Azure DevOps Integrations with Jenkins

Arun + Damien

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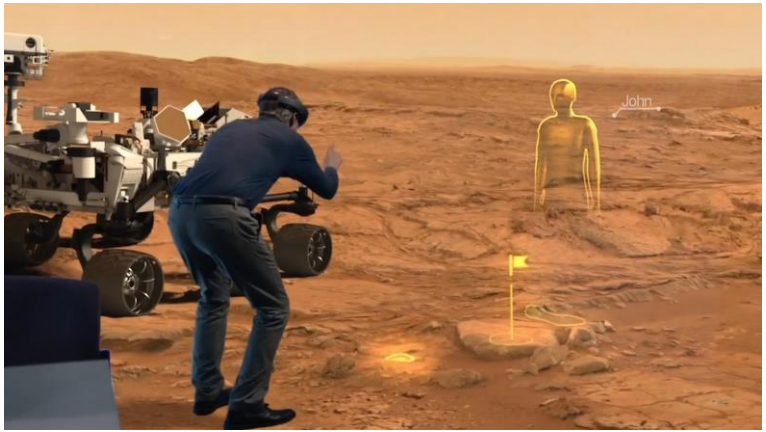
Azure DevOps integration with Jenkins

- Azure Storage plugin
- Azure Slave plugin v2
- Azure Container Service Plugin
- Azure DevOps Integrations
- Roadmap

Working “OnSight” in Mars with HoloLens and Jenkins

“Most of our terrain pipeline is implemented in .NET. Microsoft released the .NET Core libraries as open source in 2014.

We use the Jenkins continuous integration system both to compile code for continuous integration and to run our image processing jobs.” – Parker Abercrombie (NASA JPL Engineer)



Source: https://opensource.com/life/16/1/scale14x-interview-parker-abercrombie-nasa

Azure Plugin Configuration Script

- Script to configure all Azure plugins to access Azure resources
- Useful scenarios:
  - Configure secrets into the plugin without needing to understand Azure security model
  - Run once, get the relevant keys to use across all plugins

- Available for limited preview:
  - Contact us: azdevopspub@microsoft.com

Demo

0. Pipeline and steps used in the demo

1. Download dependencies from Azure storage
   - Use Azure Storage plugin - download
2. Build the application on slaves
   - Use Azure slave plugin
3. Upload artifacts to Azure storage
   - Use Azure Storage plugin - upload

We are moving to Azure
• More consistent, uniform infra
• Support the growing needs of the community
• Practice what we preach; kick-ass DevOps for infra

Azure Storage plugin

- Azure Storage plugin (0.3.1) that pushes and pulls content from/to Azure Storage
- Useful scenarios:
  - **Upload**: Build and package your app and upload it to Storage so that –
    - You can share with partners,
    - Share across multiple geos
    - Share once, Deploy often
  - **Download**: Download artifacts from storage so that –
    - Share pre-requisites across your org in one central repository
    - Ensure you get the latest version of dependencies

Source: https://azure.microsoft.com/en-us/documentation/articles/storage-java-jenkins-continuous-integration-solution/

