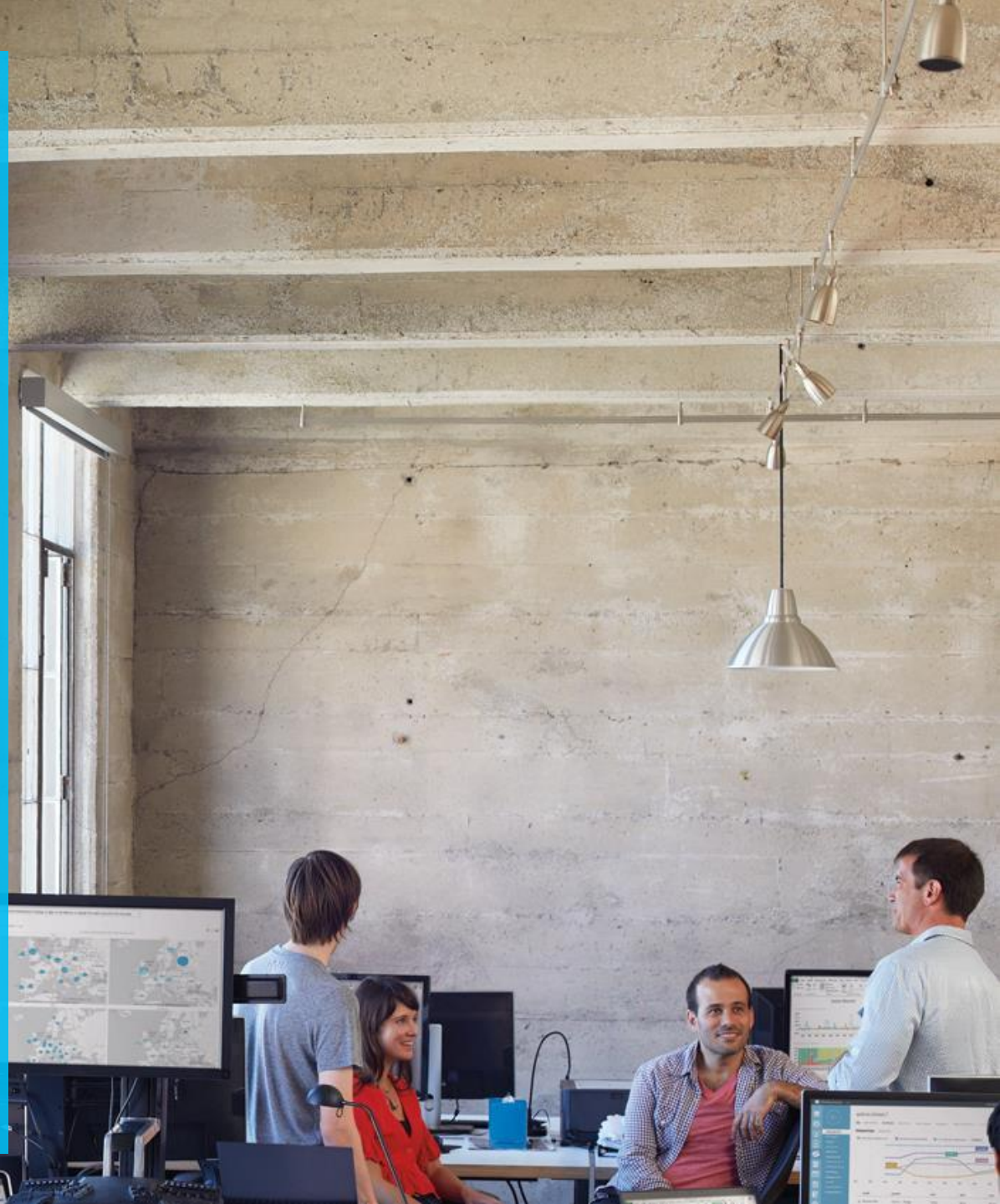




Microsoft Azure

Accelerate Amsterdam Deployment with ARM templates and GIT

Robert Bakker
31-05-2016



Agenda

- ➔ Objectives
- ➔ Technology overview
- ➔ Lab environment and exercises



Objectives

You will:

