Maintaining and using pools of external resources using Lockable Resources Plugin

Contents
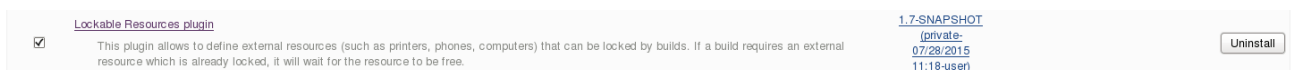
Requirements

https://wiki.jenkins-ci.org/display/JENKINS/Lockable+Resources+Plugin with the following changes:

- JENKINS-29529 - Master job uses one of the resources
  - https://github.com/jenkinsci/lockable-resources-plugin/pull/9
- JENKINS-29553 - Remove queue sorter
  - https://github.com/jenkinsci/lockable-resources-plugin/pull/11
- JENKINS-29585 - Allow selecting resources from axis values of matrix projects
  - https://github.com/jenkinsci/lockable-resources-plugin/pull/12

Cooked version on github: https://github.com/nikolay-martynov/lockable-resources-plugin/tree/cooked

☑	**Lockable Resources plugin** This plugin allows to define external resources (such as printers, phones, computers) that can be locked by builds. If a build requires an external resource which is already locked, it will wait for the resource to be free.	1.7-SNAPSHOT (private-07/28/2015 11:18-user)	Uninstall

Note: if updating from official, first verify that changes are actually implemented.

System configuration

Resources

Four nodes with database. Two nodes of version 1 and two nodes of version 2.

It's best to set resource name as <resource type>_<node name> so that it's easy to get name of node where it is hosted from resource name.

Lockable Resources

Resource

Name   db on slave db 1

Description

Labels   db_on_slave dbv1

Reserved by

Resource

Name   db on slave db 2

Description

Labels   db_on_slave dbv1

Reserved by

Resource

Name | db on slave db 3

Description |

Labels | db_on_slave dbv2

Reserved by |

Resource

Name | db on slave db 4

Description |

Labels | db_on_slave dbv2

Reserved by |

Add Lockable Resouce

Nodes

It's best to set node in a way that allows to determine host name and correlate node name with resource name.

For the matter of resource management, it doesn't matter which labels are assigned to nodes with resources. However, for the purpose of selecting nodes with resources using ElasticAxis plugin, we still need resource nodes to have some common label. But again, resource management doesn't care about these labels assigned on node level.

S	Name ↓
🖥	db 1
🖥	db 2
🖥	master
🖥	worker 1
🖥	worker 2
🖥	worker 3
	Data obtained

Maintenance job

Do something on every node with resource. The resource should be locked when job is run.

Job configuration

Matrix configuration

▦ **ElasticAxis**

Elastic Axis	node

Node Label	db

Skip building on offline nodes ☐

Resource configuration

☑ This build requires lockable resources

Resources	

Label	groovy:resourceName.contains(node.replace("\"",""))

Reserved resources variable name	dbhost_to_use

Number of resources to request	1

Elastic axis adds " around node name sometimes so we do remove quotes as well.

Build steps

Execute shell

Command
```
echo "$node -> $dbhost_to_use"
```

See the list of available environment variables

Result

```
Building remotely on db 2 (db amd64-RedHatEnterpriseWorkstation
workspace /tmp/workspace/test_job_m/node/"db 2"
["db 2"] $ /bin/sh -xe /tmp/hudson3915818306598947292.sh
+ echo '"db 2" -> db on slave db 2'
"db 2" -> db on slave db 2
[lockable-resources] released lock on [db on slave db 2]
```

Certification job

Testing a product requires usage of the shared resource hosted out of server where test job will be run. There are two versions of test resource and it needs to be verified that the product can run with both of them (certification testing).

Job configuration

Matrix configuration

User-defined Axis

Name   dbver

Values   dbv1 dbv2

If nodes, that host resources, have labels indicating version and type of resource then these labels could be selected via axis of type "Slaves".

Resource configuration

☑ This build requires lockable resources

Resources

Label   groovy:resourceLabels.contains(dbver)

Reserved resources variable name   dbhost_to_use

Number of resources to request   1

Build steps

Execute shell

Command
```
echo "$dbver -> $dbhost_to_use"
```

See the list of available environment variables

Result

```
Building remotely on worker 2 (amd64-RedHatEnterpriseWorks1
amd64) in workspace /tmp/workspace/test_job_m/dbver/dbv2
[dbv2] $ /bin/sh -xe /tmp/hudson8502138295015656848.sh
+ echo 'dbv2 -> db on slave db 3'
dbv2 -> db on slave db 3
[lockable-resources] released lock on [db on slave db 3]
```