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Azure Resource Manager Templates provide simple and unified way to create and manage your Azure environments for both developers and administrators. With simple JSON files you can deploy your environment in consistent fashion and at great speed.

Pre Requisite Setup :

- 1) Setting up Powershell :

```
Administrator: Windows PowerShell

Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

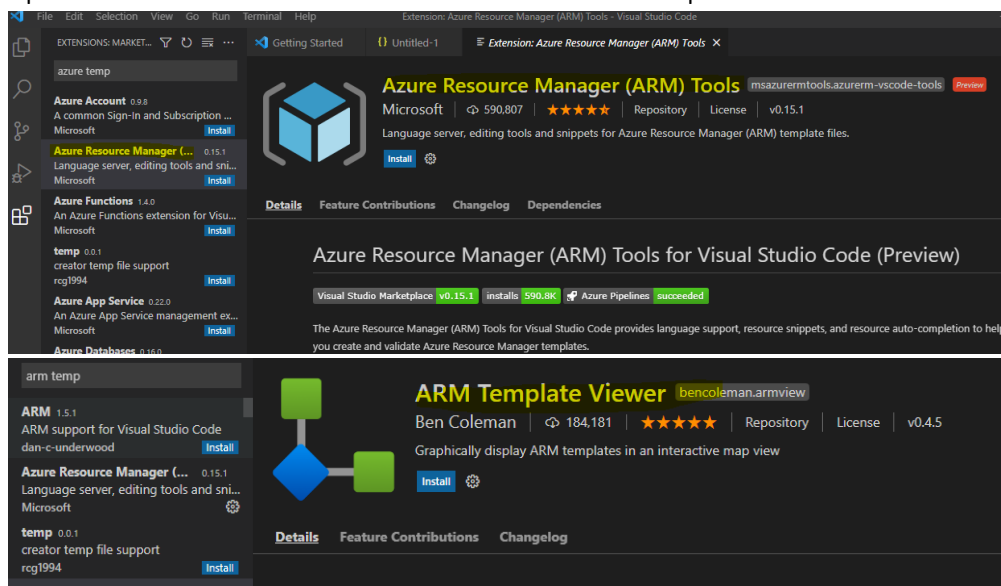
PS C:\WINDOWS\system32> Install-Module -Name Az -Scope CurrentUser -Repository PSGallery -Force
PS C:\WINDOWS\system32> Install-Module -Name Az -Force -Allowclobber
```

Run

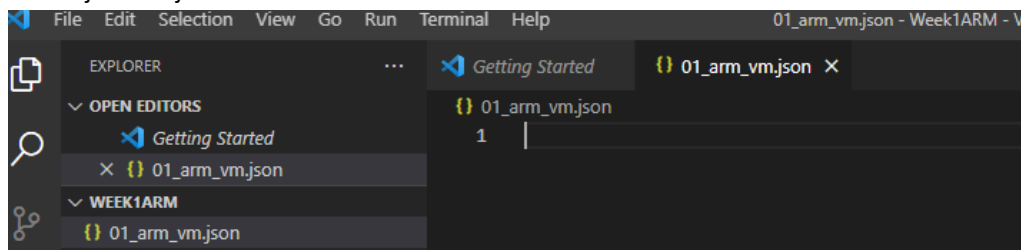
```
PS C:\WINDOWS\system32> Import-Module Az
```

<https://docs.microsoft.com/en-us/powershell/azure/install-az-ps?view=azps-6.0.0>

- 2) Open Visual Studio Code and Install ARM tools and ARM Template Viewer



- 3) Create json file json file



- 4) Test azure connection : connect-azaccount

```
PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> Connect-AZAccount
```

Microsoft Azure

Microsoft

← student_10f0devikp882u8s_00422196@vocareumvoc...
 Enter password

[Forgot my password](#)
 Sign in

Account

 student_10f0devikp882u8s_00422196@vocareumvocareum.onmicrosoft.com

SubscriptionName TenantId

 Production 1 9b7cbd77-6d6b-4879-8aba-...

