Azure DevOps – aber in OpenSource

Meine Erfahrungen mit diversen OS Tools in 60 Minuten

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Lift and shift in a real world scenario…

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- Seit 01.04. bei SoftwareONE
- Vorher IT-Leiter im Mittelstand und IT-Trainer
- Schwerpunkte: Azure, PowerShell, Hyper-V, System Center, AD
- Seit 2016 Microsoft MVP
- Betreibe u.a. auch die Windows Server Usergroup Leipzig

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Microsoft® MVP Most Valuable Professional

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AGENDA

01/ Wie alles begann...

02/ OpenSource Tooling

03/ Demos

04/ Fragen / Diskussion

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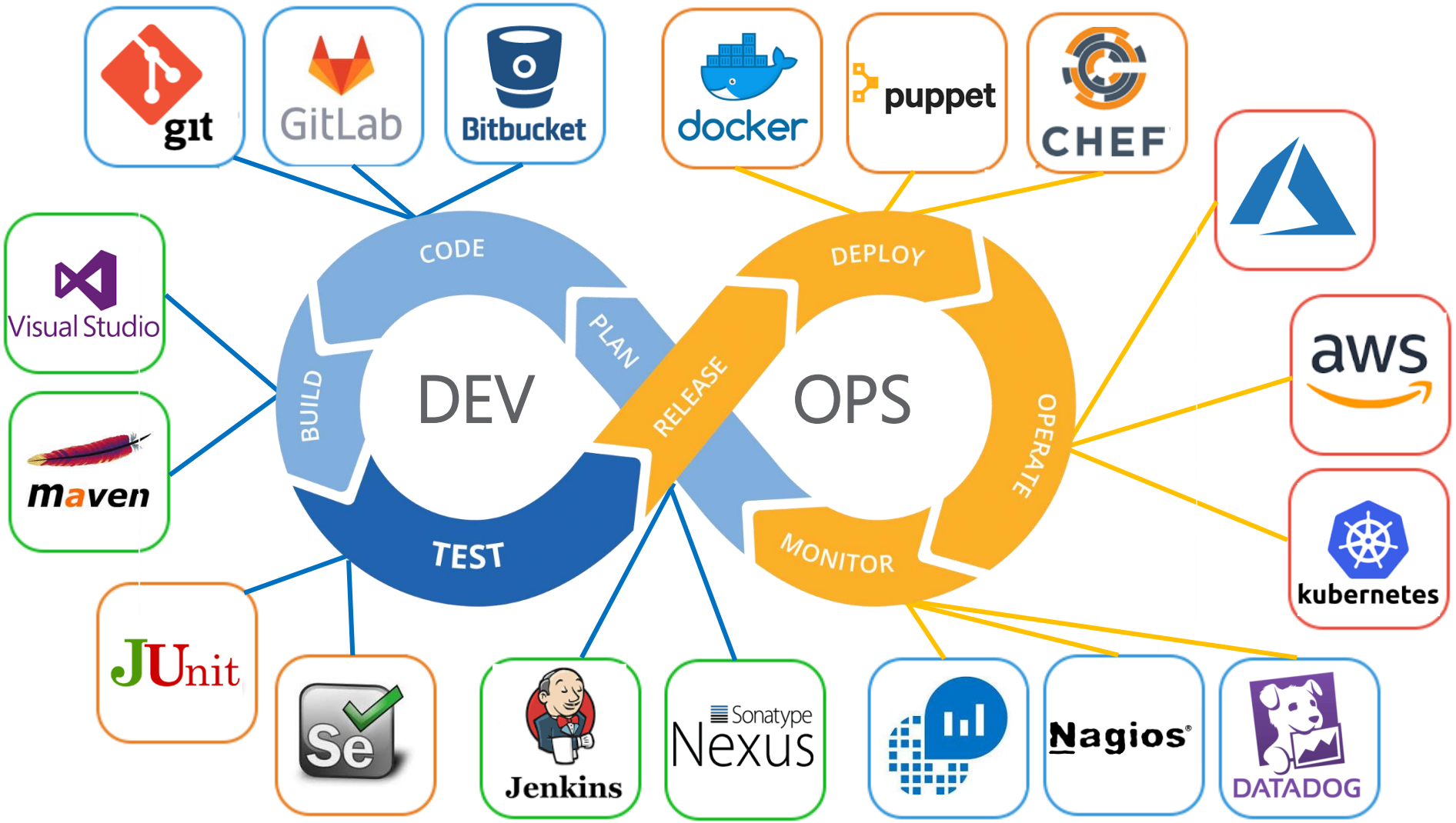
Once upon a time...

...in a company far, far away

DevOps / CI/CD


git
GitLab
Bitbucket
docker
puppet
CHEF
Visual Studio
maven
JUnit
Se
Jenkins
Sonatype Nexus
Nagios
DATADOG
aws
kubernetes
CODE
PLAN
BUILD
TEST
RELEASE
DEPLOY
OPERATE
MONITOR
DEV
OPS

Once upon a time

- Vorgeschichte
- Neues Projekt (Automotive)
- Softwareentwicklung durch 5 verschiedene (dislozierte) Teams in verschiedenen Tech-Stacks
- Betrieb von 4 Stages in Azure
- Anfängliches Daily Business:
  - Entwickler nutzen verschiedene SCM
  - Entwickler bauen Code lokal
  - Artefakte werden per Mail, Skype, Dropbox, … an DevOps verschickt
  - Artefakte haben keine Versionsnummer
  - Artefakte werden unter gleicher Version neu gebaut (sind aber verschieden)
  - Manuelles Deployment (FTP-Upload, Kudu, …)
  - Entwickler haben keinerlei Sicht auf Azure

Warum kein Azure DevOps?