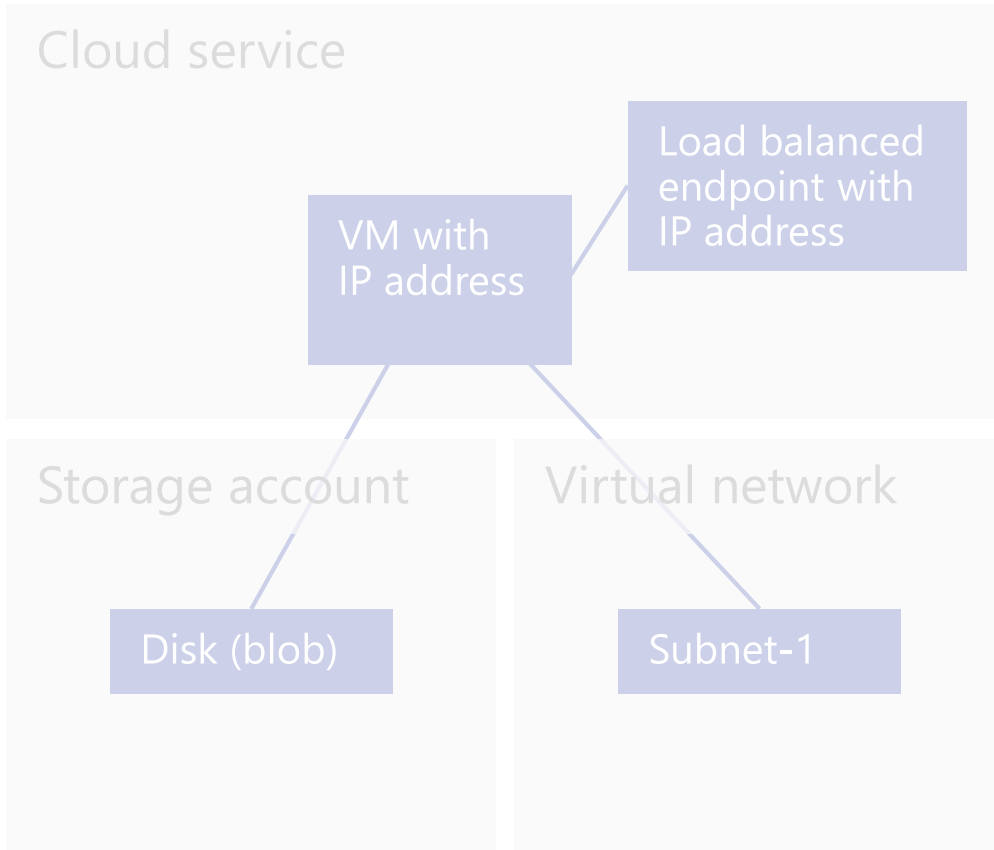
- ➔ Understand Azure Quickstart templates
- ➔ Learn about GitHub and GIT repositories
- ➔ Learn how to configure Visual Studio Code to use GIT
- ➔ Learn how to customize a template and its related parameters JSON file using Visual Studio Code to meet your specific and additional requirements
- ➔ Learn how to stage and commit changes to the local and remote GIT repository