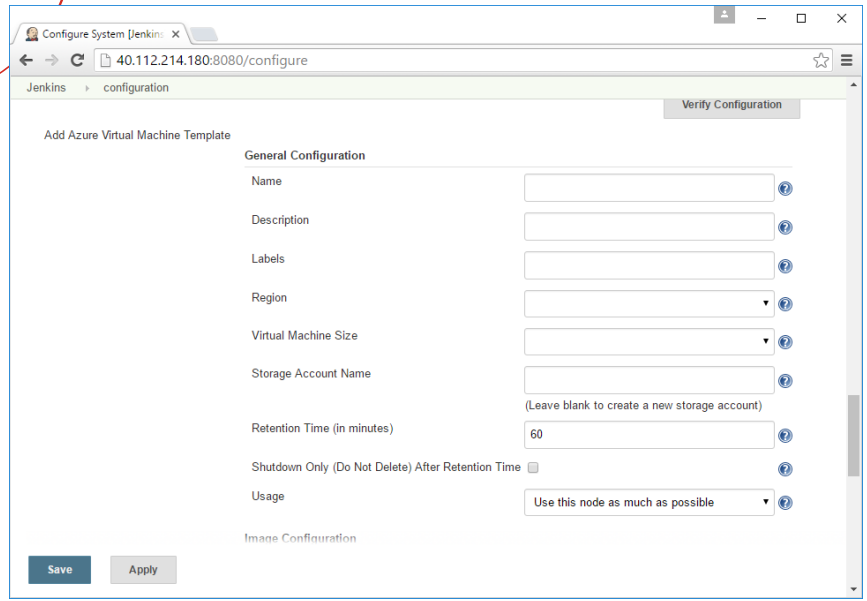
.NET Core on Jenkins in Azure

- All hosted in Azure with heavy GitHub integration
- Two primary Jenkins instances – One handles CI and other handles perf
- Job DSL + scripting to handle 95% of the system and job configuration.
- Jobs can be rebuilt from scratch from a single job.
- Runs 5000-7000 jobs/day.
- Most resources come from automatically allocated Azure VMs, though there is some real hardware attach too.
- We scale down to < 100 machines at night, up to 300+ during the day.

Azure Slave v2 plugin

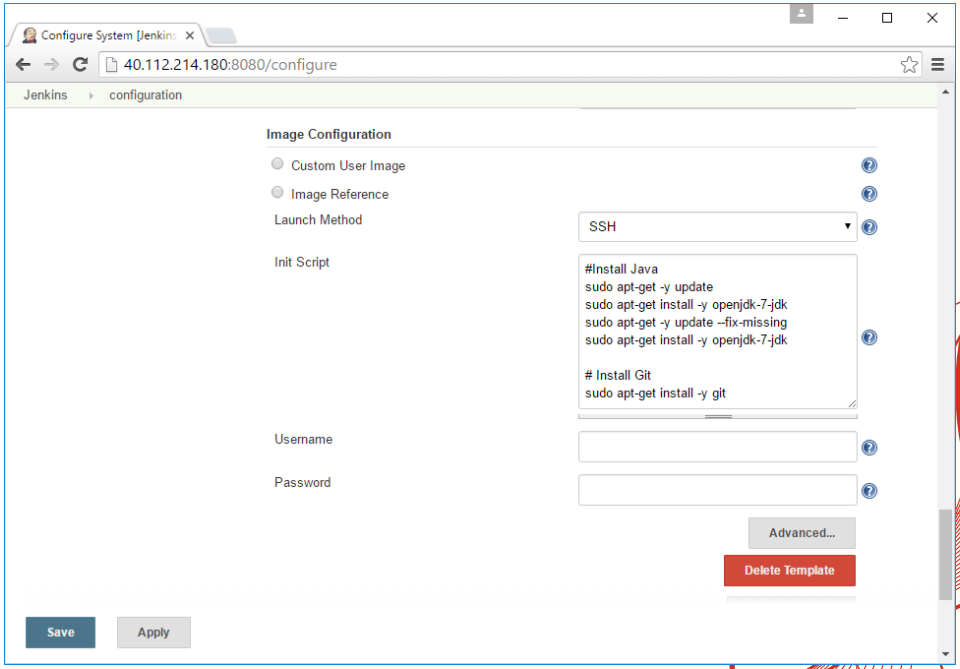
- Azure Slave plugin (v2) that deploys and controls slaves in Azure VM
- Provisions a VM if no slave is available:
  - Based on the Azure marketplace image or your own custom image
  - Leverages Azure Resource Management to enhance performance via parallelism
- Useful scenarios:
  - Lift and shift what you do on-prem to the cloud
  - Transient dev/test environments to save on costs
  - Elastic CI at scale with 100s of slaves
- Available for limited preview
  - Contact us: azdevopspub@microsoft.com

Azure Slave v2 plugin



1. Define the template that you want to use

2. Configure the image



Jenkins infra on Azure

- “Migrating to Azure simplifies and improves our infrastructure in a dramatic way that would not be possible without a comprehensive platform consisting of: compute, CDN, storage and data-store services.” – R. Tyler Croy
- Azure also enables a couple of new projects for the community:
  - End-to-end TLS encrypted distribution of Jenkins packages, plugins and metadata via the Azure CDN.
  - More complete build/test/release support and capacity on ci.jenkins.io for plugin developers using Azure Container Service and generic VMs.