- Kosten
- Keine Erfahrungen
- Entwickler nutzen größtenteils keine MS-Tools
- IP soll on-premises gehalten werden
- Wunsch aus dem Management, keine zu starke Abhängigkeit zu Microsoft aufzubauen

What is allready there

Sonatype Nexus

Tool-Vorstellung

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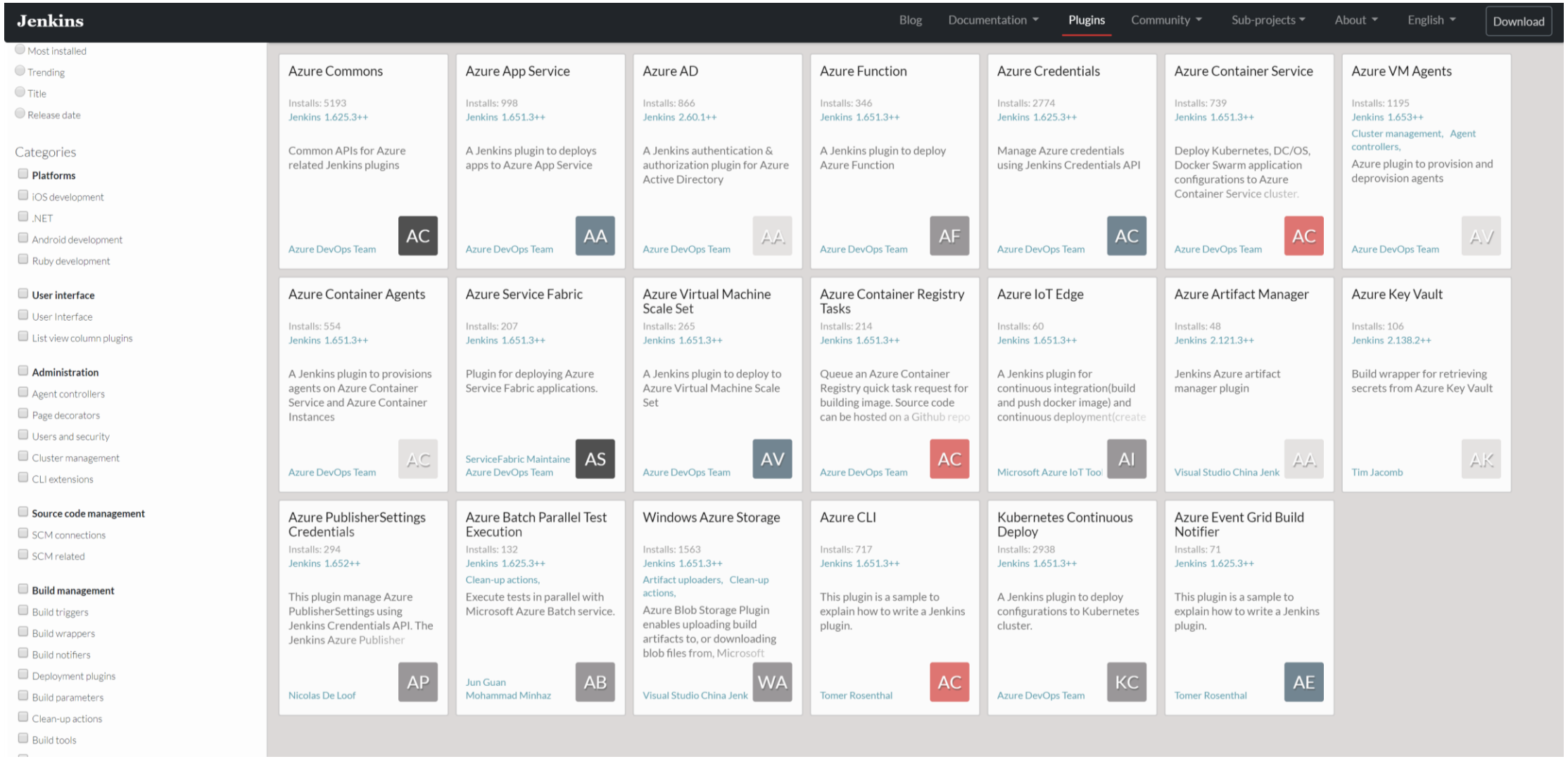
GitLab

- Git-Instanz für On-premises-Einsatz
- Source Code Management
- Gruppen & Projekte
- Branches
- Command Line + Web UI

Hudson / Jenkins

- Als Hudson bei Sun Microsystems entwickelt
- Nach Kauf von Sun durch Oracle: Abspaltung von Jenkins als neuer Fork
- Hudson wird seit 2016 nicht mehr weiterentwickelt
- Continuous integration System
- Durch Plugins sehr gut erweiterbar
- Anbindung an Git, SVN, Nexus, … möglich
- Durch Build-Slaves gut skalierbar