Technology overview

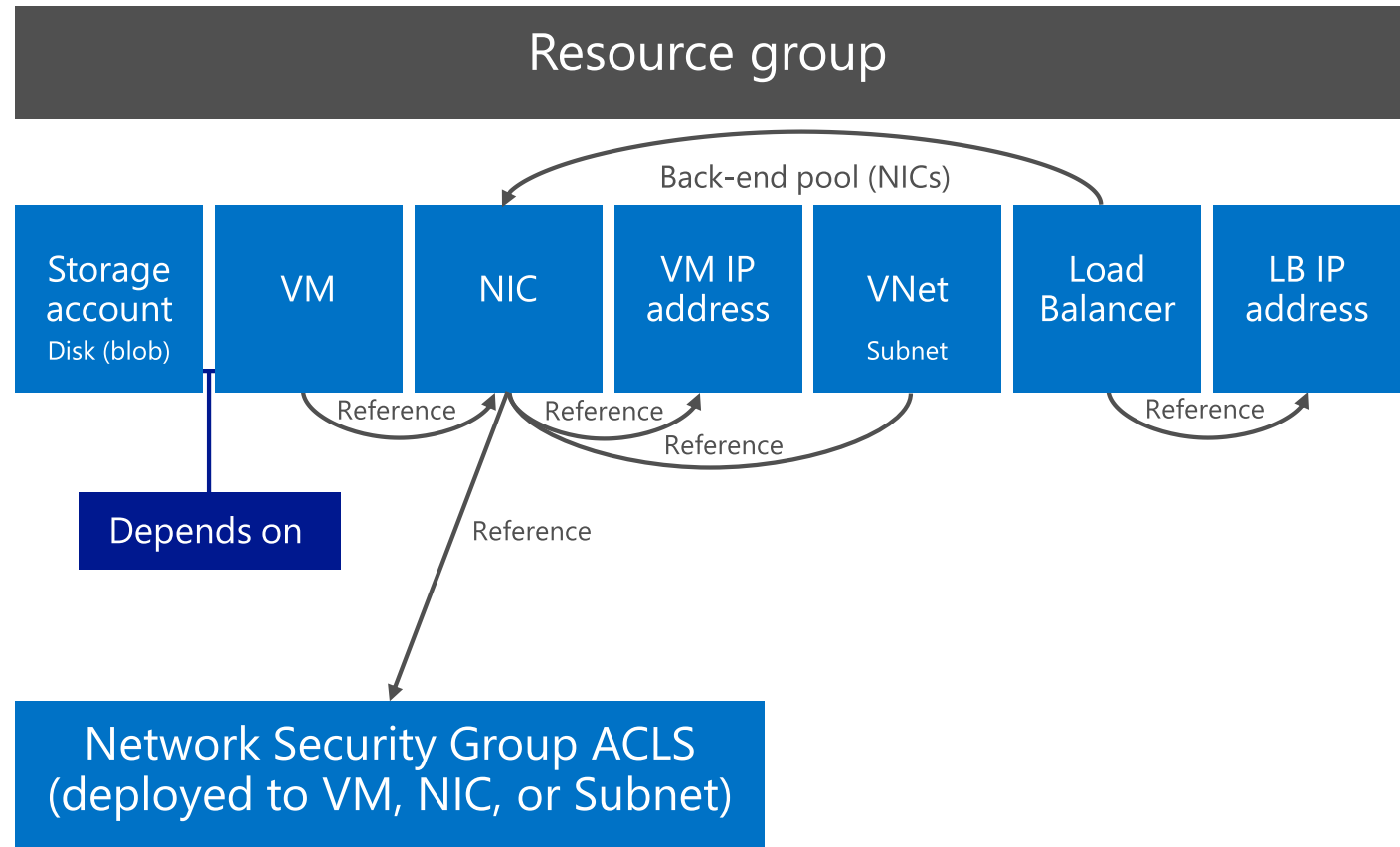


Resource Manager example

Classic model (v1)



Resource Manager (v2)



