Empowering AVD Image deployments with Azure Pipelines and Liquit!

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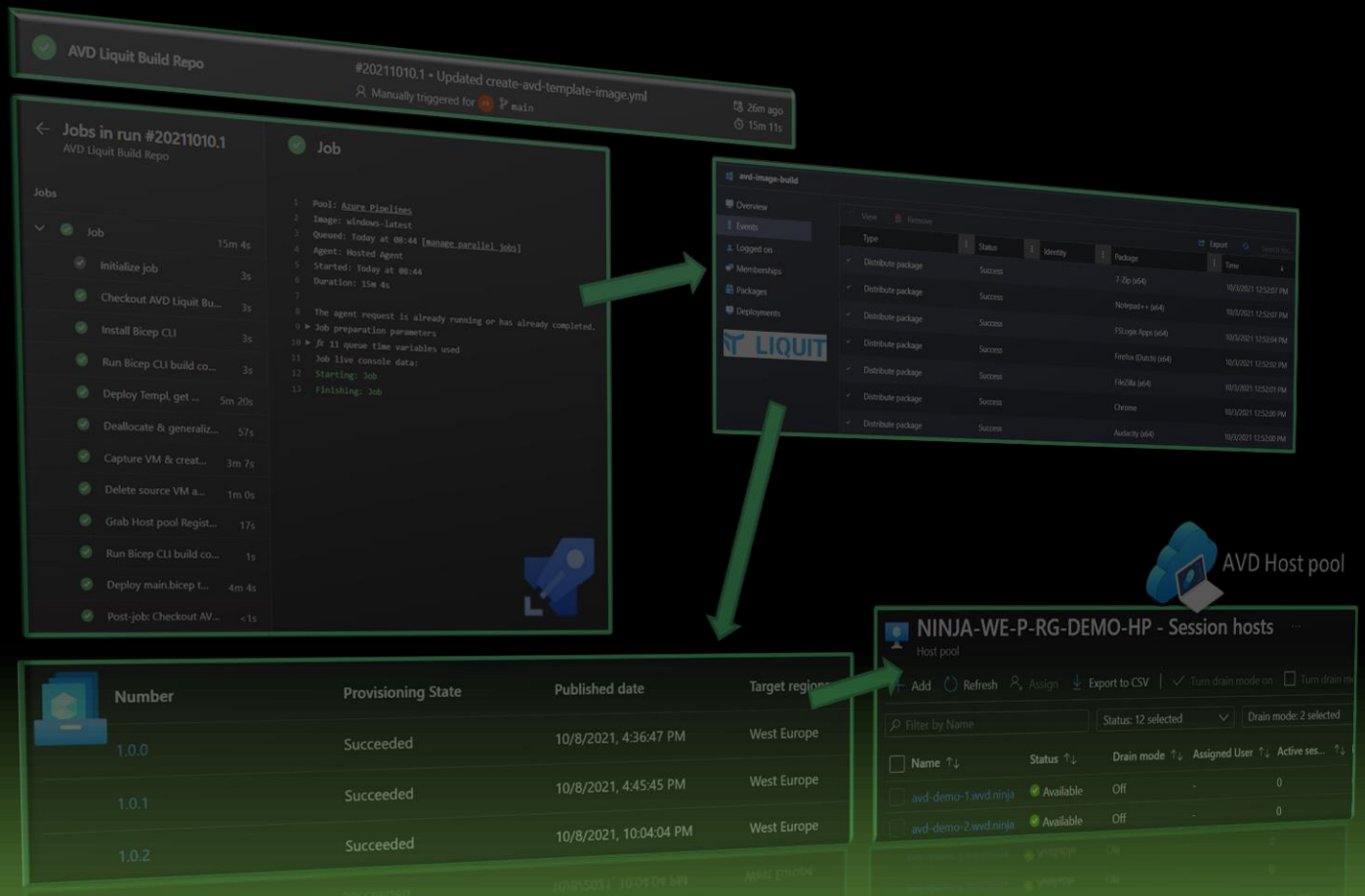
Microsoft MVP



