## 1. Objective – Create and configure a VM for Windows and Linux

1. Select **Home > Resource groups**, then choose your resource group, such as *oreilly-az104*
2. At the top of the resource group window select **+ Add** then select "*Windows Server 2016 Datacenter*" from list of popular resources, then choose **Create**. Enter the following configuration information. If not noted below, use the defaults:

   Resource group: *oreilly-az104*

   Name: *winvm01*

   Region: *West US*

   Availability options: *No infrastructure redundancy required, but note how you could create and use an availability set or scale set. In supported regions, Availability Zones would also be available.*

   Size: *Change size, browse and select B1ms. Note filters across the top.*

   Username: *azureuser*

   Password and confirm: *Your own secure password, note password requirements tool tip*

   Public inbound ports: *None*

3. Select **Next: Disks**. Look at disk options, including creating and / or attaching additional data disks. For *OS disk type*, select *Standard SSD.*
4. Select **Next: Networking**. Make sure that *vnet-westus* is selected, then choose to connect to the *frontend-subnet.*
   Allow a new *public* IP to be created by default. Set *NIC network security group* to *none,* and don't connect to a load balancer just yet. We'll come back later and finish configuration of the load balancer from a previous lab and connect the VM then.
5. Select **Next: Management** and review the options at deployment time for boot diagnostics, managed identity, or auto-shutdown. Some of these are only available through the portal, not when automating deployments with Resource Manager templates or Azure PowerShell. Leave the default options, then select **Next: Advanced**
6. Here you can install extensions at deployment time, and for Linux VMs, use cloud-init for post-deployment configuration tasks. Options for host groups and proximity placement groups, when already created, are also available.
   Leave all the options as defaults for now.
7. When ready, select **Review + create**, then **Create**
8. If needed, select the notification bell in the top right-hand corner to view deployment progress as the VM is created. It takes a minute or two to create the resource. When ready, select **Go to resource**.

## 2. Objective – Save a deployment as a template

1. From your VM, select **Settings** from the menu on the left-hand side, then choose **Export template**

2. Templates let you create reproducible deployments. They use the JSON format, and can be a little hard to understand at first. A good way to learn is to create a resource, then export the template.
   You can **Download** the template as a zip file, which also includes a parameters file and scripts to deploy, such as with PowerShell. The Visual Studio Code editor (https://code.visualstudio.com/) has an extension for authoring templates to simply the process (https://marketplace.visualstudio.com/items?itemName=msazurermtools.azurerm-vscode-tools).
3. Select **Add to library**, then enter name, such as *winvm*, and a description, such as *AZ-104 training*. When ready, select **Save.**

## 3. Objective – Modify and deploy an Azure Resource Manger template

1. Across the top of the Azure portal, search for and select *templates*
2. Select your *winvm* template added to the library in the previous exercise, then choose **Deploy**
3. The template includes connections for the existing virtual disks and network interfaces. You won't be able to deploy this template without modifications. Usually, templates are built using parameters and variables, not hard-coded resource IDs.
   Select **Edit template**
4. You won't be able to quickly update this template to create a new VM. The goal is to show you built-in tools of the Azure portal to create, edit, and deploy templates if you don't want to use, or have access to, Visual Studio Code or a similar local editor.
   As you make changes, you can **Save** the template, then provide any settings before using the **Purchase** option to deploy from template.