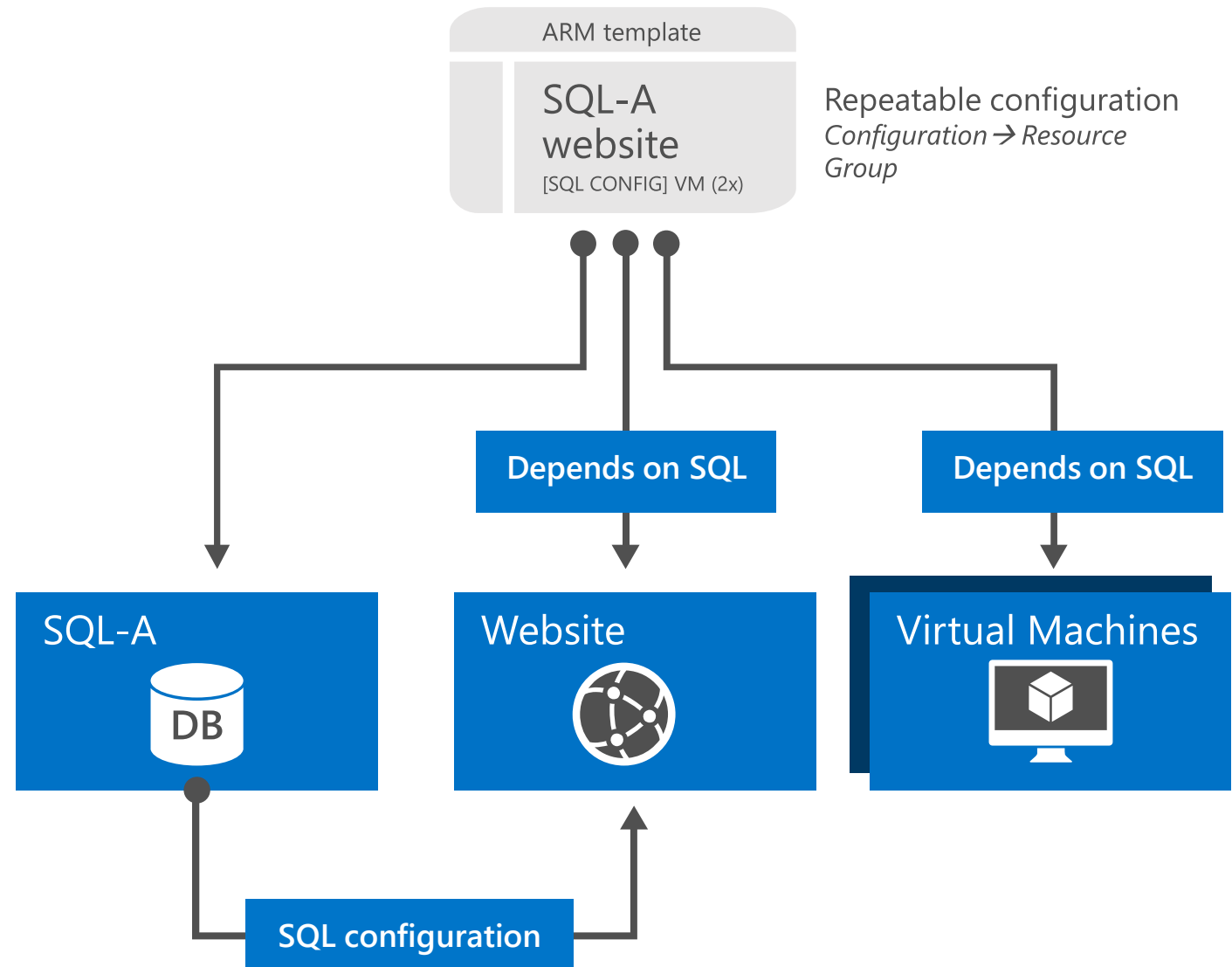
Azure Resource Manager templates

ARM templates can:

- Simplify deployment
- Simplify roll-back
- Provide cross-resource configuration and update support
- Be used as a learning tool to build to suit

Azure templates are:

- Source file, checked-in
- Specifies resources and dependencies (VMs, websites, DBs) and connections (configuration, LB sets)
- Configurable parameters for input/output



Common use cases for ARM templates

Enterprises and system integrators

- Internal software development teams
 - Delivering an application
- Corporate IT
 - Delivering a capability or cloud capacity

Cloud Service Vendors (CSVs)

- Support different multi-tenancy approaches
 - Distinct deployments per customer
 - Within the CSV's subscription
 - "Bring your own subscription" model that uses customer subscriptions
 - Scale units within a central multi-tenant system
- Support ability to make available via the marketplace

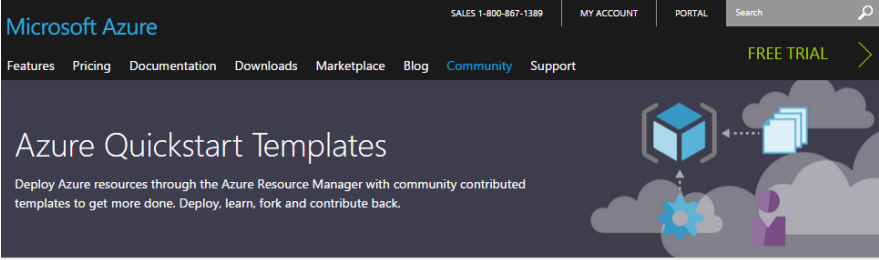
All deploy known configurations/SKUs/VM sizes

Getting started with Azure templates

Wide range of Quickstart templates

- Indexed on Azure.com
- GitHub repo
- Community and Microsoft contributed

Integration of IaaS with Azure Services



Microsoft Azure

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Azure Quickstart Templates

Deploy Azure resources through the Azure Resource Manager with community contributed templates to get more done. Deploy, learn, fork and contribute back.

