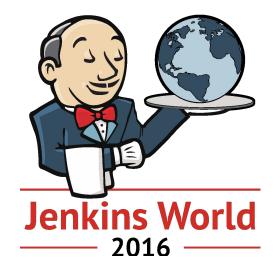
External Workspace Manager Plugin for Jenkins Pipeline

Alexandru Somai



#JenkinsWorld

• GSoC Student at Jenkins project

- >2 years experience in Software Development
- Major in Software Engineering at Babes-Bolyai University of Cluj-Napoca, Romania



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@alex somai







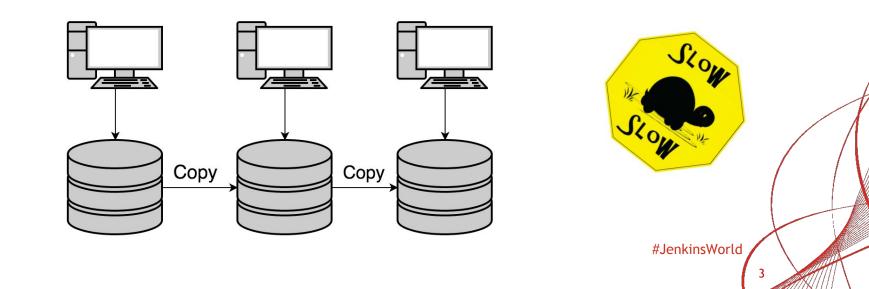
BABEŞ-BOLYAI UNIVERSITY Faculty of Mathematics and Computer Science







- Difficult to reuse the same workspace for multiple jobs
- e.g. Running parallel testing across nodes





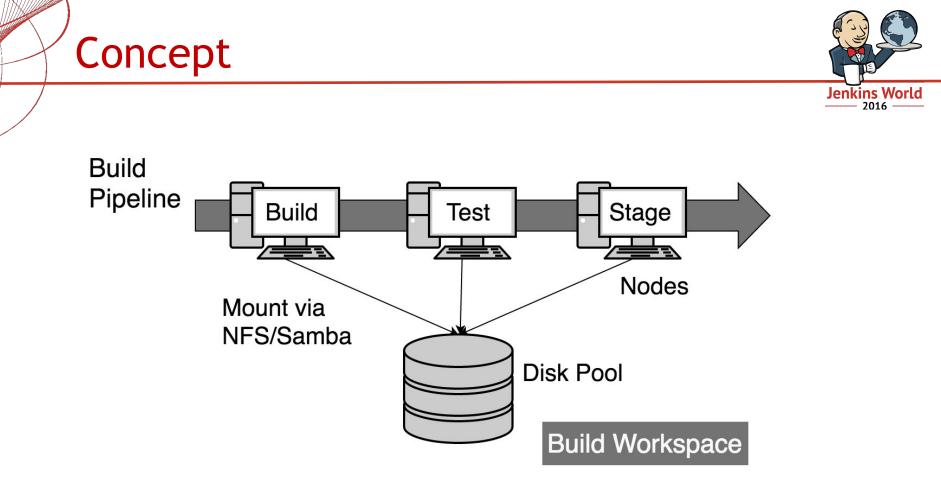
- Stash/unstash pre-made artifacts (single pipeline)
- Copy Artifacts plugin
- Advanced job setting
 - custom workspace (freestyle)
 - ws (pipeline)





- Google Summer of Code 2016 project
 - Mentors: Oleg Nenashev & Martin d'Anjou
- Jenkins plugin
- Focus on Pipeline jobs
- Share and reuse workspaces across multiple jobs
 - No need to copy, archive or move files

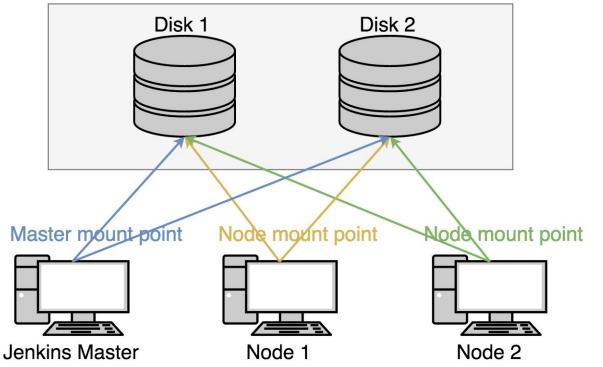




Infrastructure



Disk Pool



Disk Pool		Jenkins global config					
Disk Pool ID	diskpool1	ochiking global ooning	0				
Display Name	Disk Pool One						
Description	A summary description of this Disk Pool						
Workspace path template			0				
Disk Pool Restriction	No restriction (take any)						
Disk Allocation Strategy	Select the Disk with the	most usable space	¢ ()				
C	Disk						
Disk 1	Disk ID	disk1	0				
	Display Name Disk One						
	Master mount point	/aster mount point /mount-from-master/to/disk-one					
	Physical path on disk	jenkins-project/disk1	•				
	Disk Information	No Disk Info \$	0				
		Delete Disk					
C	Disk						
Disk 2	Disk ID	disk2	0				
	Display Name	Disk Two	0				
	Master mount point	/mount-from-master/to/disk-two	0				
	Physical path on disk	jenkins-project/disk2	0				
	Disk Information	No Disk Info					