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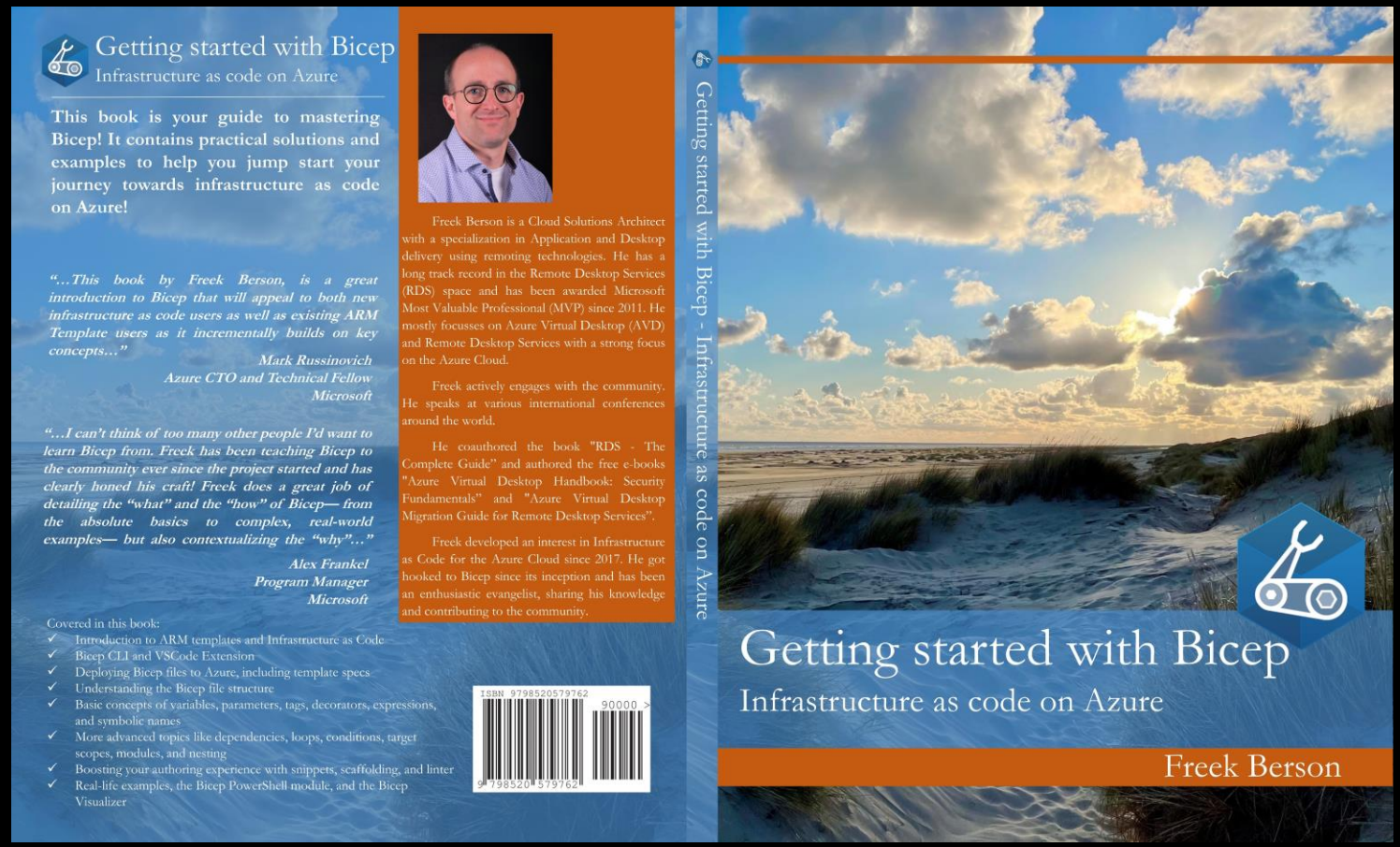
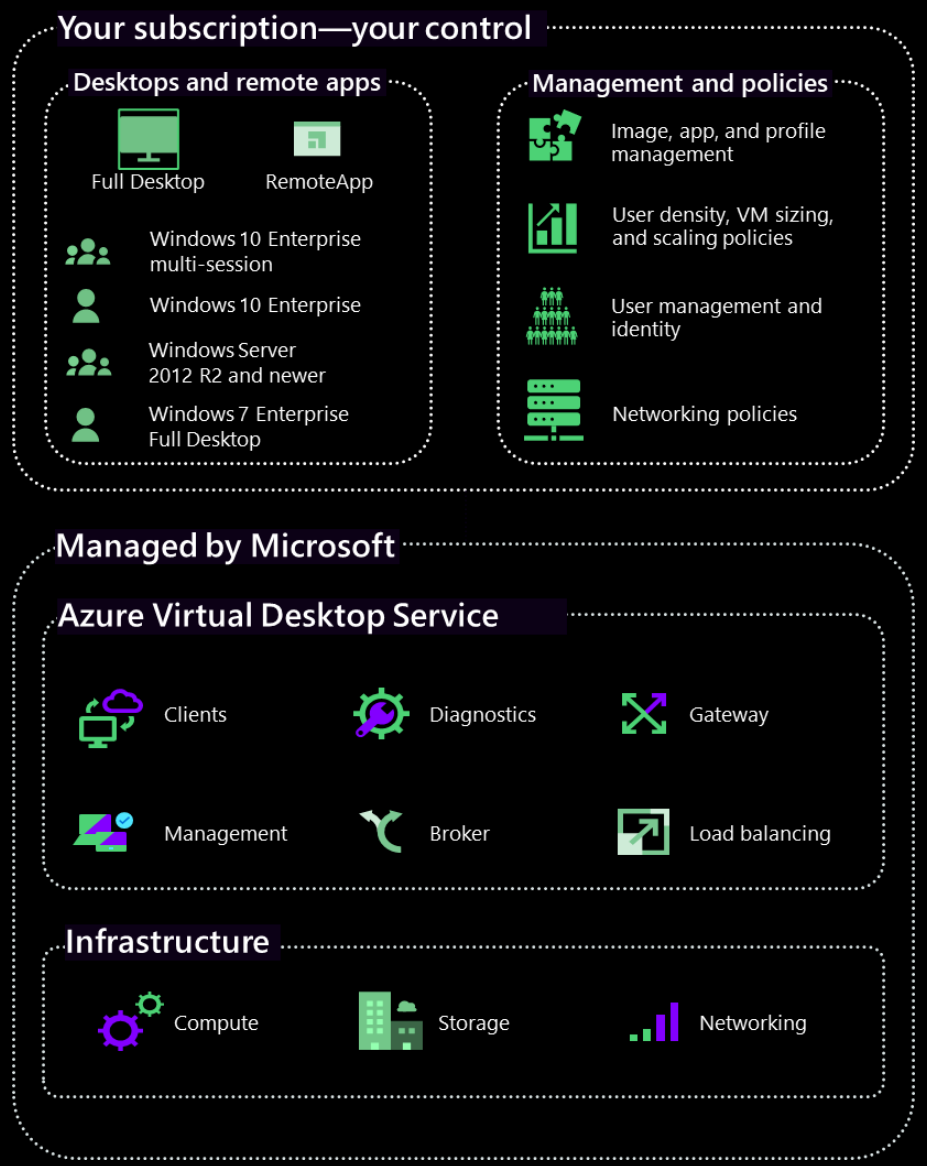