Source: https://jenkins.io/blog/2016/05/18/announcing-azure-partnership/

Azure Container Service plugin

Limited Preview

- Azure Container Service plugin
- How it works:
  - Creates the cluster if it does not exist and deploys per the Marathon file
  - If the cluster exist, only the marathon file deployment will occur
  - Leverages the ARM API
- Useful scenarios:
  - Deploy Docker containers to Azure
  - Simplify complexity of managing and configuring the DCOS cluster
  - Azure takes care of the container orchestration
- Available for limited preview
  - Contact us: azdevopspub@microsoft.com

Immutable flow with Azure Container Service

Dev checks in code

Trigger Build

Build app into image

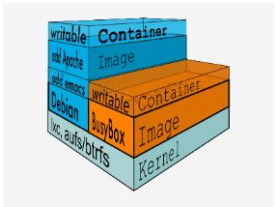
PRIVATE DOCKER CONTAINER IMAGES

Private Container Registry in Azure

Test

Stage

Production



Reuse same “Golden Image” across stages

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Azure Container Service plugin

New

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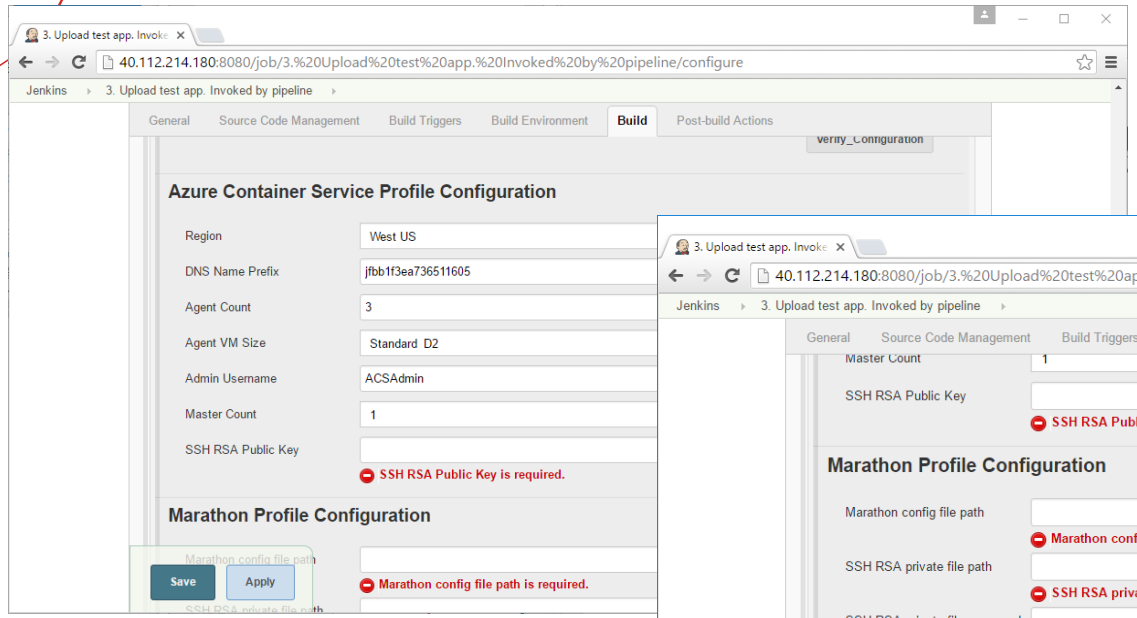
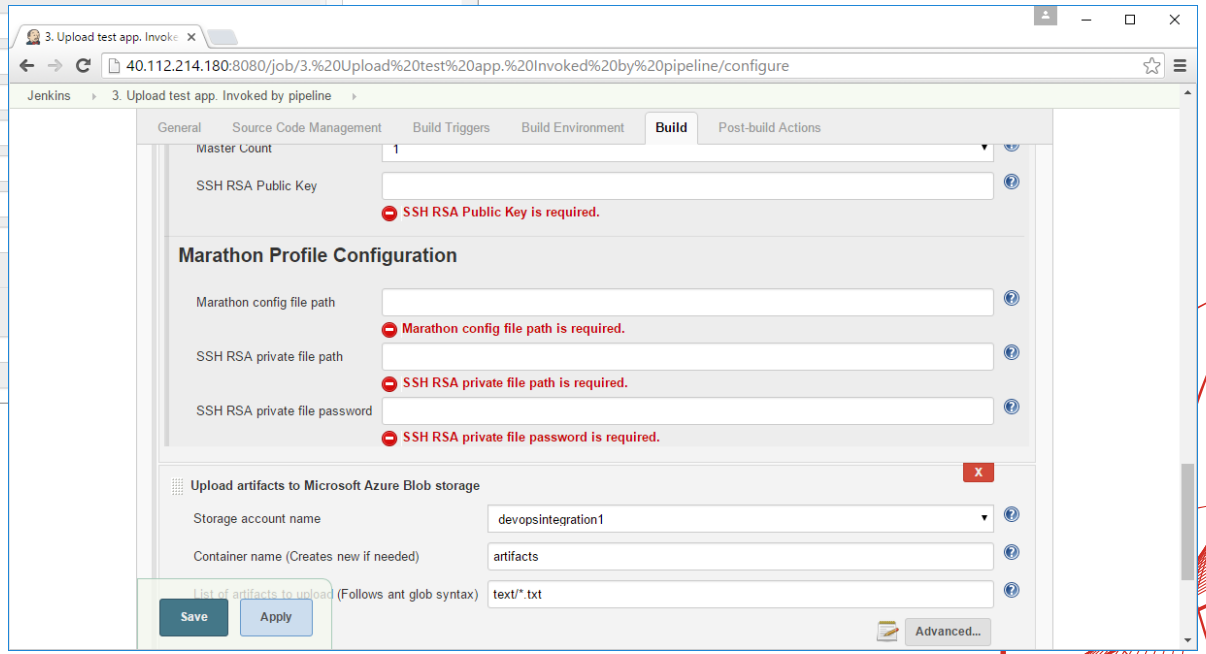


