Beaker Builder Plugin

This plugin ingrates Jenkins with Beaker.

Beaker is open-source software for managing and automating labs of test computers. Plugin allows you to submit a job definition to Beaker and get back the result.

Current plugin capabilities are

- schedule a job (includeing matrix job) in Beaker based on provided job XML definition, job definition can be provided
    - directly in Jenkins job configuration
    - as a path to a file in workspace (e.g. previously checked out from SCM)
- expand parameters in job XML definition based on Jenkins job parameters or environment variables
- monitor the Beaker job and sets the job status according to Beaker job result
- add link to Beaker job on build page
- export job ID as an environment variable for further usage (e.g. in subsequent shell build step)
- download job files from Beaker into workspace

Configuration

In the main Jenkins configuration page you have to setup URL to Beaker and also credential (login/password) under which Jenkins logs-in into the Beaker. Kerberos authentication is currently not supported (will be hopefully in next versions).

Dealing with certificate and keystore

Usually XML-RPC calls which this plugin uses for communication with Beaker are sent over https protocol. If you use **https protocol**, make sure you have set up java **keystore with valid certificate**, it means you have added Beaker certificate into you java keystore and provide path and password of the keystore to webserver. To add certificate into java keystore, save the certificate (e.g. export the certificate from your web browser) and run

```
keytool -import -keystore my_java_keystore.jks -file beaker_cert.pem -
alias beaker-server
```

To verify that the certificate was imported you can run following command which will list all entries in the keystore

```
keytool -list -keystore my_java_keystore.jks
```

Now add following java options to your Jenkins java options (or server JVM options when running on different container than Winstone)

```
    -Djavax.net.ssl.trustStore=/path/to/keystore.jks -Djavax.net.ssl.
    trustStorePassword=<passwd>
```
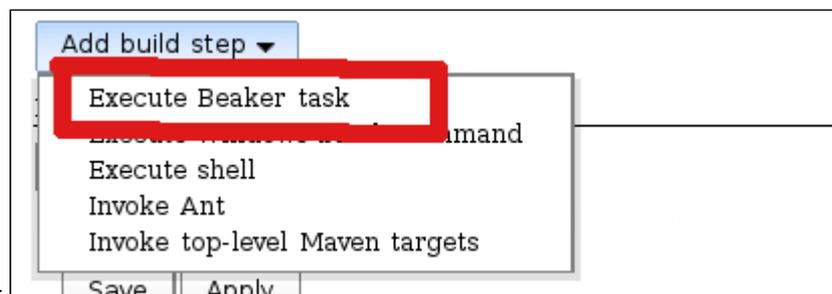
Configuration issues

When you use Java 7, you may observe following issue in the log:

```
Jul 31, 2013 12:21:59 AM org.apache.commons.httpclient.
HttpMethodDirector executeWithRetry
INFO: I/O exception (javax.net.ssl.SSLProtocolException) caught when
processing request: handshake alert:  unrecognized_name
Jul 31, 2013 12:21:59 AM org.apache.commons.httpclient.
HttpMethodDirector executeWithRetry
INFO: Retrying request
```

To avoid it, turn off SNI by adding java option *-Djsse.enableSNIExtension=false* so that java options which needs to be add to Jenkins cofing are following:

```
    -Djavax.net.ssl.trustStore=/path/to/keystore.jks -Djavax.net.ssl.
    trustStorePassword=<passwd> -Djsse.enableSNIExtension=false
```

Usage

Add "Beaker buidler" build step:

Define job XML or provide path to job XML definition file. Job XML definition can contain parameters which will be expanded before submitting job XML to Beaker:

You can also specify path to job XML, which can include job parameters or env. variables. This is useful e.g. in cases when you job definition is different for various architectures or OS distributions. This is especially useful in case of matrix jobs, when values of matrix axes are exported as env. variables, so you can take advantage of matrix jobs even if you job definition is different for each matrix combination.