What is Azure Resource Manager

Azure Resource Manager allows you to provision your applications using a declarative template. In a single template, you can deploy multiple services along with their dependencies. You use the same template to repeatedly deploy your application during every stage of the application lifecycle.

Learn more >

Sort by:

TEMPLATE	GITHUB AUTHOR	DESCRIPTION	PUBLISHED
Install Elasticsearch cluster on Virtual Machines	trentmswanson	Install Elasticsearch cluster on Virtual Machines wi...	5/26/2015
Deploy a Virtual Machine with Custom Data	kenazk	Deploy a Virtual Machine with Custom Data	5/1/2015
Create an Availability Set	kenazk	Create an Availability Set	5/1/2015
Create a new AD Forest and Domain with 2 Domain Con...	simongdavies	This template creates 2 Azure VMs with AD	4/29/2015
Create an Azure VM with a new AD Forest	simongdavies	This template creates an Azure VM with AD	4/29/2015
Create a Three VM Sharepoint Deployment	simongdavies	This template creates a SharePoint farm	4/29/2015
Django App with SQL Databases	meet-bhagdev	Deploy a Django app with SQL Databases	4/28/2015
Deploy a LAMP app	gbowerman	Deploy a LAMP app	4/28/2015
Datastax Enterprise Edition on Ubuntu	trentmswanson	This template deploys a Datastax Enterprise Editio...	4/28/2015
Deploy a single-VM WordPress to Azure	tomconte	Deploy a single-VM WordPress to Azure	4/28/2015
Apache Webserver on Ubuntu VM	gbowerman	Deploy an Ubuntu VM with Apache webserver	4/28/2015

Many examples available @
<https://github.com/Azure/azure-quickstart-templates>

JSON files—simpler than they look

Schema, content version, parameters, variables, resources, and outputs



The image shows a screenshot of an Azure Resource Manager (ARM) template editor. On the left, there is a sidebar with a 'Branch' dropdown, a user profile icon, and a list of files. The main area displays a JSON template with the following structure:

```
"resources": [  
  {  
    "type": "Microsoft.Storage/storageAccounts",  
    "name": "[parameters('newStorageAccountName')]",  
    "apiVersion": "2015-05-01-preview",  
    "location": "[variables('location')]",  
    "properties": {  
      "accountType": "[variables('storageAccountType')]"  
    }  
  },  
  {  
    "apiVersion": "2015-05-01-preview",  
    "type": "Microsoft.Network/publicIPAddresses",  
    "name": "[variables('publicIPAddressName')]",  
    "location": "[variables('location')]",  
    "properties": {  
      "publicIPAllocationMethod": "[variables('publicIPAllocationType')]",  
      "dnsSettings": {  
        "domainNameLabel": "[parameters('dnsNameForPublicIP')]"  
      }  
    }  
  }  
],
```