Azure Virtual Desktop

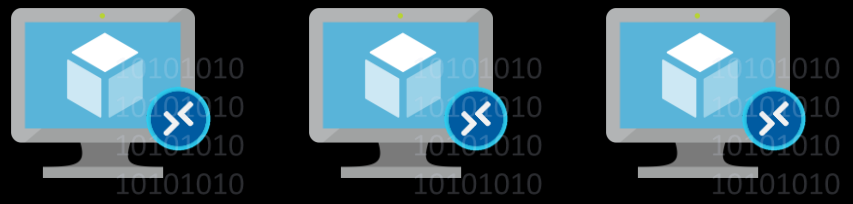
Azure Virtual Desktop

A comprehensive, highly secure virtualization service on Microsoft Azure.

AVD Architecture



Host pool



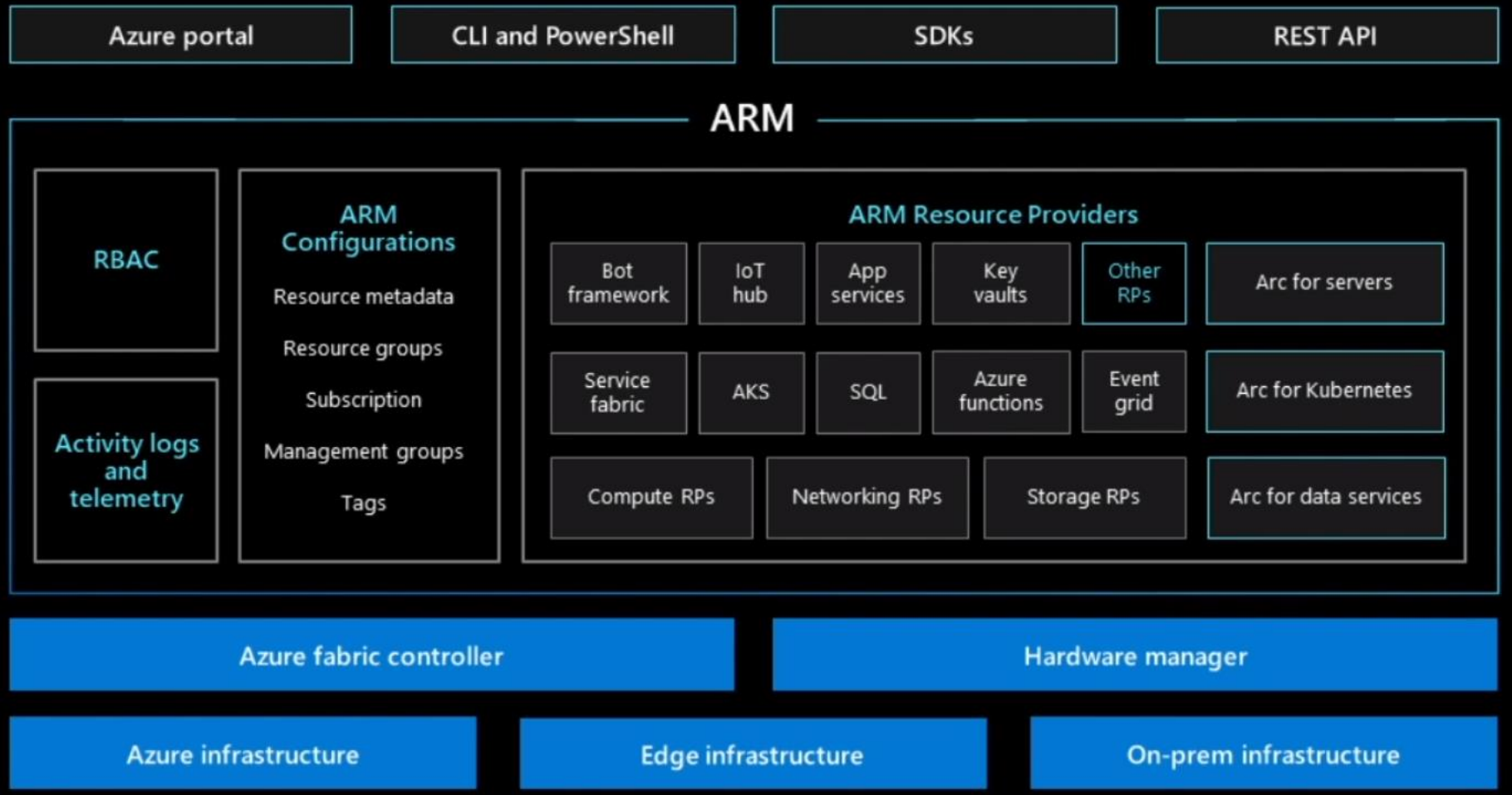
‘Golden image’ approach advantages :

