

Increasing Efficiency in Code and Hardware by Implementing NeoLoad *Test as Code*

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- 17 Years in Software Testing (16 in Performance Analysis)
- Prior to current role, I worked for US Air Force & Fidelity Investments
- Joined LexisNexis in summer of 2017

What we'll talk about.

- What is *Test as Code*
- How does it differ from standard NeoLoad tests
- What we've implemented
- Benefits we've seen



The problem.



```
! search.yaml x
1 name: YAML Example
2 variables:
3 - constant:
4   name: serverName
5   value: google
6 sla_profiles:
7 - name: exampleSLA
8   thresholds:
9     - avg-request-resp-time warn >= 5000ms
10    - perc-transaction-resp-time (p90) warn >= 7500ms
11 servers:
12 - name: myServer
13   host: www.${serverName}.com
14   scheme: http
15 user_paths:
16 - name: hitServerUserPath
17   actions:
18     steps:
19       - transaction:
20         name: hitServerTransaction
21         sla_profile: exampleSLA
22         steps:
23           - request:
24             name: hitServerRequest
25             sla_profile: exampleSLA
26             url: /
27             server: myServer
28             method: GET
29           - think_time: 250ms
30 populations:
31 - name: yamlPopulation
32   user_paths:
33   - name: hitServerUserPath
34     distribution: 100%
35 scenarios:
36 - name: yamlScenario
37   populations:
38   - name: yamlPopulation
39     constant_load:
40       users: 5
41     duration: 1m30s
```

The solution.

```
C:\Program Files\NeoLoad 6.9\bin>NeoLoadCmd.exe -NTS http://
*****:8080 -NTSLogin Jenkins_CI_Tester:*****
***** -leaseLicense *****
*****:5:1 -project C:\NeoLoadExample\
empty\empty.nlp C:\NeoLoadExample\search.yaml -launch yamlSc
enario
```



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- With Jenkins we've **automated** the process of starting and stopping pieces of our NeoLoad stack **when needed**
- This allows us to **save money** that was being spent on our testing instances
- Still have a few static machines up but we are working towards only having the Team Server and NeoLoad Web up full time for licensing and results.



! searchVariables.yaml x

```
1 |name: YAML Example
2 |variables:
3 | - constant:
4 |   name: serverName
5 |   value: google
```

! searchPopulation.yaml x

```
1 |populations:
2 | - name: YAMLPopulation
3 |   user_paths:
4 |     - name: LoadServer
5 |       distribution: 100%
```

! searchUsersPath.yaml x

```
1 |user_paths:
2 | - name: hitServerUserPath
3 |   actions:
4 |     steps:
5 |       - transaction:
6 |         name: hitServerTransaction
7 |         sla_profile: exampleSLA
8 |         steps:
9 |           - request:
10 |            name: hitServerRequest
11 |            sla_profile: exampleSLA
12 |            url: /
13 |            server: myServer
14 |            method: GET
15 | - think time: 250ms
```

! searchSLAs.yaml x

```
1 |sla_profiles:
2 | - name: exampleSLA
3 |   thresholds:
4 |     - avg-request-resp-time warn >= 5000ms
5 |     - perc-transaction-resp-time (p90) warn >= 7500ms
```

! searchScenario.yaml x

```
1 |scenarios:
2 | - name: yamlScenario
3 |   populations:
4 |     - name: yamlPopulation
5 |       constant_load:
6 |         users: 5
7 |         duration: 1m30s
```

! searchServers.yaml x

```
1 |servers:
2 | - name: myServer
3 |   host: www.${serverName}.com
4 |   scheme: http
```

```
C:\Program Files\NeoLoad 6.9\bin>NeoLoadCmd.exe -NTS http://
*****:8080 -NTSLogin Jenkins_CI_Tester:*****
***** -leaseLicense *****
*****:5:1 -project C:\NeoLoadExample\
empty\empty.nlp C:\NeoLoadExample\searchPopulation.yaml C:\N
eoLoadExample\searchScenario.yaml C:\NeoLoadExample\searchSe
rvers.yaml C:\NeoLoadExample\searchUsersPath.yaml C:\NeoLoad
Example\searchVariables03.yaml C:\NeoLoadExample\searchSLAs.
yaml -launch yamlScenario
```

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- Storing a test's definition in multiple YAML files provides us the ability to **switch between several different tests** based upon variables.
 - These **variables can be set manually** set at run time:

```
! searchVariables.yaml x
1 |name: YAML Example
2 |variables:
3 | - constant:
4 |   name: serverName
5 |   value: google
```

Pipeline Run_Perf_in_Pipeline

This build requires parameters:

Environment	<input type="text" value="environmentName"/> <small>Enter the environment the test will be in</small>
Service	<input type="text" value="serviceName"/> <small>Enter the name of the service to be tested</small>
Number_of_Load_Generators	<input type="text" value="3"/> <small>Number of Load Generators needed for the test</small>

```
! searchVariables01.yaml x
1 |name: YAML Example
2 |variables:
3 | - constant:
4 |   name: serverName
5 |   value: bing
```

```
! searchVariables02.yaml x
1 |name: YAML Example
2 |variables:
3 | - constant:
4 |   name: serverName
5 |   value: neoload
```

- Or **passed from other Jenkins jobs** that want tests to be executed and wait for results

CL.PERF

data

autocomplete

searchTerms.csv

csr

HAMR

Jenkins

Jenkinsfile

Projects

python

YAML

populations

scenarios

servers

SLA

user_paths

variables

! scenarioDefinitions.yml

```
stage('Run NeoLoad') {
  steps {
    script {
      try {
        sh "sleep ${env.Run_Sleep_Time}"
        sh "\"/usr/local/bin/NeoLoadCmd\" --noGUI -NTS http://${env.NLTeamServerURL} -NTSLogin \"${env.NLTeamServerUser}:${env.NLTeamServerPassword}\" -leaseLicense \"${env.NLLicense}:${env.NLUsers}:${env.NLTime}\" -project \"${WORKSPACE}/Projects/${env.service}/${env.service}.nlp\" \"${WORKSPACE}/YAML/populations/${env.Service}.yaml\" \"${WORKSPACE}/YAML/scenarios/${env.Service}.yaml\" \"${WORKSPACE}/YAML/servers/${env.Service}/${env.Environment}.yaml\" \"${WORKSPACE}/YAML/SLA/${env.Service}.yaml\" \"${WORKSPACE}/YAML/user_paths/${env.Service}.yaml\" \"${WORKSPACE}/YAML/variables/${env.Service}.yaml\" -launch ${env.Service} -nlweb -nlwebAPIURL \"http://${env.NLWebURL}\" -nlwebToken ${env.NLWebToken} --override-lg ${WORKSPACE}/${env.Second_IP_File}"
      }
      catch(ex) {
        println("Run NeoLoad stage failed with this error: ${ex.getMessage()}\n")
        println("Stack trace:\n ${Arrays.toString(ex.getStackTrace())}\n")
      }
    }
  }
}
```

The mistakes people make.

- YAML *formatting* is serious business
- NeoLoad 6.9 and earlier requires a NeoLoad project (.nlp) file to be referenced with Test as Code
- Our goal is to simplify things. *Don't over-complicate* your solutions

Links and resources.

- NeoLoad Resources updated with v6.10
 - [NeoLoad's *Test as Code* Syntax Documentation](#)
 - [NeoLoad's Command Line Syntax](#)
- Repository with examples from this presentation
 - <https://github.com/habereet/NeoLoadPresentation>

Q and A

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