Create VM using powershell

```
03-arm-vm-new.ps1
1 new-AzVM
2 -ResourceGroupName "Regroup_7bwx" `
3 -Name "sathi01weekvm1" `
4 -Location "South India" `
5 -Size "Standard_D2s_v3" `
6 -Image "Win2019Datacenter" `
7 -VirtualNetworkName "myVnet" `
8 -SubnetName "sathi01Subnet" `
9 -SecurityGroupName "sathi01NetworkSecurityGroup" `
10 -PublicIpAddressName "sathi01PublicIpAddress" `
11 -OpenPorts 3389
12
```

Windows PowerShell credential request

Enter your credentials.

User name: sathishanm
 Password:

OK Cancel

PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> .\03-arm-vm-new.ps1

cmdlet New-AzVM at command pipeline position 1
 Supply values for the following parameters:
 Credential

```
ResourceGroupName : Regroup_7bwx
Id                : /subscriptions/f700a502-f4c5-42f4-8f1d-cacab88d7d39/resourceGroups/Regroup_7bwx/providers/Microsoft.Compute/virtualMachines/sathi01weekvm1
VmId              : 3674767e-dbb3-4e99-a2de-92329c7439d6
Name              : sathi01weekvm1
Type              : Microsoft.Compute/virtualMachines
Location          : southindia
Tags              : {}
HardwareProfile   : {VmSize}
NetworkProfile    : {NetworkInterfaces}
OSProfile         : {ComputerName, AdminUsername, WindowsConfiguration, Secrets, AllowExtensionOperations, RequireGuestProvisionSignal}
ProvisioningState : Succeeded
StorageProfile    : {ImageReference, OsDisk, DataDisks}
FullyQualifiedDomainName : sathi01weekvm1-b1be95.South India.cloudapp.azure.com
```

Resource group

Search (Ctrl+)

Overview

Activity log

Access control (IAM)

Tags

Events

Settings

Deployments

Security

Policies

Properties

Locks

Cost Management

Essentials

Subscription (change): Production 1

Subscription ID: f700a502-f4c5-42f4-8f1d-cacab88d7d39

Location: West US

Tags (change): Click here to add tags

Filter for any field... Type == all Location == all Add filter

Showing 1 to 6 of 6 records. Show hidden types

Name	Type	Location
sathi01NetworkSecurityGroup	Network security group	South India
sathi01PublicIpAddress	Public IP address	South India
sathi01weekvm1	Virtual machine	South India
sathi01weekvm1	Network interface	South India
sathi01weekvm1	Disk	South India

Create VM Using ARM Template



01_arm_vm.json

```
{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "parameters": {
    "adminUsername": {
      "type": "string",
      "defaultValue": "sathishanm",
      "metadata": {
        "description": "Username for the Virtual Machine."
      }
    },
    "adminPassword": {
      "type": "securestring",
      "minLength": 12,
      "metadata": {
        "description": "Password for the Virtual Machine."
      }
    },
    "dnsLabelPrefix": {
      "type": "string",
      "defaultValue": "[toLower(concat(parameters('vmName'), '-', uniqueString(resourceGroup().id, parameters('vmName'))))]",
      "metadata": {
        "description": "Unique DNS Name for the Public IP used to access the Virtual Machine."
      }
    },
    "publicIpName": {
      "type": "string",
      "defaultValue": "myPublicIP",
      "metadata": {
        "description": "Name for the Public IP used to access the Virtual Machine."
      }
    },
    "publicIPAllocationMethod": {
      "type": "string",
      "defaultValue": "Dynamic",
      "allowedValues": [
        "Dynamic",
        "Static"
      ],
      "metadata": {
        "description": "Allocation method for the Public IP used to access the Virtual Machine."
      }
    },
    "publicIpSku": {
      "type": "string",
      "defaultValue": "Basic",