- Consistency
- Can gain large management efficiencies
- Test image changes in an DTAP way
- Roll back any time

Manual way:

- *Deploy a (new) template Image VM*
- *Make the application updates and changes*
- *Sysprep the template Image VM*
- *Capture towards Azure Compute Gallery*
- *Create hostpool registration key*
- *(re) create Session Host VM’s in hostpool*

Azure Resource Manager



ARM Template

Template format

In its simplest structure, a template has the following elements:

JSON Copy

```
{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
  "contentVersion": "",
  "apiProfile": "",
  "parameters": {  },
  "variables": {  },
  "functions": [  ],
  "resources": [  ],
  "outputs": {  }
}
```

ARM Template complexity

```
"licenseType": "Windows_Client",
"hardwareProfile": {
  "vmSize": "[parameters('virtualMachineSize')]"
},
"availabilitySet": {
  "id": "[resourceId('Microsoft.Compute/availabilitySets', parameters('availabilitySetName'))]"
},
"osProfile": {
  "computerName": "[format('{0}-{1}', parameters('sessionHostNamePrefix'), add(range(0, parameters('numberOfInstances'))[copyIndex()]
  "adminUsername": "[format('{0}-{1}-adm', parameters('sessionHostNamePrefix'), add(range(0, parameters('numberOfInstances'))[copyInd
  "adminPassword": "[parameters('localAdminPassword')]",
  "windowsConfiguration": {
    "timeZone": "[variables('vmTimeZone')]"
  }
},
"storageProfile": {
  "osDisk": {
    "name": "[format('{0}-{1}-{2}', parameters('sessionHostNamePrefix'), add(range(0, parameters('numberOfInstances'))[copyIndex()],
    "managedDisk": {
      "storageAccountType": "[variables('storage').type]"
    },
    "osType": "Windows",
    "caching": "[variables('virtualmachineosdisk').cacheOption]",
    "createOption": "[variables('virtualmachineosdisk').createOption]"
  },
  "imageReference": {
    "id": "[variables('imageResourceId')]"
  },
  "dataDisks": []
},
"networkProfile": {
  "networkInterfaces": [
    {
      "id": "[resourceId('Microsoft.Network/networkInterfaces', format('{0}-{1}{2}', parameters('sessionHostNamePrefix'), add(range(0
    }
  ]
}
},
"dependsOn": [
  "[resourceId('Microsoft.Compute/availabilitySets', parameters('availabilitySetName'))]",
  "[resourceId('Microsoft.Network/networkInterfaces', format('{0}-{1}{2}', parameters('sessionHostNamePrefix'), add(range(0, parameters
]
```