Hudson / Jenkins

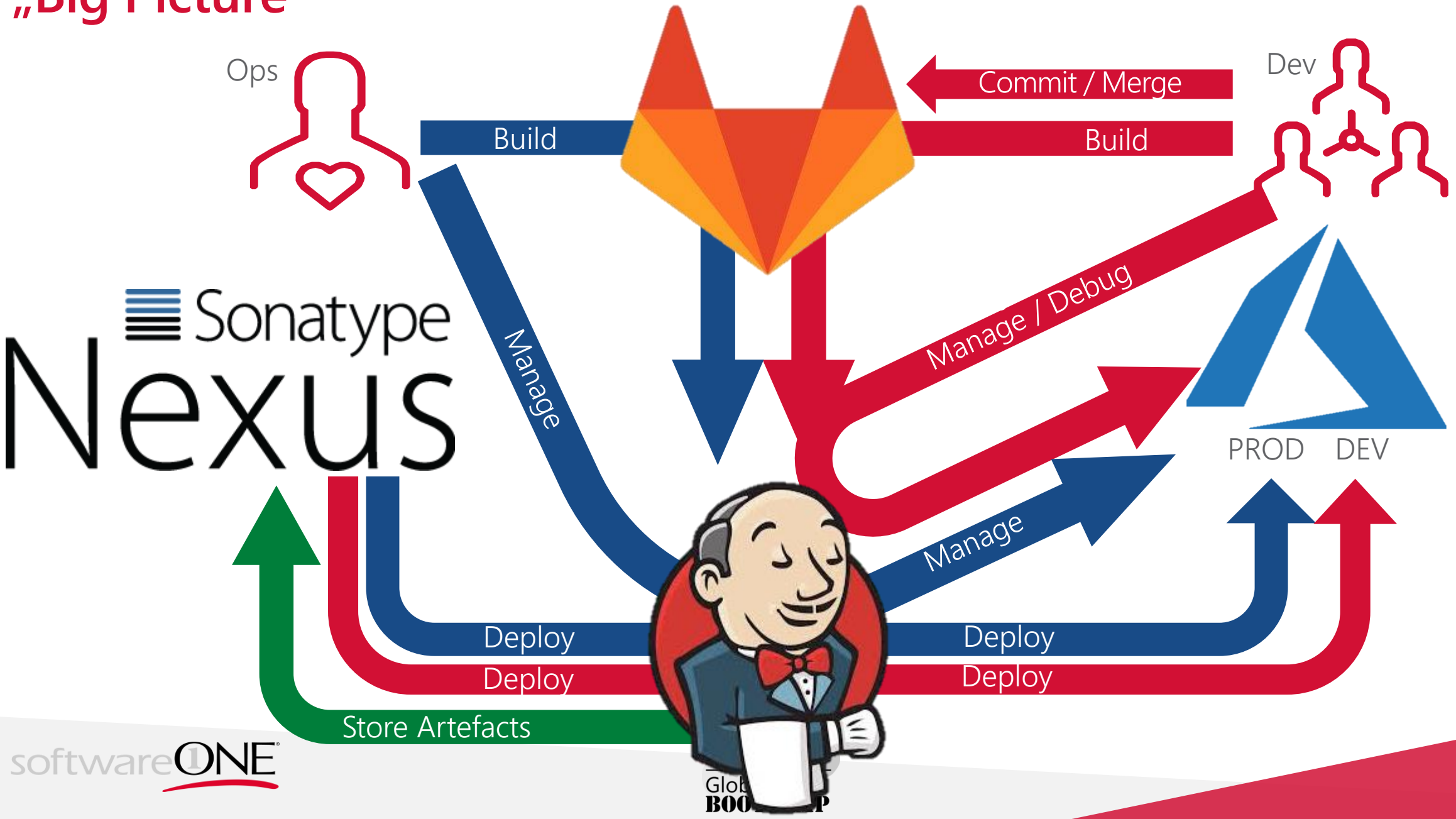


Nexus Repository Manager OSS

- Repository Manager
- Geeignet, um Artefakte zu speichern
- Auch zum Speichern/Cachen externer Bibliotheken gut geeignet

Sonatype Nexus

„Big Picture“


Ops
Dev
Commit / Merge
Build
Build
Sonatype
Nexus
Manage
Manage / Debug
PROD
DEV
Manage
Deploy
Deploy
Deploy
Deploy
Store Artefacts