Selete Disk

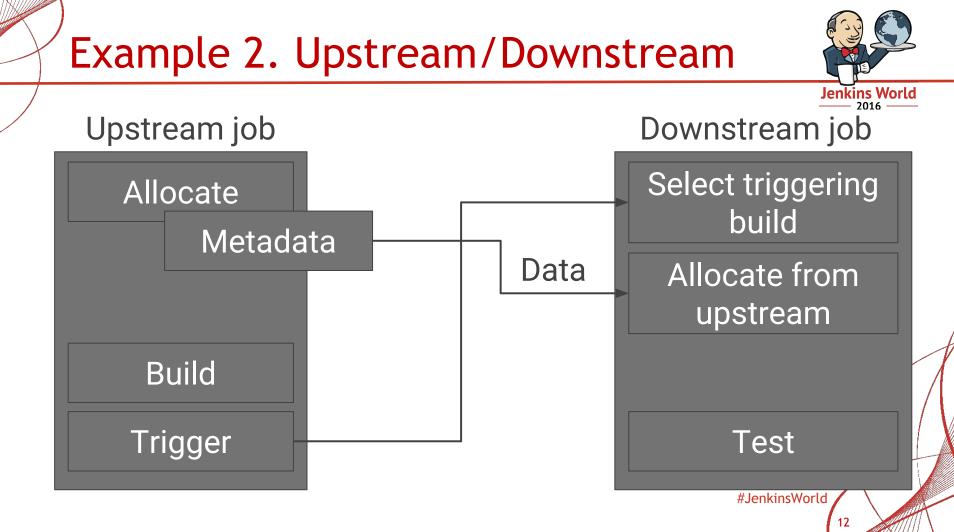
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Add Disk			nour point	/mount-from-linux-node/to/disk-two	Master mount point	/mount-from-master/to/dis	sk-two		0	
					Physical path on disk	jenkins-project/disk2			0	
			Add Disk		Disk Information	No Disk Info		#JenkinsWorld	÷ 🕐	

External Workspa	ce Definitions						
A			Disk Pool Disk Pool ID	diskpool1	Jenkins global con 🕼 🤇	2	0
Node	e 2 co	onfig	Display Name	Disk Pool One			0
Labels	test			A summary description	of this Disk Pool Jenkins Wo	rld	0
Usage	Use this node as	much as possible	e				0
Launch method	Launch agent via	Java Web Start		No restriction (take any)	\$	0
Availability	Keep this agent o	nline as much as po	ssible	Select the Disk with the	e most usable space	\$	2
Node Properties				Disk Disk ID			
Environment varial	bles			DISKID	disk1		
 External Workspace 	External Workspace Disk Pool		Display Name	Disk One	0		
	Disk Pool Ref ID	diskpool1		Master mount point	/mount-from-master/to/disk-one	0	
		Disk Disk Ref ID		Physical path on disk	jenkins-project/disk1	0	
		Diatriorid	disk1	Disk Information	No Disk Info	•	
		Node mount point	E:\mount-from-test-node\to\disk-one		Delete Disk		
				III Disk			
		Disk Disk Ref ID		Disk ID	disk2		
			disk2	Display Name	Disk Two	0	
			E:\mount-from-test-node\to\disk-two	Master mount point	/mount-from-master/to/disk-two	0	
				Physical path on disk	jenkins-project/disk2	0	
		Add Disk		Disk Information	No Disk Info #JenkinsWorld	\$	

Example 1. Usage in a single job



```
def extWorkspace = exwsAllocate 'diskpool1'
node ('linux') {
    exws (extWorkspace) {
      checkout scm
      sh 'mvn clean install -DskipTests'
node ('test') {
    exws (extWorkspace) {
        sh 'mvn test'
```



Example 2. Upstream job



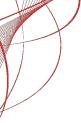
• No changes in External Workspace commands!

```
def extWorkspace = exwsAllocate 'diskpool1'
node ('linux') {
    exws (extWorkspace) {
       checkout scm
       sh 'mvn clean install -DskipTests'
build job: 'downstream-job',
   parameters: [string(
       name: 'BUILD_NUMBER_PARAM',
       value: "${currentBuild.number}")]
```



• *Run Selector Plugin* picks the upstream build

```
def run = selectRun job: 'upstream-job',
   selector: buildNumber(BUILD_NUMBER_PARAM)
def extWorkspace = exwsAllocate selectedRun: run
node ('test') {
    exws (extWorkspace) {
        sh 'mvn test'
        }
```





Demo

Advanced features



- Workspace cleanup
 - Uses Workspace Cleanup Plugin
- Provide custom workspace path
 - By default /mountPoint/pathOnDisk/\$JOB_NAME/\$BUILD_NUMBER
 - Override
 - Jenkins global config, for each Disk Pool
 - In the Pipeline script

More features



• Disk Pool restrictions

- Restrict a Disk Pool to be allocated only for specific jobs
- Integrates Job Restrictions Plugin
- Flexible Disk allocation strategies
 - Select the disk with the most usable space
 - Select the disk with the fastest write/read speed







Jenkins Open Source Hub Thursday 12:45 - 13:00







• Stable version is released!

Updates Available Installed Advanced Install 1 Name Version External Workspace Manager Plugin \checkmark 1.1.0 This plugin provides an external workspace management system. It facilitates workspace share and reuse across multiple Jenkins jobs. It eliminates the need to copy, archive or move files. Install without restart Download now and install after restart Check now Update information obtained: 55 sec ago Usage guidelines on the plugin's README page • Feedback is welcome on Jira and Gitter

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a external workspace

Filter:





• Repository

github.com/jenkinsci/external-workspace-manager-plugin

• Gitter chat

gitter.im/jenkinsci/external-workspace-manager-plugin