Bicep

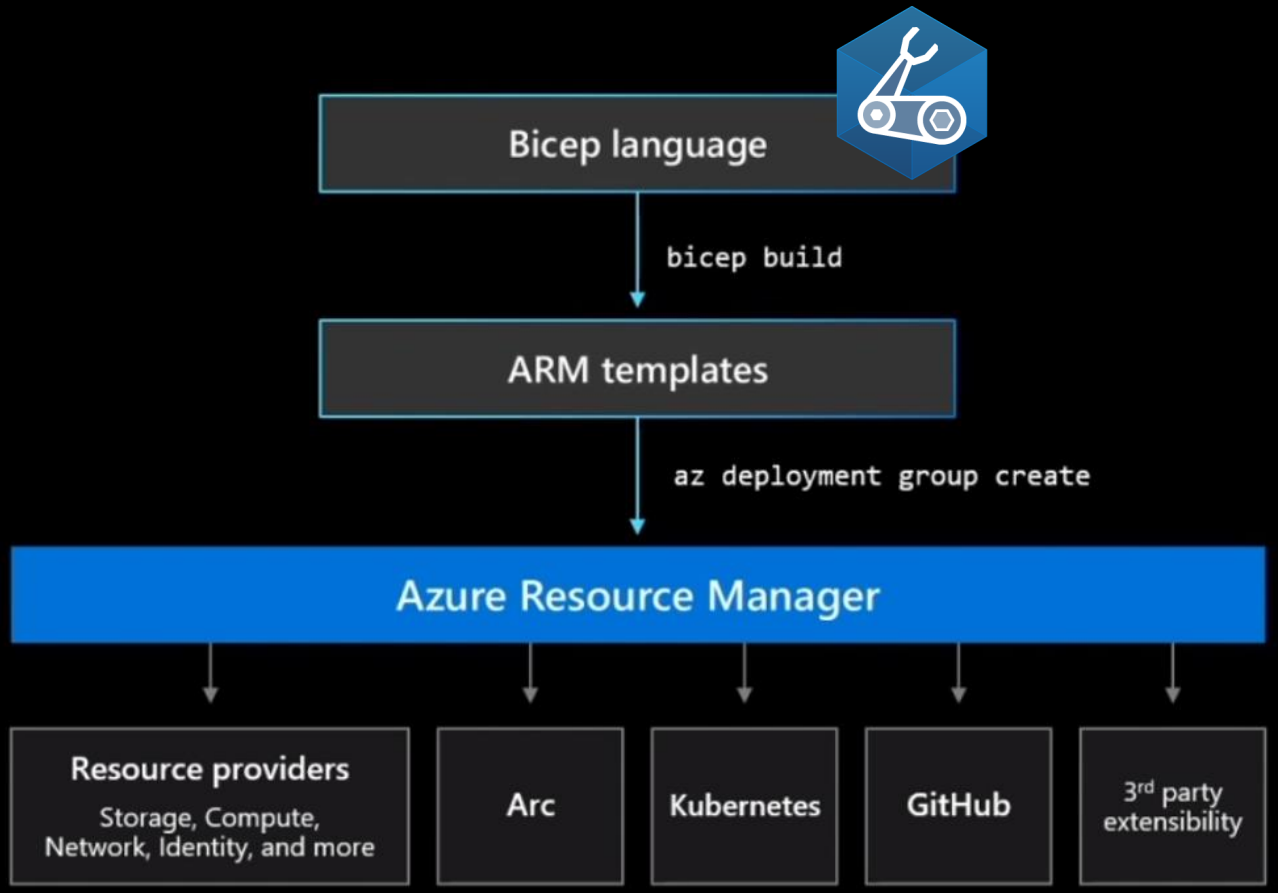
Simple declarative language to provision infrastructure to Azure.

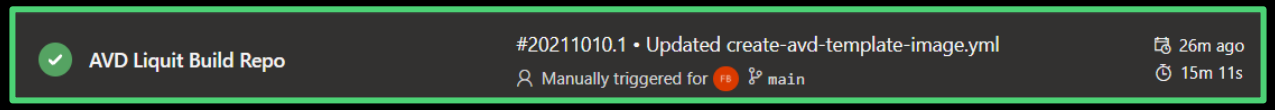
Intuitive
Easy to read and to author

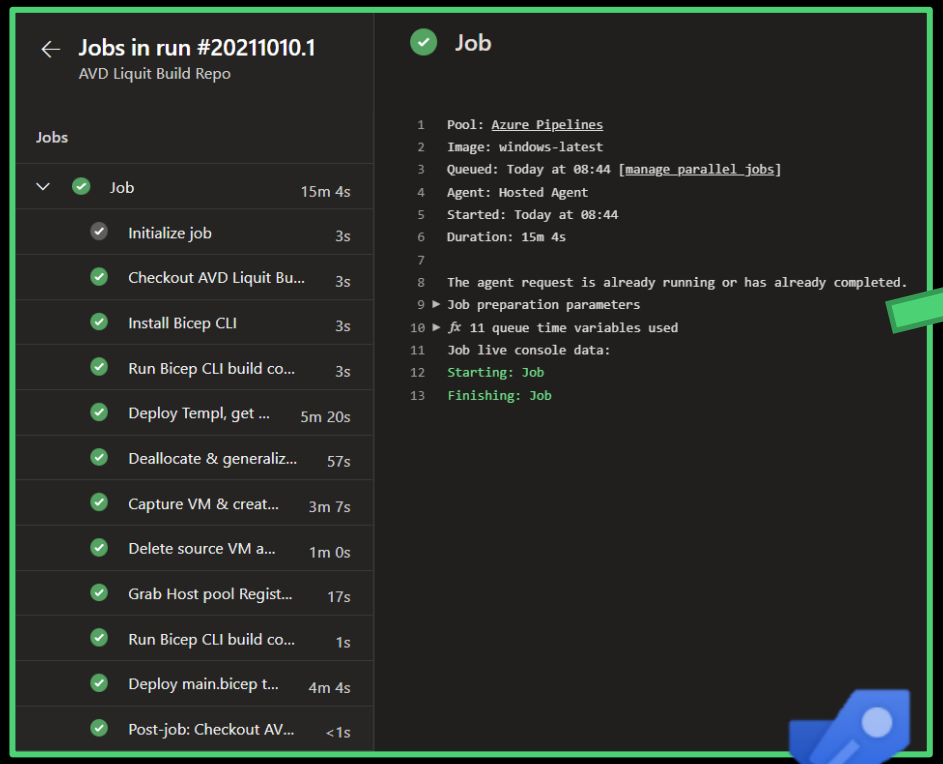
Transpiles to ARM Templates
Leverage ARM template knowledge and investments