DEMOS

- Code
- Build
- Deploy
- Manage

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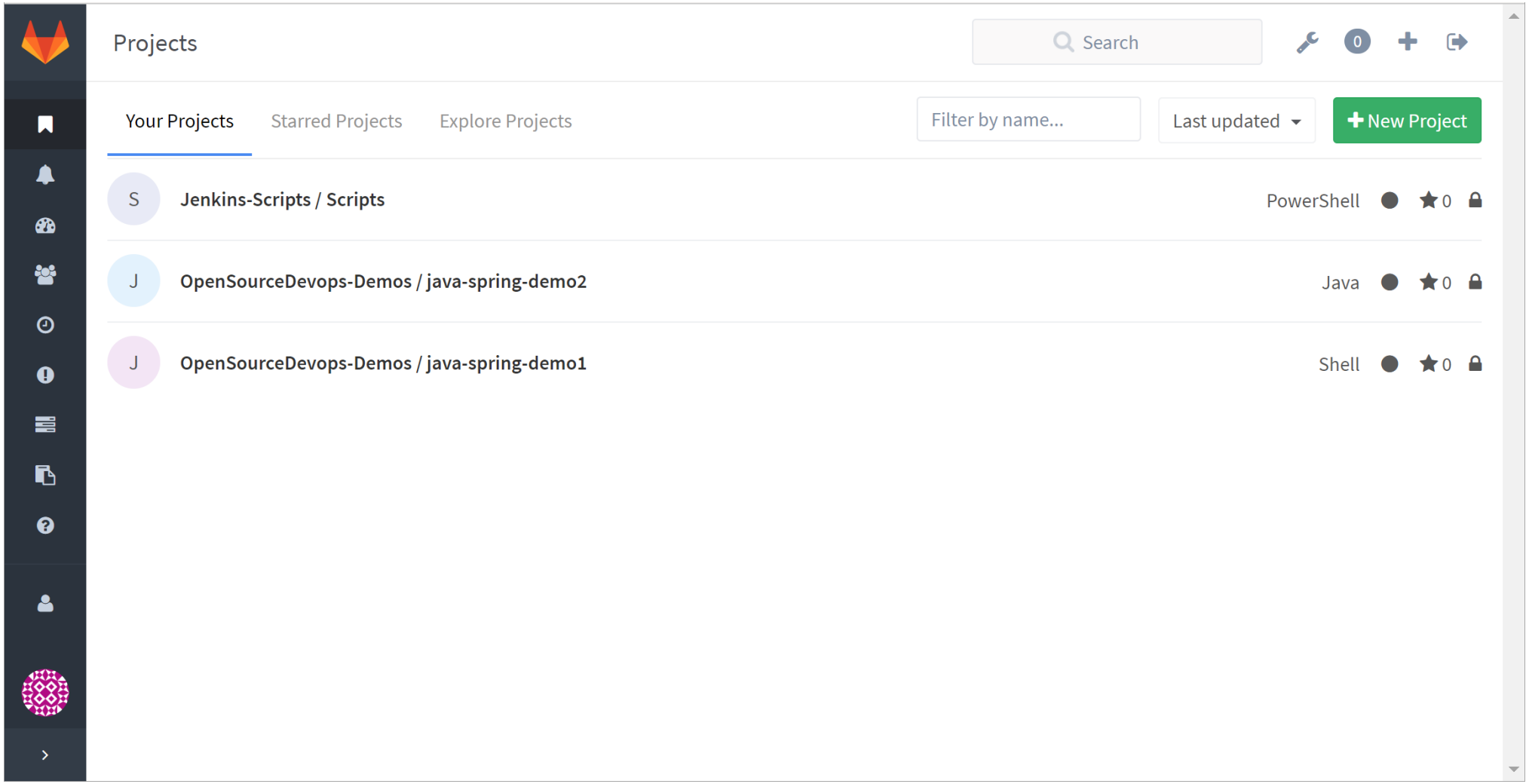