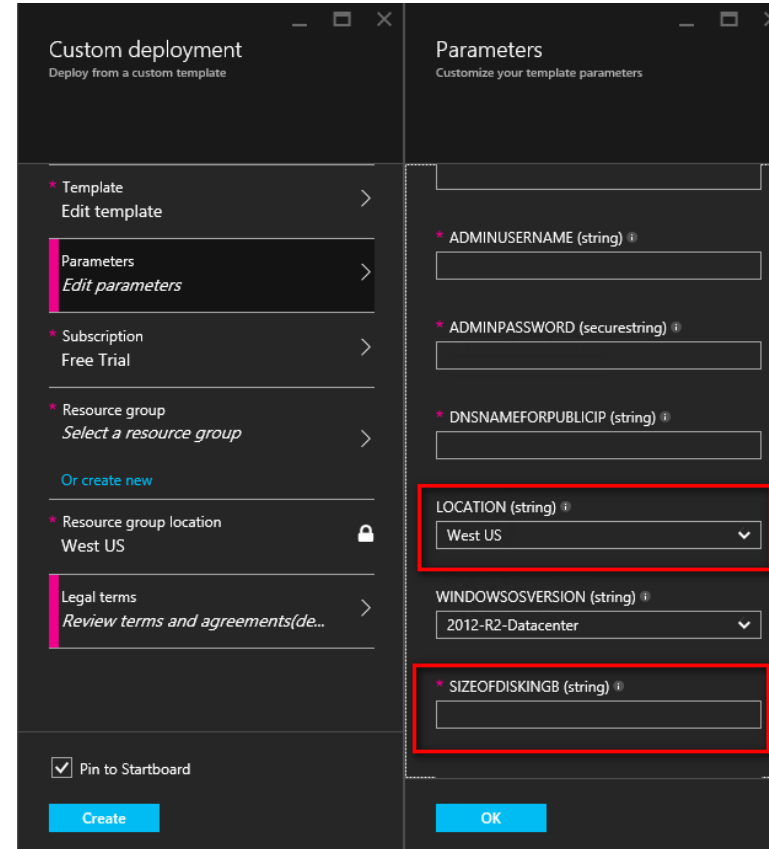
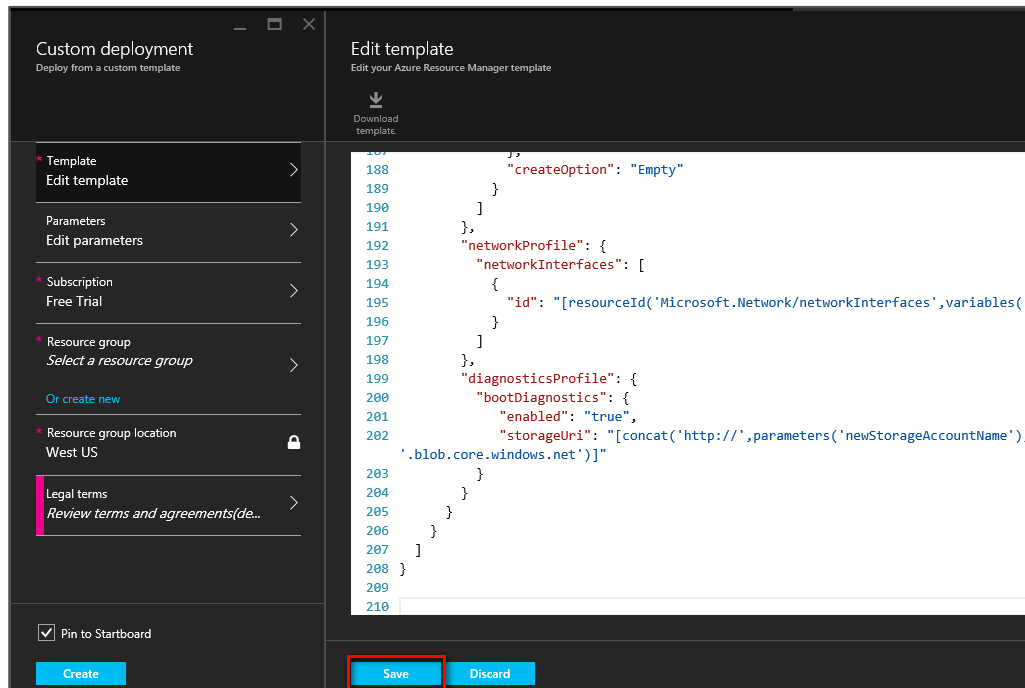
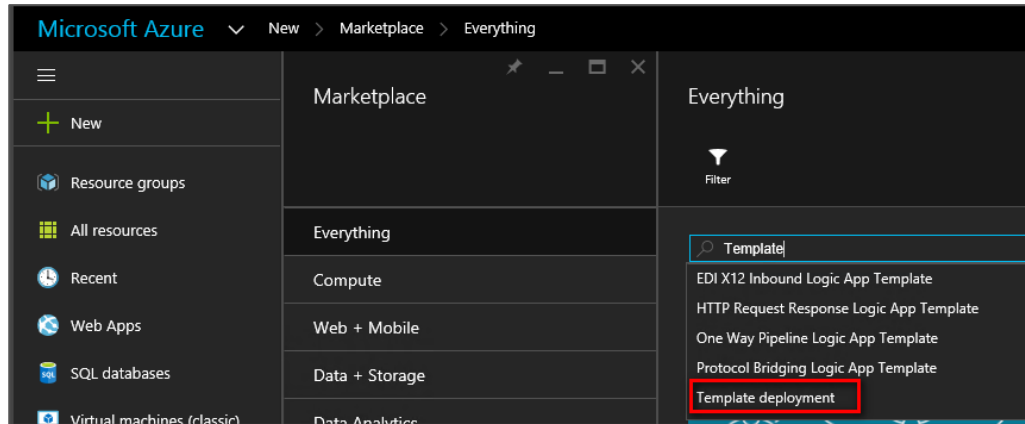
The JSON code is displayed in a light blue font on a white background. The editor interface includes a sidebar on the left with a 'Branch' dropdown, a user profile icon, and a list of files. The main area shows the JSON template with the following structure:

```
"resources": [  
  {  
    "type": "Microsoft.Storage/storageAccounts",  
    "name": "[parameters('newStorageAccountName')]",  
    "apiVersion": "2015-05-01-preview",  
    "location": "[variables('location')]",  
    "properties": {  
      "accountType": "[variables('storageAccountType')]"  
    }  
  },  
  {  
    "apiVersion": "2015-05-01-preview",  
    "type": "Microsoft.Network/publicIPAddresses",  
    "name": "[variables('publicIPAddressName')]",  
    "location": "[variables('location')]",  
    "properties": {  
      "publicIPAllocationMethod": "[variables('publicIPAllocationType')]",  
      "dnsSettings": {  
        "domainNameLabel": "[parameters('dnsNameForPublicIP')]"  
      }  
    }  
  }  
],
```