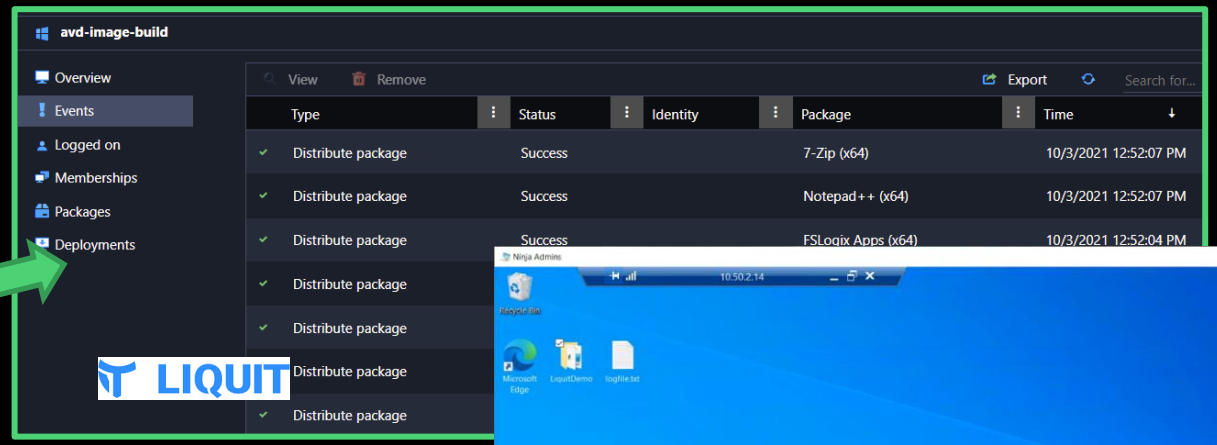
Modular
Abstract common blocks of code into reusable parts