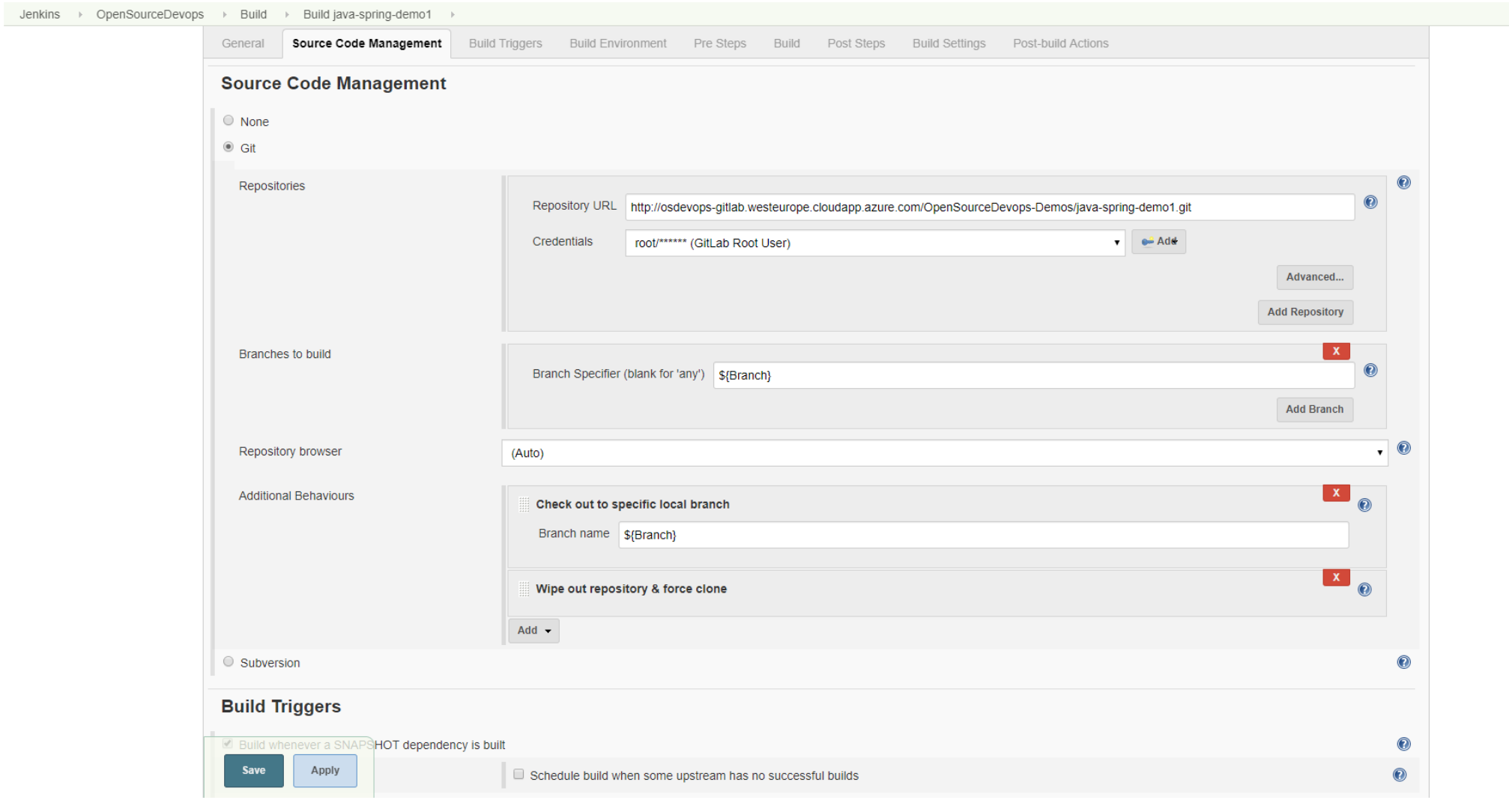
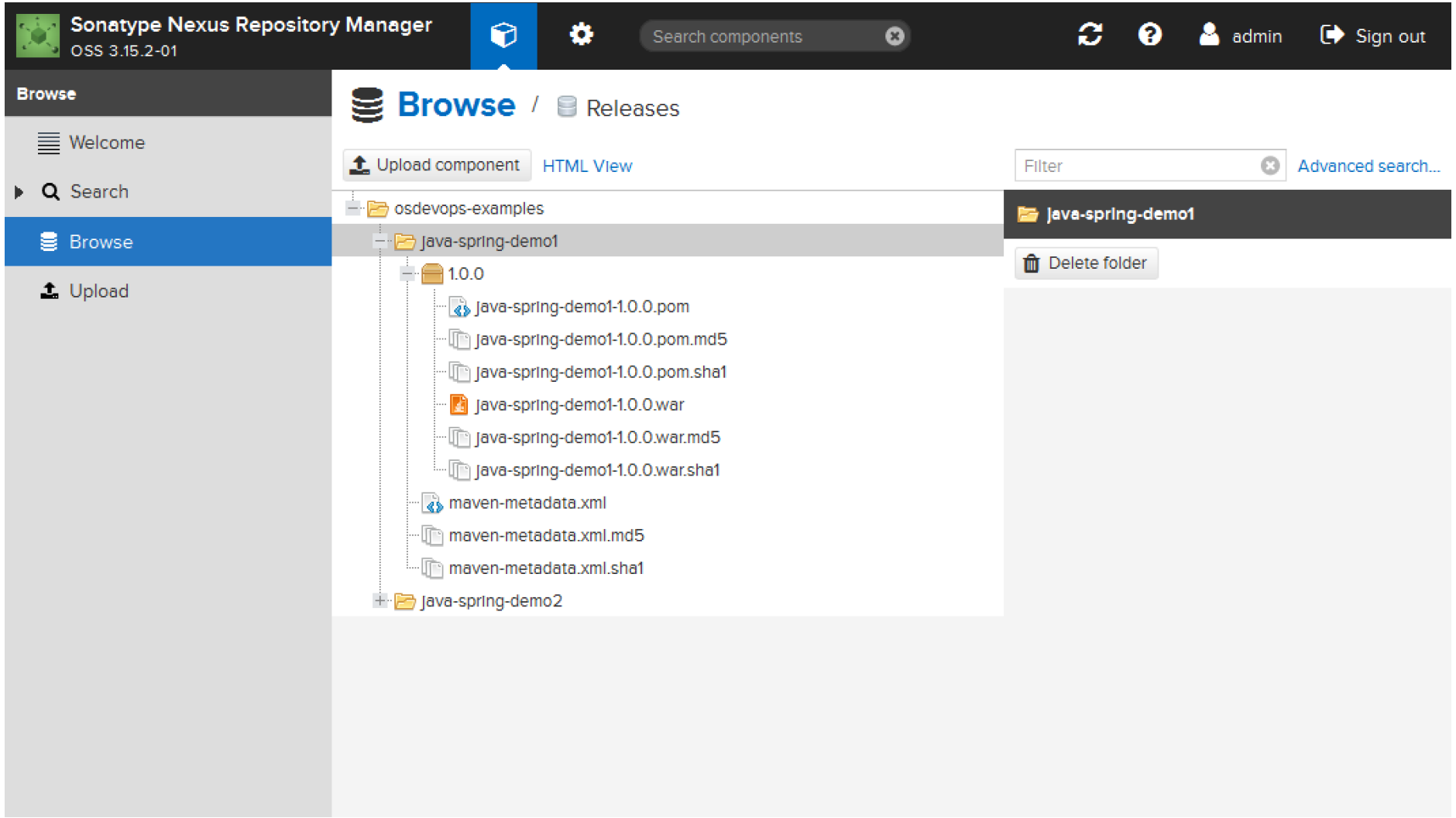
Demo: Code