Passing state—common parameters

Name (string values)	Description
Location	The location where the resources will be deployed from a constrained list of Azure regions
storageAccountNamePrefix	Unique DNS name for the storage account where the VM's disks will be placed
virtualNetworkName	For deployments that create a new virtual network, the name to use for creating that resource. For deployments that use an existing virtual network, the name of the VNet to deploy into
username	User name for the virtual machine(s) and potentially the application(s). More than one user name can be requested from the end user, but at least one must be prompted
password	Password for the virtual machine(s) and potentially the application(s). More than one password can be requested from the end user for different VMs or applications, but at least one must be prompted
tshirtSize	The named scale unit size to provision from a constrained list of offered t-shirt sizes For example, "Small", "Medium", "Large"
enableJumpbox	Parameter that identifies whether to enable a jumpbox for the environment Values: "enabled", "disabled"

Deploying custom JSON files



```
New-AzureResourceGroupDeployment -DeploymentName  
"Simple-VM" -ResourceGroupName  
RG-AZITCAMP -TemplateFile "C:\Github\Templates\101-  
simple-windows-vm\azuredeploy.json
```

Tools to help manage templates

- GitHub
- Visual Studio Code
- NotePad/NotePad++

GIT

- A widely used version control system for software development
- A distributed revision control system with an emphasis on speed, data integrity, and support for distributed, non-linear workflows
- A full-fledged repository with complete history and full version-tracking capabilities, independent of network access or a central server

GitHub

<https://github.com>

- The largest code host on the planet with over **27.6 million** repositories
- Every repository comes with the same powerful tools
- Tools are open to the community for public projects and secure for private projects
- Allows for creation of a GIT Desktop and cloned repository

Visual Studio Code integration with GIT

- Open your team repository in Visual Studio
- Clone your repository
- Create a new app
- Confirm your settings and add the app
- Snapshot (commit) your code
- Pull changes from your team
- Push your local commits to the server

Lab 2 – Git, GitHub, ARM template en Apache/PHP cluster maken

- Tot 12:30 (lunch)
- Volgende sessie start om 13:30