```

```

    "allowedValues": [
      "Basic",
      "Standard"
    ],
    "metadata": {
      "description": "SKU for the Public IP used to access the Virtual Machine."
    }
  },
  "OSVersion": {
    "type": "string",
    "defaultValue": "2019-Datacenter",
    "allowedValues": [
      "2008-R2-SP1",
      "2012-Datacenter",
      "2012-R2-Datacenter",
      "2016-Nano-Server",
      "2016-Datacenter-with-Containers",
      "2016-Datacenter",
      "2019-Datacenter",
      "2019-Datacenter-Core",
      "2019-Datacenter-Core-smalldisk",
      "2019-Datacenter-Core-with-Containers",
      "2019-Datacenter-Core-with-Containers-smalldisk",
      "2019-Datacenter-smalldisk",
      "2019-Datacenter-with-Containers",
      "2019-Datacenter-with-Containers-smalldisk"
    ],
    "metadata": {
      "description": "The Windows version for the VM. This will pick a fully patched image of this given Windows version."
    }
  },
  "vmSize": {
    "type": "string",
    "defaultValue": "Standard_DS1_v2",
    "metadata": {
      "description": "Size of the virtual machine."
    }
  },
  "location": {
    "type": "string",
    "defaultValue": "[resourceGroup().location]",
    "metadata": {
      "description": "Location for all resources."
    }
  },
  "vmName": {
    "type": "string",
    "defaultValue": "saweekdemovm",
    "metadata": {
      "description": "Name of the virtual machine."
    }
  },
  "variables": {
    "storageAccountName": "[concat('bootdiags', uniquestring(resourceGroup().id))]",

```

```

    "nicName": "savnnickname",
    "addressPrefix": "10.0.0.0/16",
    "subnetName": "Subnet",
    "subnetPrefix": "10.0.0.0/24",
    "virtualNetworkName": "savirnetdemo",
    "subnetRef": "[resourceId('Microsoft.Network/virtualNetworks/subnets', variables('virtualNetworkName'), variables('subnetName'))]",
    "networkSecurityGroupName": "default-NSG"
  },
  "resources": [
    {
      "type": "Microsoft.Storage/storageAccounts",
      "apiVersion": "2019-06-01",
      "name": "[variables('storageAccountName')]",
      "location": "[parameters('location')]",
      "sku": {
        "name": "Standard_LRS"
      },
      "kind": "Storage",
      "properties": {}
    },
    {
      "type": "Microsoft.Network/publicIPAddresses",
      "apiVersion": "2020-06-01",
      "name": "[parameters('publicIPName')]",
      "location": "[parameters('location')]",
      "sku": {
        "name": "[parameters('publicIpSku')]"
      },
      "properties": {
        "publicIPAllocationMethod": "[parameters('publicIPAllocationMethod')]"
      },
      "dnsSettings": {
        "domainNameLabel": "[parameters('dnsLabelPrefix')]"
      }
    },
    {
      "type": "Microsoft.Network/networkSecurityGroups",
      "apiVersion": "2020-06-01",
      "name": "[variables('networkSecurityGroupName')]",
      "location": "[parameters('location')]",
      "properties": {
        "securityRules": [
          {
            "name": "default-allow-3389",
            "properties": {
              "priority": 1000,
              "access": "Allow",
              "direction": "Inbound",
              "destinationPortRange": "3389",
              "protocol": "Tcp",
              "sourcePortRange": "*",
              "sourceAddressPrefix": "*",
              "destinationAddressPrefix": "*"
            }
          }
        ]
      }
    }
  ]
}

```

```

    },
    {
      "type": "Microsoft.Network/virtualNetworks",
      "apiVersion": "2020-06-01",
      "name": "[variables('virtualNetworkName')]",
      "location": "[parameters('location')]",
      "dependsOn": [
        "[resourceId('Microsoft.Network/networkSecurityGroups', variables('net
workSecurityGroupName'))]"
      ],
      "properties": {
        "addressSpace": {
          "addressPrefixes": [
            "[variables('addressPrefix')]"
          ]
        },
        "subnets": [
          {
            "name": "[variables('subnetName')]",
            "properties": {
              "addressPrefix": "[variables('subnetPrefix')]",
              "networkSecurityGroup": {
                "id": "[resourceId('Microsoft.Network/networkSecurityGroups',
variables('networkSecurityGroupName'))]"
              }
            }
          }
        ]
      }
    },
    {
      "type": "Microsoft.Network/networkInterfaces",
      "apiVersion": "2020-06-01",
      "name": "[variables('nicName')]",
      "location": "[parameters('location')]",
      "dependsOn": [
        "[resourceId('Microsoft.Network/publicIPAddresses', parameters('public
IPName'))]",
        "[resourceId('Microsoft.Network/virtualNetworks', variables('virtualNe
tworkName'))]"
      ],
      "properties": {
        "ipConfigurations": [
          {
            "name": "ipconfig1",
            "properties": {
              "privateIPAllocationMethod": "Dynamic",
              "publicIPAddress": {
                "id": "[resourceId('Microsoft.Network/publicIPAddresses', para
meters('publicIPName'))]"
              },
              "subnet": {
                "id": "[variables('subnetRef')]"
              }
            }
          }
        ]
      }
    }
  ],
}