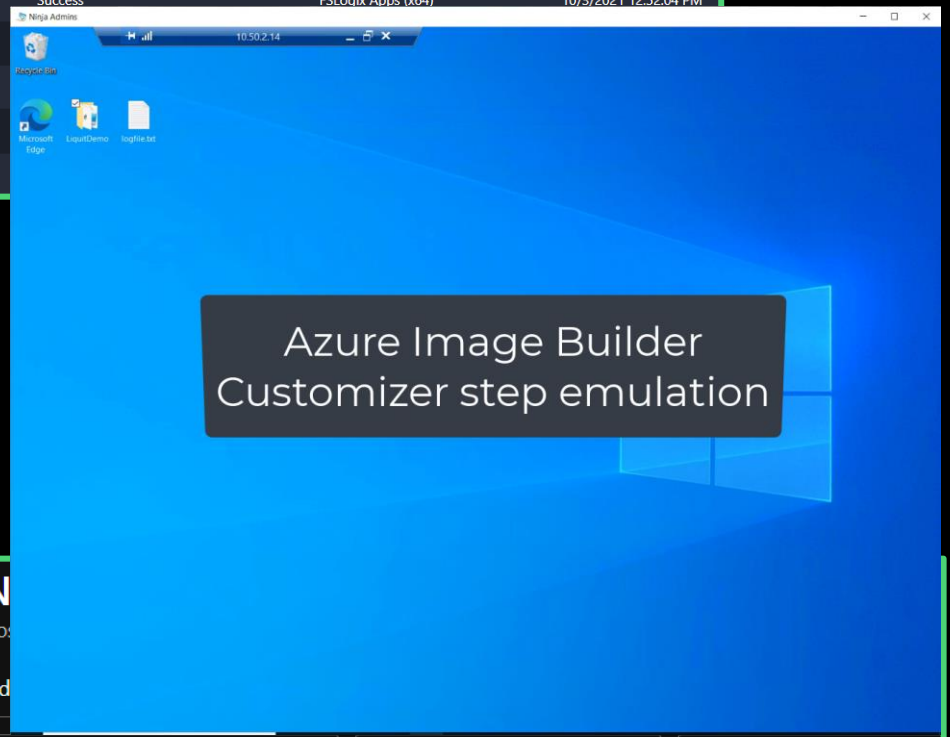
Open Source
Transparency and community

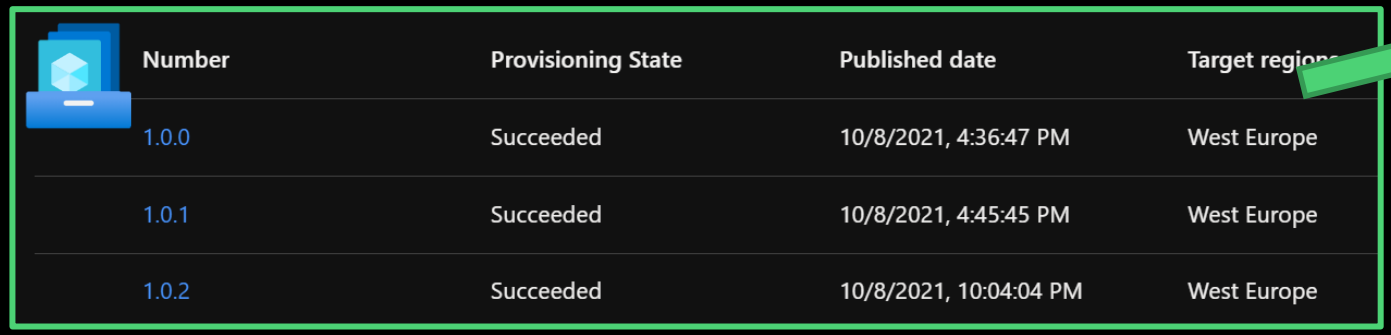


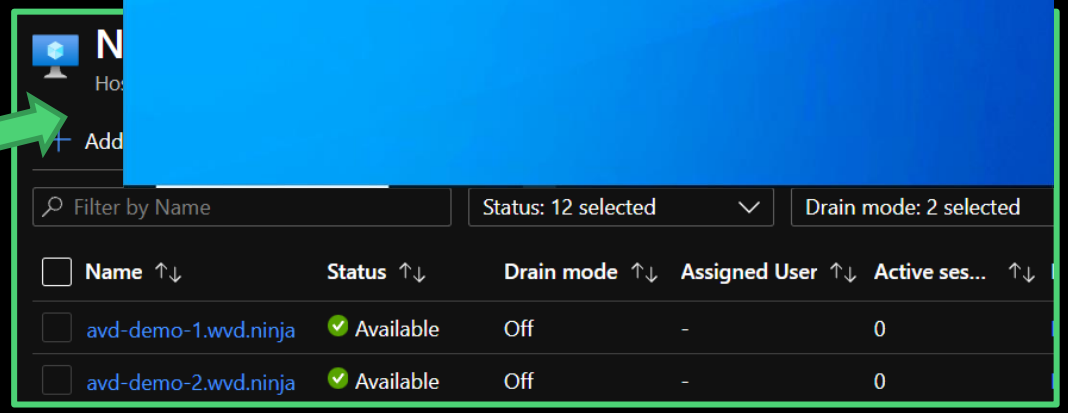

AVD Liquit Build Repo
#20211010.1 • Updated create-avd-template-image.yml
Manually triggered for FB main
26m ago
15m 11s


Jobs in run #20211010.1
AVD Liquit Build Repo
Jobs
Job 15m 4s
Initialize job 3s
Checkout AVD Liquit Bu... 3s
Install Bicep CLI 3s
Run Bicep CLI build co... 3s
Deploy Templ, get ... 5m 20s
Deallocate & generaliz... 57s
Capture VM & creat... 3m 7s
Delete source VM a... 1m 0s
Grab Host pool Regist... 17s
Run Bicep CLI build co... 1s
Deploy main.bicep t... 4m 4s
Post-job: Checkout AV... <1s
Job
Pool: Azure Pipelines
Image: windows-latest
Queued: Today at 08:44 [manage parallel jobs]
Agent: Hosted Agent
Started: Today at 08:44
Duration: 15m 4s
The agent request is already running or has already completed.
Job preparation parameters
11 queue time variables used
Job live console data:
Starting: Job
Finishing: Job

