How to Conduct Performance Tests and Share Results

Prerequisites

1. Download and install jmeter: http://jmeter.apache.org
    a. Ubuntu 16.04 LTS: installjmeter.sh

```
#!/bin/bash

# get source from an apache mirror
wget http://supergsego.com/apache//jmeter/binaries/apache-jmeter-3.2.tgz
# verify the md5

local_md5=`md5sum apache-jmeter-3.2.tgz | cut -f 1 -d ' '`
remote_md5=`curl https://www.apache.org/dist/jmeter/binaries/apache-jmeter-3.2.tgz.md5 | cut -f 1 -
d ' '`

if [ "$local_md5" != "$remote_md5" ]
then
  echo "md5's do not match"
  exit
else
  echo "congratulations md5s match"
fi

# untar it.
tar xvfz apache-jmeter-3.2.tgz
# move it
sudo mv apache-jmeter-3.2 /usr/local/apache-jmeter-3.2
# link it
sudo ln -s /usr/local/apache-jmeter-3.2/bin/jmeter /usr/bin/jmeter
```

Instance setup and documentation

1. Fedora 4 Specs
    a. AWS

OS	Instance Type	vCPU	Memory	Storage (EBS or SSD)	Java	Fedora 4	Java configuration options (e.g. -Xmx 2G)	Binary Configuration (local, network, S3)
					Java 8	4.7.3		

    b. On-premises

OS	Processor Speed	Cores	Memory	Storage (SSD or Hard Disk)	Java	Fedora 4	Java configuration options (e.g. -Xmx 2G)	Binary Configuration (local, network, S3)
					Java 8	4.7.3		

2. Database Specs (Using JDBC object store)
    a. type (mysql, postgresql, aurora, etc)
    b. if using a remote database
        i. processor speed
        ii. processor count
        iii. RAM
        iv. if RDS, RDS type (e.g. db1.small)
3. JMeter client specs:
    a. AWS:

OS	Instance Type	vCPU	Memory	Storage (EBS or SSD)	Java	JMeter
Ubuntu 16.04 LTS	t2.small	1	2GB	EBS	Java 8	v3.1

b. On-premises

OS	Processor Speed	Cores	Memory	Storage (SSD or Hard Disk)	Java	JMeter

Fedora 4

1. Installation:
    a. Fedora 4 Quick Start
    b. Deploying Fedora 4 Complete Guide
    c. Database: Configuring JDBC Object Store
    d. Fedora 4 Ansible script: https://github.com/VTUL/fcrepo4-ansible
    e. Fedora version (Start from 4.7.3)
    f. Using database? (local or remote)

Generate Test Data

1. Download the test scripts and read the README (https://github.com/fcrepo4-labs/fcrepo4-jmeter)

```
git clone https://github.com/fcrepo4-labs/fcrepo4-jmeter.git
```

2. Run a test. See each test JMeter command in README. For example, below code block is Test 4 JMeter command:

```
jmeter -Dfedora_4_server=SERVERIP -Dfedora_4_port=PORT -Dfedora_4_context=fcrepo/rest -
Dcontainer_threads=1 -n -t /path/to/fcrepo4-jmeter/fedora.jmx
```

Generate Graphs Based on Your Test Data

1. Clone the Performance Analysis Project

```
git clone https://github.com/fcrepo4-labs/fcrepo_perf_analysis.git
```

2. Download and install the latest version of R https://www.r-project.org/

    a. Ubuntu 16.04 LTS: installr.sh
    b. Start R shell

    ```
    R
    ```

    c. Install R Packages: ggplot2, knitr, rmarkdown, svglite

    ```
    install.packages("ggplot2")
    install.packages("knitr")
    install.packages("rmarkdown")
    install.packages("svglite")
    ```

3. Follow steps outlined in https://github.com/fcrepo4-labs/fcrepo_perf_analysis

    a. Run all steps in one command using createreport.sh:

    ```
    ./createreport.sh perf.log report
    ```

Share Your Results with the Community

- Performance Test Result template