In subsequent tasks you can use BEAKER_JOB_ID parameter which will contain submitted job ID in Beaker:

Once you schedule a build and job is successfully submitted to the Beaker server, new link pointing to the job will appear in build menu:

Plugin will monitor th execution of Beaker job periodically, will send notification to the Jenkins build console and will set the job result according to Beaker job result:


```
Started by user vjuranek@REDHAT.COM
[EnvInject] - Loading node environment variables.
Building remotely on vmg32 in workspace /mnt/hudson_workspace/workspace/beaker-builder-param-test
[Beaker] INFO: Job XML file prepared
[Beaker] INFO: Job successfuly submitted to Beaker, job ID is J:457531
[Beaker] INFO: Job has changes state from NEW state to state QUEUED
[Beaker] INFO: Job has changes state from QUEUED state to state WAITING
[Beaker] INFO: Job has changes state from WAITING state to state RUNNING
[Beaker] INFO: Job has changes state from RUNNING state to state ABORTED
[Beaker] INFO: Job finished
Build step 'Execute Beaker task' changed build result to UNSTABLE
[beaker-builder-param-test] $ bash -xe /tmp/hudson4921036681148481374.sh
+ echo 'executing shell task'
executing shell task
+ echo 'previous Beaker job ID is 457531'
previous Beaker job ID is 457531
Notifying upstream projects of job completion
Finished: UNSTABLE
```

Additional actions

You can also configure additional actions, currently only downloading job files from Beaker:

The files are downloaded into $WORKSPACE/beaker/J_$BEAKER_JOB_ID:


```
Started by user vjuranek@REDHAT.COM
[EnvInject] - Loading node environment variables.
Building remotely on vmg32 in workspace /mnt/hudson_workspace/workspace/beaker-builder-download-files
[Beaker] INFO: Job XML file prepared
[Beaker] INFO: Job successfuly submitted to Beaker, job ID is J:526206
[Beaker] INFO: Job has changed state from NEW state to state RUNNING
[Beaker] INFO: Job has changed state from RUNNING state to state COMPLETED
[Beaker] INFO: Job finished
[Beaker] INFO: Trying to download job file into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206
[Beaker] INFO: Downloading console.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/console.log
[Beaker] INFO: Downloading anaconda.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/anaconda.log
[Beaker] INFO: Downloading sys.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/sys.log
[Beaker] INFO: Downloading ks.cfg into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/ks.cfg
[Beaker] INFO: Downloading storage.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/storage.log
[Beaker] INFO: Downloading program.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/program.log
[Beaker] INFO: Downloading install.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/install.log
[Beaker] INFO: Downloading grub.conf into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/grub.conf
[Beaker] INFO: Downloading boot.log into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/boot.log
[Beaker] INFO: Downloading messages into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/messages
[Beaker] INFO: Downloading dmesg into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/dmesg
[Beaker] INFO: Downloading .task_beah_raw into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/.task_beah_raw
[Beaker] INFO: Downloading anaconda-ks.cfg into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/anaconda-ks.cfg
[Beaker] INFO: Downloading grub.conf into /mnt/hudson_workspace/workspace/beaker-builder-download-files/beaker/J_526206/grub.conf
```

TODO

- Kerberos support for authentication on Beaker server

Changelog

Upcoming changes

Release 1.8 (2015-05-30)

- Tmp files with Beaker recipes are not created any more (pull3)
- Improved test coverage (pull2)
- Beaker client and identity are now created only when need, not during saving global configuration (pull1)
- Removed unused `Job name` field

Release 1.7 (2015-01-18)

- Fixed NPE when resolving variables (JENKINS-27003)
- Improved logging

Release 1.6 (2014-11-24)

- XML escaping when substituting variables into Beaker job XML (pull1)

Release 1.5 (2013-11-13)

- Fixed inconsistent authentication behavior (e.g. misleading message return by "Test connection" button in global configuration)

Release 1.4 and 1.4.1 (2013-10-23)

- Added possibility download job files from Beaker
- Release 1.4.1 fixes possible NPE when downloading files

Release 1.3 (2013-10-08)

- Added possibility to use build parameters and build env. variables in path to job XML definition

Release 1.2 (2013-10-04)

- Fixed NPE during first startup and allow to change Beaker URL without restart

Release 1.1.1 (2013-08-16)

- Fixed problem with expired Beaker client credentials

Release 1.0 (2013-07-26)

- Initial release