```

```

{
  "type": "Microsoft.Compute/virtualMachines",
  "apiVersion": "2020-06-01",
  "name": "[parameters('vmName')]",
  "location": "[parameters('location')]",
  "dependsOn": [
    "[resourceId('Microsoft.Storage/storageAccounts', variables('storageAccountName'))]",
    "[resourceId('Microsoft.Network/networkInterfaces', variables('nicName'))]"
  ],
  "properties": {
    "hardwareProfile": {
      "vmSize": "[parameters('vmSize')]"
    },
    "osProfile": {
      "computerName": "[parameters('vmName')]",
      "adminUsername": "[parameters('adminUsername')]",
      "adminPassword": "[parameters('adminPassword')]"
    },
    "storageProfile": {
      "imageReference": {
        "publisher": "MicrosoftWindowsServer",
        "offer": "WindowsServer",
        "sku": "[parameters('OSVersion')]",
        "version": "latest"
      },
      "osDisk": {
        "createOption": "FromImage",
        "managedDisk": {
          "storageAccountType": "StandardSSD_LRS"
        }
      },
      "dataDisks": [
        {
          "diskSizeGB": 1023,
          "lun": 0,
          "createOption": "Empty"
        }
      ]
    },
    "networkProfile": {
      "networkInterfaces": [
        {
          "id": "[resourceId('Microsoft.Network/networkInterfaces', variables('nicName'))]"
        }
      ]
    },
    "diagnosticsProfile": {
      "bootDiagnostics": {
        "enabled": true,
        "storageUri": "[reference(resourceId('Microsoft.Storage/storageAccounts', variables('storageAccountName'))).primaryEndpoints.blob]"
      }
    }
  }
}

```



```

"outputs": {
  "hostname": {
    "type": "string",
    "value": "[reference(parameters('publicIPName')).dnsSettings.fqdn]"
  }
}
}

```



01_arm_vm_run.ps1

```

$resourceGroupName = "Regroup_1tbb"
$location = "westus"
$OSVersion = "2019-Datacenter"
$adminUsername = "sathishanm"
$adminPassword = Read-Host -Prompt "Enter the administrator password" -
AsSecureString
$dnsLabelPrefix = "week1demoip"

New-AzResourceGroup -Name $resourceGroupName -Location "$location"
New-AzResourceGroupDeployment `
  -ResourceGroupName $resourceGroupName `
  -TemplateFile "01_arm_vm.json" `
  -adminUsername $adminUsername `
  -adminPassword $adminPassword `
  -dnsLabelPrefix $dnsLabelPrefix

```

```

PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> .\01_arm_vm_run.ps1
Enter the administrator password: *****

Confirm
Provided resource group already exists. Are you sure you want to update it?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

ResourceGroupName : Regroup_1tbb
Location           : westus
ProvisioningState  : Succeeded
Tags              :
ResourceId         : /subscriptions/f700a502-f4c5-42f4-8f1d-cacab88d7d39/resourceGroups/Regroup_1tbb

