

EPAM Systems, RD Dep., RD Dep.

MTN.*NIX.09

Continuous Delivery with Jenkins

MTN.*NIX.04 JBoss Application Server

Managing Build Artifacts

REVISION HISTORY					
Ver.	Description of Change	Author	Date	Approved	
				Name	Effective Date
<1.0>	Initial revision	Yahor Chupin	<1-Feb-2017>		

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Task. Managing build Artifacts

Review

Previously installed Jenkins server will be used for this task. Nexus server will be installed as an artifact repository to Kubernetes.

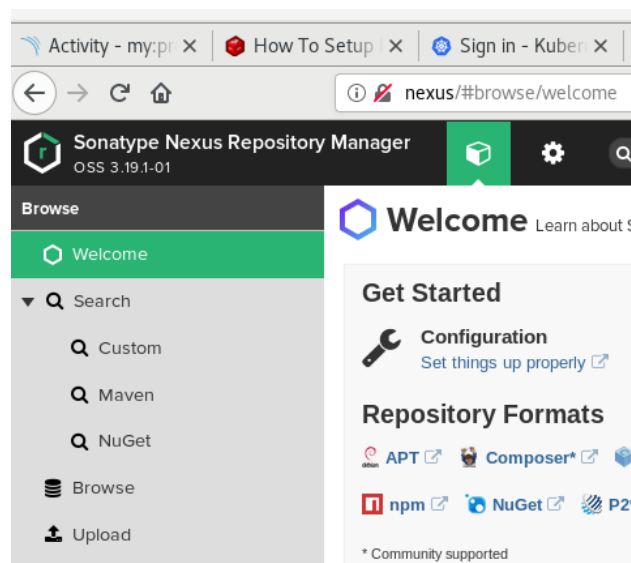
Task

1. Develop kubernetes definitions for the deployments:

Namespace

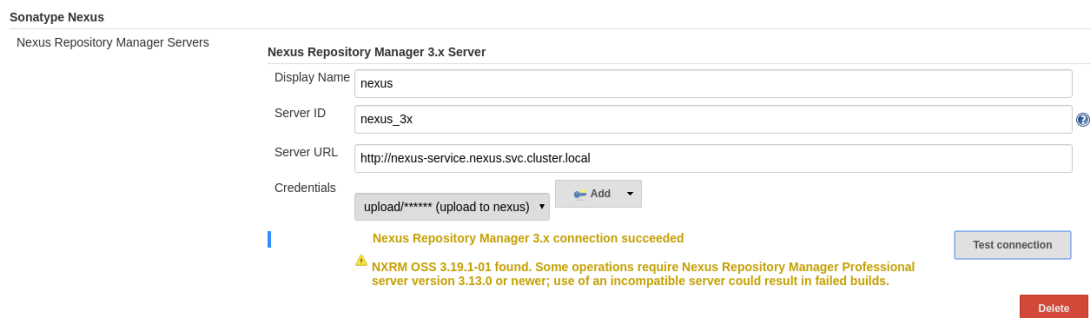
Nexus server

Configure Nginx for access to Nexus is via <http://nexus>
<https://github.com/MNT-Lab/build-tools/tree/ayanchuk>



```
[root@jenkins ~]# kubectl get po
NAME                                READY    STATUS      RESTARTS   AGE
nexus-66f57c87fc-bqntn             1/1     Running    0           9m23s
nexus-66f57c87fc-rbgx7             1/1     Terminating 0           26m
[root@jenkins ~]#
```

2. Configure Jenkins/Maven to use Nexus server for all Maven artifact downloads



- Choose some open-source project for building with Jenkins (example - <https://github.com/MNT-Lab/build-tools/tree/master/helloworld-project/helloworld-ws>). Requirement to this project – it should be Maven-based.
- Configure build section (Maven build) – should create some artifact (ARTEFACT_NAME=helloworld-\$BUILD_NUMBER)

Execute shell

Command `cd helloworld-project/helloworld-ws/target
tar -czvf helloworld-$BUILD_NUMBER.tar.gz helloworld-ws.war`

- Nexus should be used as Maven dependency proxy.

Name: groupx
Format: maven2
Type: group
URL: http://nexus/repository/groupx/
Online: ☒ If checked, the repository accepts incoming requests

Storage
Blob store: default
Strict Content Type Validation:
☒ Validate that all content uploaded to this repository is of a MIME type appropriate for the repository format

Group
Member repositories:
 Select and order the repositories that are part of this group

Available:
 maven-snapshots

Members:
 maven-central
 maven_redhat

- Create tar.gz
 Project project-x

[SonarQube](#)

[Workspace](#)

[Last Successful Artifacts](#)

Artifact	Size	Action
helloworld-14.tar.gz	45 B	view
helloworld-21.tar.gz	5.53 KB	view

[Recent Changes](#)

- Upload artifact to Nexus

Browse / project-y

[Upload component](#) [HTML View](#)

- helloworld
 - 100.02
 - Helloworld-warFile
 - hello-world-21-version
 - maven-metadata.xml
 - maven-metadata.xml.md5
 - maven-metadata.xml.sha1

!!! Don't forget about settings.xml

!!! If curl don't forget about GAV structure

Description

1. Nexus server is installed as service

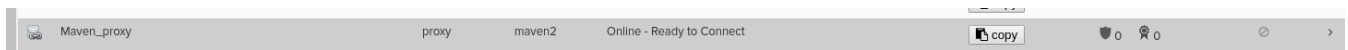
<https://github.com/MNT-Lab/build-t00ls/blob/ayanchuk/nexus/nexus.yaml>

2. Nexus is accessible via <http://nexus>

```
[root@jenkins ~]# ping nexus
PING nexus (192.168.56.240) 56(84) bytes of data.
From jenkins (192.168.56.145) icmp_seq=1 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=2 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=3 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=4 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=5 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=6 Destination Host Unreachable
From jenkins (192.168.56.145) icmp_seq=7 Destination Host Unreachable
```

3. Configuration:

- a) Create repos (Maven proxy, Artifact storage)



- b) Create user and shape permissions.