Projects
Search
0
Your Projects
Starred Projects
Explore Projects
Filter by name...
Last updated
New Project
S
Jenkins-Scripts / Scripts
PowerShell
0
J
OpenSourceDevops-Demos / java-spring-demo2
Java
0
J
OpenSourceDevops-Demos / java-spring-demo1
Shell
0

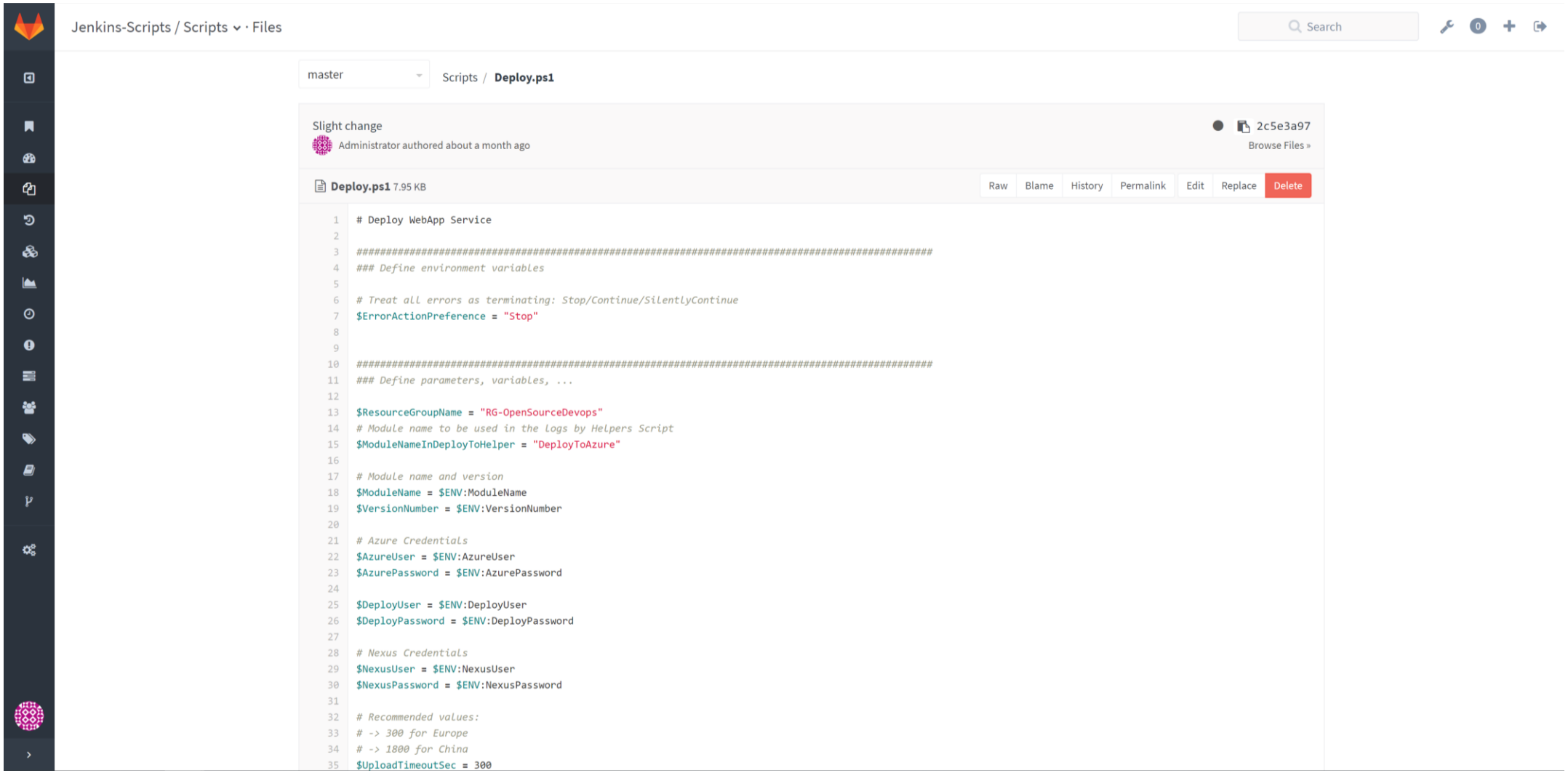
Demo: Build


Jenkins
OpenSourceDevops
Build
Build java-spring-demo1
General
Source Code Management
Build Triggers
Build Environment
Pre Steps
Build
Post Steps
Build Settings
Post-build Actions
Source Code Management
None
Git
Repositories
Repository URL
http://osdevops-gitlab.westeurope.cloudapp.azure.com/OpenSourceDevops-Demos/java-spring-demo1.git
Credentials
root/****** (GitLab Root User)
Add
Advanced...
Add Repository
Branches to build
Branch Specifier (blank for 'any')
${Branch}
Add Branch
Repository browser
(Auto)
Additional Behaviours
Check out to specific local branch
Branch name
${Branch}
Wipe out repository & force clone
Add
Subversion
Build Triggers
Build whenever a SNAPSHOT dependency is built
Save
Apply
Schedule build when some upstream has no successful builds