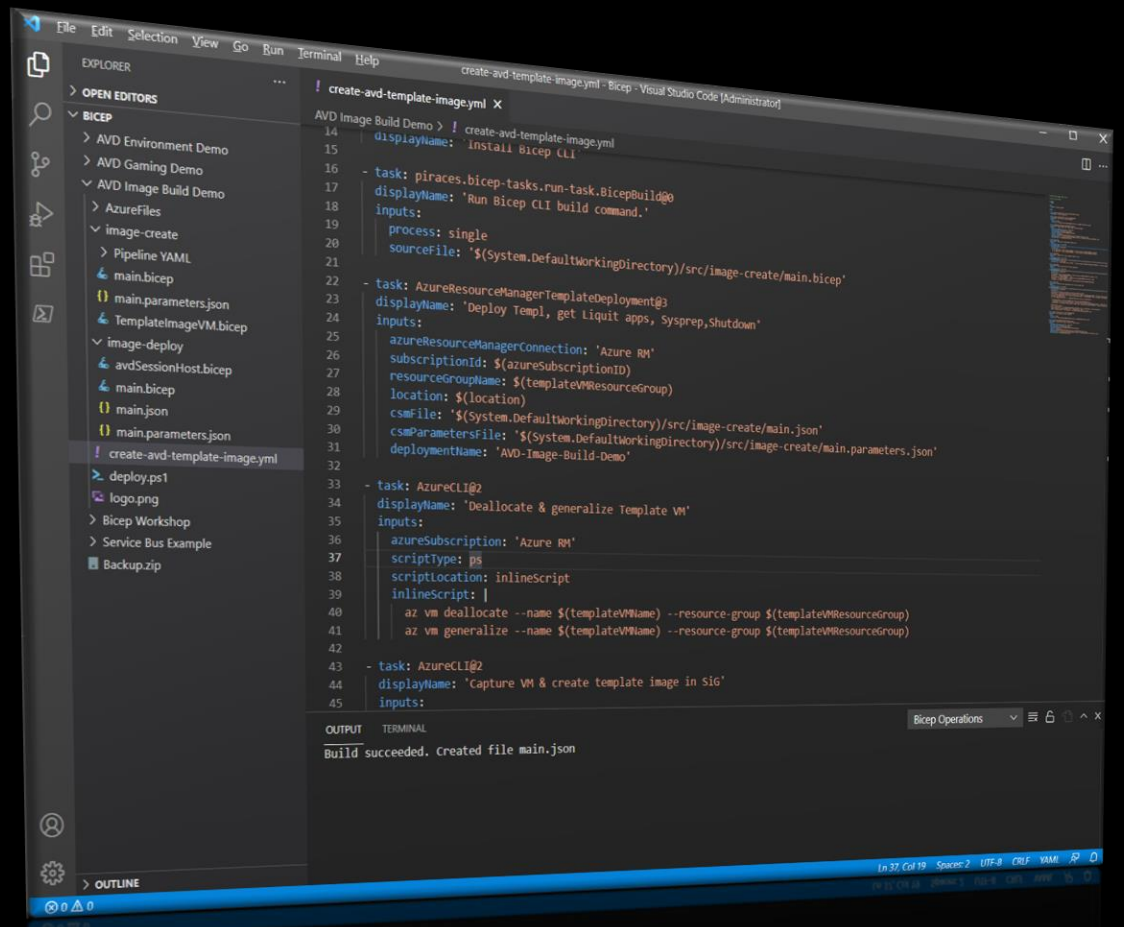

avd-image-build
Overview
Events
Logged on
Memberships
Packages
Deployments
View
Remove
Export
Search for...
Type
Status
Identity
Package
Time
Distribute package Success 7-Zip (x64) 10/3/2021 12:52:07 PM
Distribute package Success Notepad++ (x64) 10/3/2021 12:52:07 PM
Distribute package Success FSLogix Apps (x64) 10/3/2021 12:52:04 PM
Distribute package
Distribute package
Distribute package
Distribute package
LIQUIT


Azure Image Builder
Customizer step emulation


Number
Provisioning State
Published date
Target regions
1.0.0 Succeeded 10/8/2021, 4:36:47 PM West Europe
1.0.1 Succeeded 10/8/2021, 4:45:45 PM West Europe
1.0.2 Succeeded 10/8/2021, 10:04:04 PM West Europe

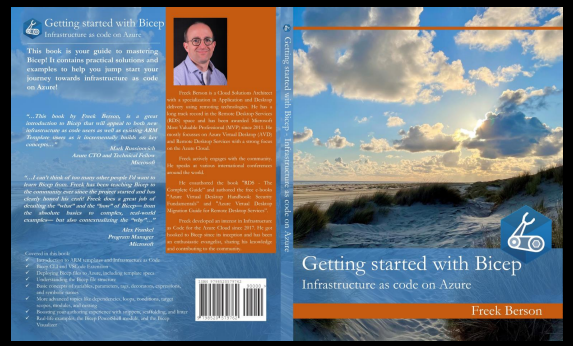

Filter by Name
Status: 12 selected
Drain mode: 2 selected
Name
Status
Drain mode
Assigned User
Active ses...
avd-demo-1.wvd.ninja Available Off - 0
avd-demo-2.wvd.ninja Available Off - 0

Demo


File Edit Selection View Go Run Terminal Help
create-avd-template-image.yml - Bicep - Visual Studio Code [Administrator]
EXPLORER
OPEN EDITORS
BICEP
AVD Environment Demo
AVD Gaming Demo
AVD Image Build Demo
AzureFiles
image-create
Pipeline YAML
main.bicep
main.parameters.json
TemplateImageVM.bicep
image-deploy
avdSessionHost.bicep
main.bicep
main.json
main.parameters.json
create-avd-template-image.yml
deploy.ps1
logo.png
Bicep Workshop
Service Bus Example
Backup.zip
create-avd-template-image.yml
AVD Image Build Demo > create-avd-template-image.yml
displayName: 'Install Bicep CLI'
- task: piraces.bicep-tasks.run-task.BicepBuild@0
displayName: 'Run Bicep CLI build command.'
inputs:
process: single
sourceFile: '$(System.DefaultWorkingDirectory)/src/image-create/main.bicep'
- task: AzureResourceManagerTemplateDeployment@3
displayName: 'Deploy Templ, get Liquit apps, Sysprep,Shutdown'
inputs:
azureResourceManagerConnection: 'Azure RM'
subscriptionId: $(azureSubscriptionID)
resourceGroupName: $(templateVMResourceGroup)
location: $(location)
csmFile: '$(System.DefaultWorkingDirectory)/src/image-create/main.json'
csmParametersFile: '$(System.DefaultWorkingDirectory)/src/image-create/main.parameters.json'
deploymentName: 'AVD-Image-Build-Demo'
- task: AzureCLI@2
displayName: 'Deallocate & generalize Template VM'
inputs:
azureSubscription: 'Azure RM'
scriptType: ps
scriptLocation: inlineScript
inlineScript:
az vm deallocate --name $(templateVMName) --resource-group $(templateVMResourceGroup)
az vm generalize --name $(templateVMName) --resource-group $(templateVMResourceGroup)
- task: AzureCLI@2
displayName: 'Capture VM & create template image in SIG'
inputs:
OUTPUT TERMINAL
Bicep Operations
Build succeeded. Created file main.json
OUTLINE

Thank you & call to actions!

Win the book:



All source code:

https://github.com/fberson/Empowering-AVD-Image-deployments-with-Azure-Pipelines-and-Liquit

@fberson

Freek Berson

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github.com/fberson

Microsoft MVP

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