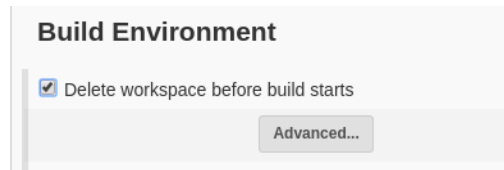
4. Jenkins local maven repository is configured to use local Nexus server.

Local Maven Repository	Default (~/.m2/repository)
# of executors	2
Labels	
Usage	Use this node as much as possible
Quiet period	5
SCM checkout retry count	0
<input type="checkbox"/> Restrict project naming	

5. There is Jenkins job created to build from VCS (GitHub)

Git	
Repositories	
Repository URL	<input type="text" value="https://github.com/MNT-Lab/build-t00ls.git"/>
Credentials	<input type="text" value="- none -"/> <input type="button" value="Add"/>
<input type="button" value="Advanced..."/>	
<input type="button" value="Add Repository"/>	
Branches to build	
Branch Specifier (blank for 'any')	<input type="text" value="refs/heads/ayanchuk"/>
<input type="button" value="Add Branch"/>	

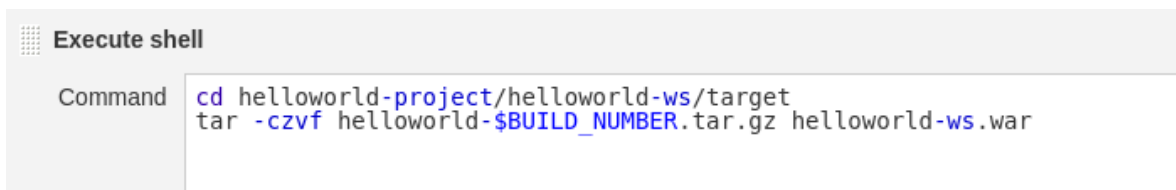
6. Build cleanup is configured



7. When Nexus is stopped and .m2 is cleared – build is failing as dependencies can't be downloaded

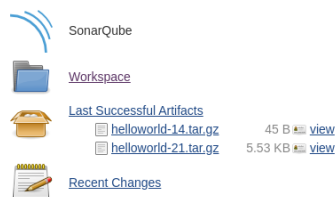
```
[INFO] Scanning for projects...
Downloading from nexus: http://nexus-service.nexus.svc.cluster.local/repository/groupx/org/jboss/jboss-parent/23/jboss-parent-23.pom
[ERROR] [ERROR] Some problems were encountered while processing the POMs:
[FATAL] Non-resolvable parent POM for org.jboss.eap.quickstarts:quickstart-parent:7.1.0.GA: Could not transfer artifact org.jboss:jboss-parent:pom:23
from/to nexus (http://nexus-service.nexus.svc.cluster.local/repository/groupx): Connect to nexus-service.nexus.svc.cluster.local:80 [nexus-
service.nexus.svc.cluster.local/10.106.106.96] failed: Connection refused (Connection refused) and 'parent.relativePath' points at no local POM @
org.jboss.eap.quickstarts:quickstart-parent:7.1.0.GA, /var/jenkins_home/workspace/project-x/helloworld-project/pom.xml, line 21, column 13
@
[ERROR] The build could not read 1 project -> [Help 1]
[ERROR]
[ERROR] The project org.jboss.eap.quickstarts:helloworld-ws:7.1.0.GA (/var/jenkins_home/workspace/project-x/helloworld-project/helloworld-ws/pom.xml)
has 1 error
[ERROR] Non-resolvable parent POM for org.jboss.eap.quickstarts:quickstart-parent:7.1.0.GA: Could not transfer artifact org.jboss:jboss-
parent:pom:23 from/to nexus (http://nexus-service.nexus.svc.cluster.local/repository/groupx): Connect to nexus-service.nexus.svc.cluster.local:80
[nexus-service.nexus.svc.cluster.local/10.106.106.96] failed: Connection refused (Connection refused) and 'parent.relativePath' points at no local POM
@ org.jboss.eap.quickstarts:quickstart-parent:7.1.0.GA, /var/jenkins_home/workspace/project-x/helloworld-project/pom.xml, line 21, column 13 -> [Help
2]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://wiki.apache.org/confluence/display/MAVEN/ProjectBuildingException
[ERROR] [Help 2] http://wiki.apache.org/confluence/display/MAVEN/UnresolvableModelException
Build step 'Invoke top-level Maven targets' marked build as failure
Archiving artifacts
Finished: FAILURE
```

8. Build is creating artifact (during Maven build)



9. Artifact is archived (visible on the build page)

Project project-x



10. Artifact is uploaded to Nexus