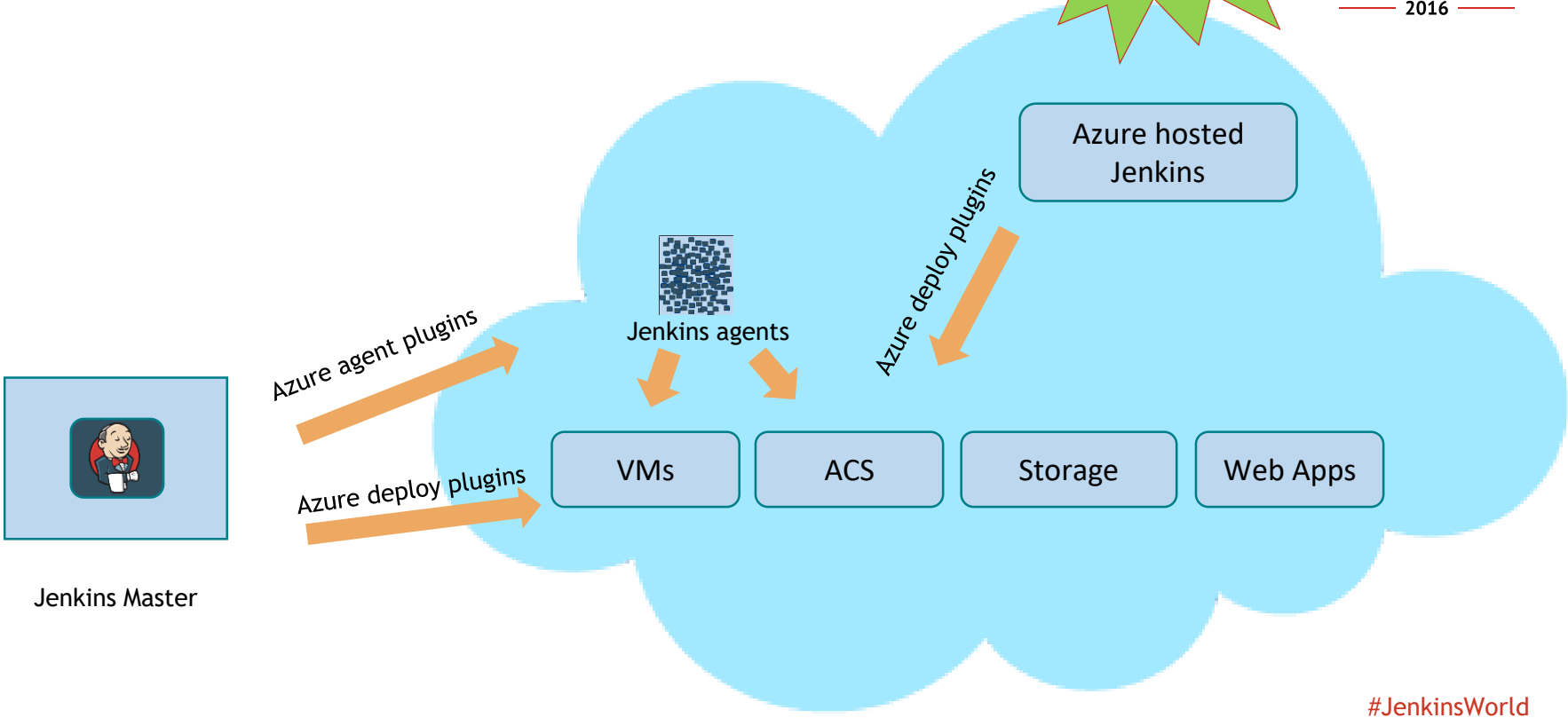
1. Configure ACS

2. Configure Marathon



Azure Jenkins image in the marketplace

Public Preview



Jenkins in the Azure Marketplace

Available

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jenkins
Docker

Jenkins
Bitnami

BYOL CB Jenkins Enterprise
CloudBees

Secured Jenkins on centos
Cognosys Inc.

CloudBees Jenkins Platform
CloudBees

BYOL CB Jenkins Ops Center
CloudBees

BYOL CloudBees Jenkins Platform
CloudBees

Production Jenkins
Bitnami

Secured Jenkins on Ubuntu 14.04
Cognosys Inc.

HP LoadRunner
Hewlett Packard

JFrog Artifactory Pro
JFrog

Octopus Deploy
Octopus Deploy

Source: https://azure.microsoft.com/en-us/marketplace/?term=jenkins

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Azure DevOps Integrations Portal

- I am familiar with DevOps tool X, show me how to use it with Azure service Y in a scenario Z

- How it works:
  - Try common Jenkins scenarios on Azure for free with minimal configuration

- Available for public preview
  - Link: http://aka.ms/trydevops

Immutable flow with VMs

Dev checks in code

Trigger Build

Build app

Packer

Bake app into image

Test

Stage

Productio n

Reuse the same image across stages

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Azure Jenkins Roadmap

- Currently available –
  - Azure Storage plugin
  - Azure Slave v1 plugin
- Public Preview over the next few weeks, of the following –
  - Azure Jenkins marketplace image
  - Azure plugin configuration script
  - Azure DevOps integrations portal
- Limited Preview over fall and beyond that will let you –
  - Azure Slave v2 plugin
  - Azure Container Service plugin
- Future -
  - Azure Web Apps plugin
  - Jenkins integrations with Spinnaker
- For limited preview, contact us: azdevopspub@microsoft.com

Thank you !

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Questions

Answers

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