%comment%}Outer  
Comment{%comment%}Inner  
Comment{%endcomment%}{%endcomment%}Start of  
Text"]
```

[Engine=Fluid]





# Conditional Operator '&&'

The && is not supported (it's supposed to be “and”).

```
{% assign speed = 50 %}  
{% if speed > 40 && speed < 60 %}  
Acceptable speed.  
{% else %}  
Incorrect speed.  
{% endif %}
```

## DotLiquid Output

Acceptable speed.

## Fluid Output

Lava Template Parse failed: Invalid 'if' tag at (2:6)

```
[Template="{% assign speed = 50 %}  
{% if speed > 40 && speed < 60 -%}Acceptable  
speed.{% else %}Incorrect speed.{% endif -%}"]
```

[Engine=Fluid]



## Sort Filter 'asc' and 'desc'

That optional parameter is not supported

```
{% assign sorted = Campuses | Sort:'Name','desc' %}
```

### DotLiquid

This was a custom change we made to DotLiquid.

### Fluid

No error is thrown, but the items are not sorted descending.



## Sort Filter 'asc' and 'desc'

That optional parameter is not supported

```
{% assign sorted = Campuses | Sort:'Name','desc' %}
```

### Workaround

```
{% assign sorted = Campuses | OrderBy:'Name desc' %}
```



# Empty Output Tag "{{- -}}"

This empty output tag is not supported

```
{{- -}}
```

## DotLiquid

The empty output tag "" is sometimes used in Liquid to trim whitespace to the left or right of the tag.

## Fluid Output

Lava Template Parse failed: A value was expected at (1:26)

```
[Template="The empty output tag "{{- -}}" is sometimes used in  
Liquid to trim whitespace to the left or right of the tag. This  
syntax is supported in DotLiquid.  
"]
```

```
[Engine=Fluid]
```



## Empty Output Tag "{{- - }}"

This empty output tag is not supported

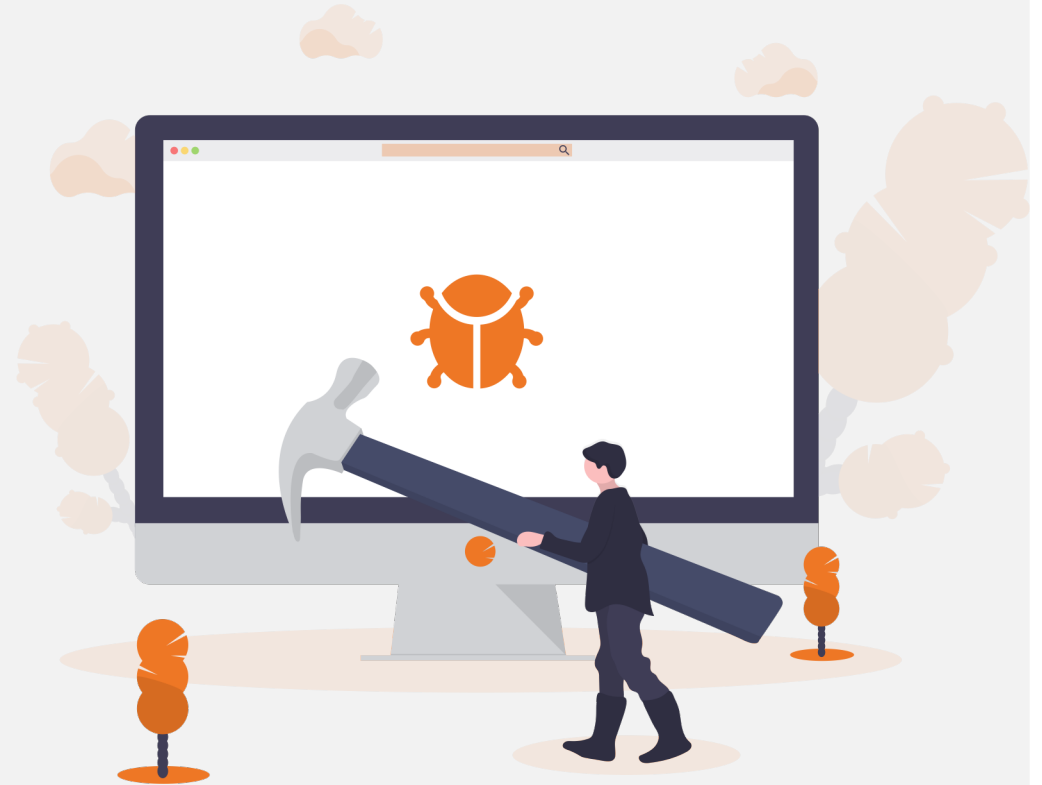
```
{{- -}}
```

### Workaround

```
{{- ' ' -}}
```



# Bad Lava Breaks Everything





# Bad Lava Breaks Everything

```
{{ CurrentPerson.NickName }}, this is good lava.
```

```
{% group g where: 'GroupId == 2 5' %}  
  {% for group in groupItems %}  
    {{ group.Name }}  
  {% endfor %}  
{% endgroup %}
```

## DotLiquid Output

Alisha, this is my good lava.

Liquid error: Error in Where expression

## Fluid Output

Error in Where expression



## Bad Lava Breaks Everything (Pt 2)

```
•••  
{{ CurrentPerson.NickName }}, this is good lava.
```

```
{% group where: 'GroupId == 25' %}  
  {% for group in groupItems %}  
    {{ group.Name }}  
  {% endfor %}  
{% endgroup %}
```

### DotLiquid Output

Error resolving Lava merge fields: 'end' is not a valid delimiter for group tags. Use endgroup

### Fluid Output

Lava Template Parse failed: Invalid '{% group %}' tag at (2:9)

[Template="<p>{{CurrentPerson.NickName}}, this is my good lava.</p>"]

[Continued]





## Bad Lava Breaks Everything (Pt 3)

```
{{ CurrentPerson.NickName }}, this is good lava.
```

```
{% group where: 'GroupId == 25' %}  
  {% for group inn groupItems %}  
    {{ group.Name }}  
  {% endfor %}  
{% endgroup %}
```

### DotLiquid Output

Error resolving Lava merge fields: Syntax  
Error in 'for' tag - Valid syntax: for [item] in  
[collection]

### Fluid Output

Invalid 'for' tag



## Fluid Conclusions

- Faster Performance.
- Better, more accurate Lava error checking.



# Community Lava Developers





# Update Custom Lava Components

```
using Rock.Lava;
```

We have a write-up under the [/TechnicalReleaseNotes](#) for v13 that explains some steps you may need to follow if you are using Lava in your custom blocks or plugin components.



# Questions / Answers

If there is time available