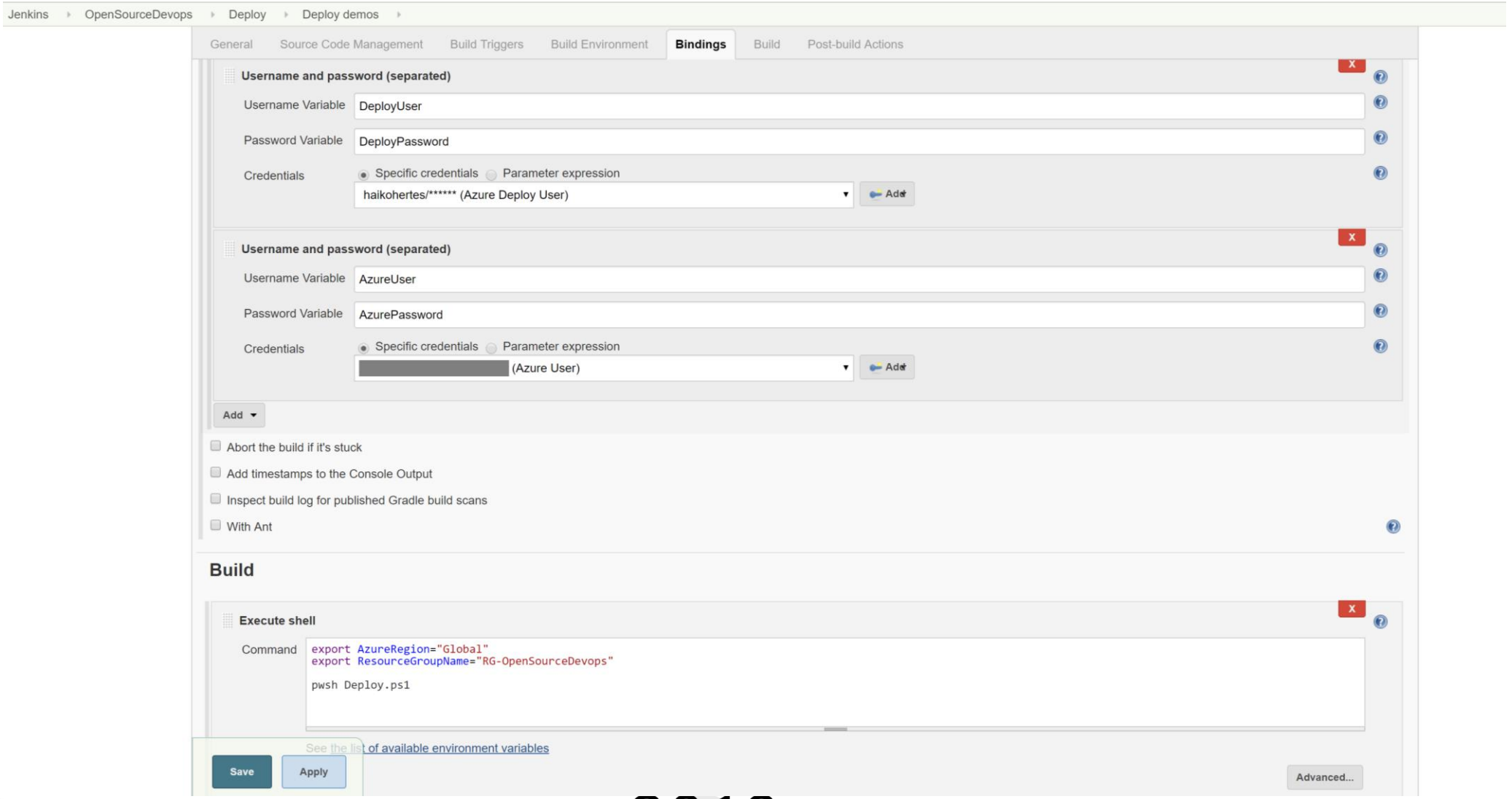
Demo: Build


Sonatype Nexus Repository Manager
OSS 3.15.2-01
Search components
admin
Sign out
Browse
Welcome
Search
Browse
Upload
Browse / Releases
Upload component
HTML View
Filter
Advanced search...
osdevops-examples
java-spring-demo1
1.0.0
java-spring-demo1-1.0.0.pom
java-spring-demo1-1.0.0.pom.md5
java-spring-demo1-1.0.0.pom.sha1
java-spring-demo1-1.0.0.war
java-spring-demo1-1.0.0.war.md5
java-spring-demo1-1.0.0.war.sha1
maven-metadata.xml
maven-metadata.xml.md5
maven-metadata.xml.sha1
java-spring-demo2
java-spring-demo1
Delete folder

Demo: Deploy


Jenkins-Scripts / Scripts · Files
Search
master
Scripts / Deploy.ps1
Slight change
Administrator authored about a month ago
2c5e3a97
Browse Files »
Deploy.ps1 7.95 KB
Raw
Blame
History
Permalink
Edit
Replace
Delete
Deploy WebApp Service
Define environment variables
Treat all errors as terminating: Stop/Continue/SilentlyContinue
$ErrorActionPreference = "Stop"
Define parameters, variables, ...
$ResourceGroupName = "RG-OpenSourceDevops"
Module name to be used in the Logs by Helpers Script
$ModuleNameInDeployToHelper = "DeployToAzure"
Module name and version
$ModuleName = $ENV:ModuleName
$VersionNumber = $ENV:VersionNumber
Azure Credentials
$AzureUser = $ENV:AzureUser
$AzurePassword = $ENV:AzurePassword
$DeployUser = $ENV:DeployUser
$DeployPassword = $ENV:DeployPassword
Nexus Credentials
$NexusUser = $ENV:NexusUser
$NexusPassword = $ENV:NexusPassword
Recommended values:
-> 300 for Europe
-> 1800 for China
$UploadTimeoutSec = 300

Demo: Deploy


Jenkins
OpenSourceDevops
Deploy
Deploy demos
General
Source Code Management
Build Triggers
Build Environment
Bindings
Build
Post-build Actions
Username and password (separated)
Username Variable
DeployUser
Password Variable
DeployPassword
Credentials
Specific credentials
Parameter expression
haikohertes/****** (Azure Deploy User)
Add
Username and password (separated)
Username Variable
AzureUser
Password Variable
AzurePassword
Credentials
Specific credentials
Parameter expression
(Azure User)
Add
Abort the build if it's stuck
Add timestamps to the Console Output
Inspect build log for published Gradle build scans
With Ant
Build
Execute shell
Command
export AzureRegion="Global"
export ResourceGroupName="RG-OpenSourceDevops"
pwsh Deploy.ps1
See the list of available environment variables
Save
Apply
Advanced...

Demo: Manage

Manage

add description

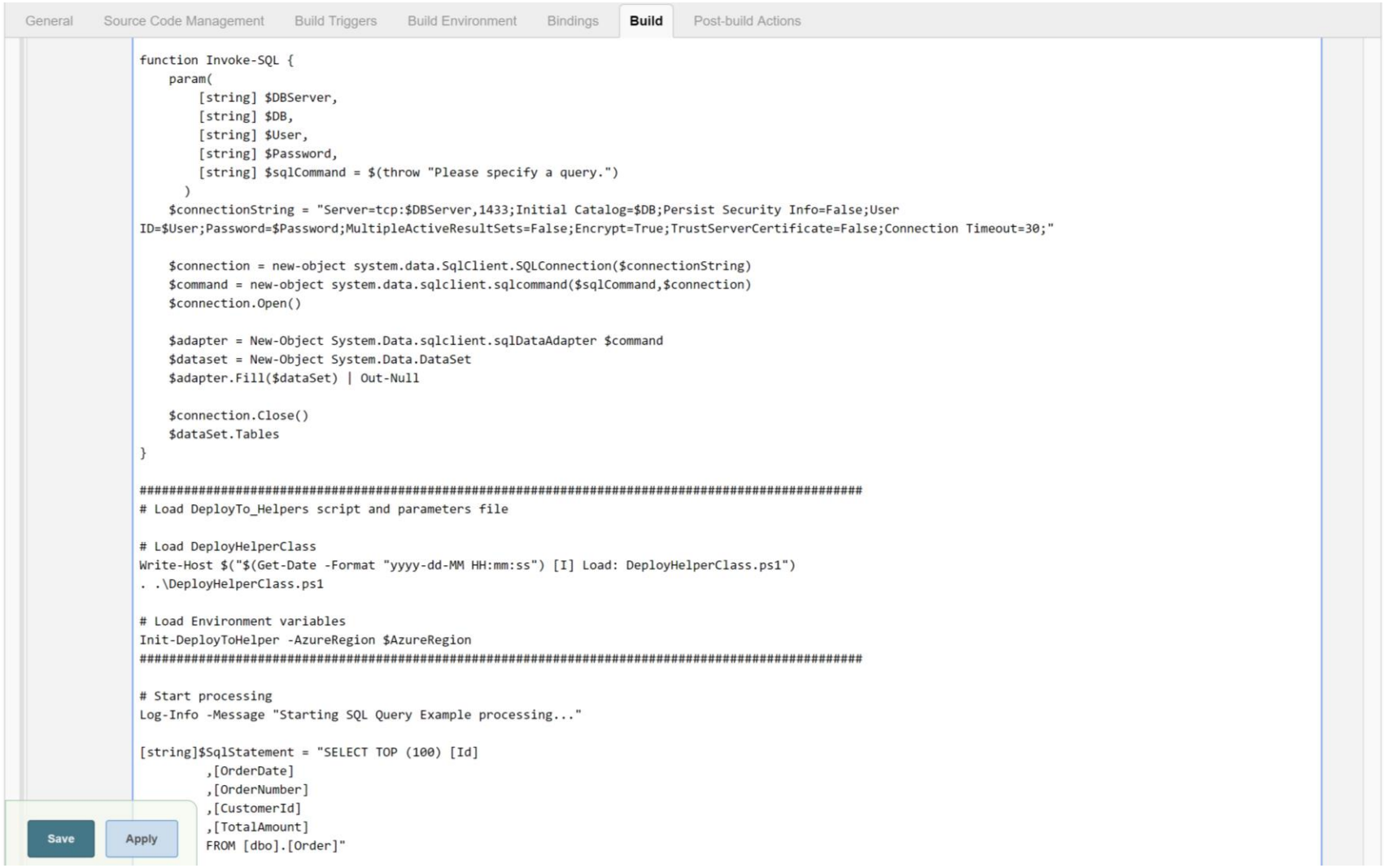
All +

S	W	Name ↓	Last Success	Last Failure	Last Duration	
		Get AppSettings	19 hr - #13	1 mo 6 days - #10	8.8 sec	
		Get LogFiles	19 hr - #9	1 mo 6 days - #1	7 sec	
		Restart WebApps	1 mo 6 days - #5	1 mo 6 days - #3	6.8 sec	
		SQL Query Example	18 hr - #4	1 mo 6 days - #1	24 sec	
		Stop WebApps	1 mo 6 days - #2	1 mo 6 days - #1	3.7 sec	

Icon: S M L

Legend RSS for all RSS for failures RSS for just latest builds

Demo: Manage


General
Source Code Management
Build Triggers
Build Environment
Bindings
Build
Post-build Actions
function Invoke-SQL {
param(
[string] $DBServer,
[string] $DB,
[string] $User,
[string] $Password,
[string] $sqlCommand = $(throw "Please specify a query.")
)
$connectionString = "Server=tcp:$DBServer,1433;Initial Catalog=$DB;Persist Security Info=False;User ID=$User;Password=$Password;MultipleActiveResultSets=False;Encrypt=True;TrustServerCertificate=False;Connection Timeout=30;"
$connection = new-object system.data.SqlClient.SQLConnection($connectionString)
$command = new-object system.data.sqlclient.sqlcommand($sqlCommand,$connection)
$connection.Open()
$adapter = New-Object System.Data.sqlclient.sqlDataAdapter $command
$dataset = New-Object System.Data.DataSet
$adapter.Fill($dataSet) | Out-Null
$connection.Close()
$dataSet.Tables
}
##
Load DeployTo_Helpers script and parameters file
Load DeployHelperClass
Write-Host $("$(Get-Date -Format "yyyy-dd-MM HH:mm:ss") [I] Load: DeployHelperClass.ps1")
. .\DeployHelperClass.ps1
Load Environment variables
Init-DeployToHelper -AzureRegion $AzureRegion
##
Start processing
Log-Info -Message "Starting SQL Query Example processing..."
[string]$SqlStatement = "SELECT TOP (100) [Id]
,[OrderDate]
,[OrderNumber]
,[CustomerId]
,[TotalAmount]
FROM [dbo].[Order]"
Save
Apply

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Fragen?

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