```

<input type="checkbox"/>	Deployment name	Status	Last modified	Duration	Related events
<input type="checkbox"/>	01_arm_vm	Deploying	6/10/2021, 10:19:31 PM	21 seconds	Related events
Showing 1 to 5 of 5 records. <input type="checkbox"/> Show hidden types ⓘ					
No grouping ▾ List view					
<input type="checkbox"/>	Name ↑↓	Type ↑↓	Location ↑↓		
<input type="checkbox"/>	savimetdemo	virtual network	West US		
<input type="checkbox"/>	savnickname	Network interface	West US		
<input type="checkbox"/>	saweekdemovm	Virtual machine	West US		
<input type="checkbox"/>	saweekdemovm_disk2_f4ddb46a1ce941818d1e65d4f4ad4927	Disk	West US		
<input type="checkbox"/>	saweekdemovm_OsDisk_1_792084798945463f83865f5e41054dac	Disk	West US		

a) OS: Windows 2019 datacenter

```

"OSVersion": {
  "type": "string",
  "defaultValue": "2019-Datacenter",
},
"storageProfile": {
  "imageReference": {
    "publisher": "MicrosoftWindowsServer",
    "offer": "WindowsServer",
    "sku": "[parameters('OSVersion')]",
    "version": "latest"
  },
},
"vmSize": {
  "type": "string",
  "defaultValue": "Standard_DS1_v2",
  "metadata": {
    "description": "Size of the virtual machine."
  }
},

```

b) VM size: DS1_v2

```

"hardwareProfile": {
  "vmSize": "[parameters('vmSize')]"
},

```

c) Open ports: 3389

```

"name": "default-allow-3389",

```

d) Storage option: Standard SSD

```

"createOption": "FromImage",
"managedDisk": {
  "storageAccountType": "StandardSSD_LRS"
}
},

```

Azure Virtual Network (VNet)

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. There is no charge for using Azure VNet, it is free of cost. Standard charges are applicable for resources, such as Virtual Machines (VMs)

ARM for creating Vnet

```

{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "parameters": {

```

```

    "virtualNetworks_vnetsathidemo_name": {
      "defaultValue": "vnetsathidemo",
      "type": "String"
    }
  },
  "variables": {},
  "resources": [
    {
      "type": "Microsoft.Network/virtualNetworks",
      "apiVersion": "2020-11-01",
      "name": "[parameters('virtualNetworks_vnetsathidemo_name')]",
      "location": "westus",
      "properties": {
        "addressSpace": {
          "addressPrefixes": [
            "10.1.0.0/16"
          ]
        },
        "subnets": [
          {
            "name": "vsubnet",
            "properties": {
              "addressPrefix": "10.1.0.0/24",
              "delegations": [],
              "privateEndpointNetworkPolicies": "Enabled",
              "privateLinkServiceNetworkPolicies": "Enabled"
            }
          },
          {
            "name": "AzureBastionSubnet",
            "properties": {
              "addressPrefix": "10.1.1.0/24",
              "delegations": [],
              "privateEndpointNetworkPolicies": "Enabled",
              "privateLinkServiceNetworkPolicies": "Enabled"
            }
          }
        ],
        "virtualNetworkPeerings": [],
        "enableDdosProtection": false
      }
    },
    {
      "type": "Microsoft.Network/virtualNetworks/subnets",
      "apiVersion": "2020-11-01",
      "name": "[concat(parameters('virtualNetworks_vnetsathidemo_name'), '/AzureBastionSubnet')]",
      "dependsOn": [
        "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworks_vnetsathidemo_name'))]"
      ],
      "properties": {
        "addressPrefix": "10.1.1.0/24",
        "delegations": [],
        "privateEndpointNetworkPolicies": "Enabled",
        "privateLinkServiceNetworkPolicies": "Enabled"
      }
    },
    {
      "type": "Microsoft.Network/virtualNetworks/subnets",
      "apiVersion": "2020-11-01",
      "name": "[concat(parameters('virtualNetworks_vnetsathidemo_name'), '/vsubnet')]",
      "dependsOn": [
        "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworks_vnetsathidemo_name'))]"
      ],
      "properties": {
        "addressPrefix": "10.1.0.0/24",
        "delegations": [],
        "privateEndpointNetworkPolicies": "Enabled",
        "privateLinkServiceNetworkPolicies": "Enabled"
      }
    }
  ]
}

```

Deploy ARM

```
> vnetdeploy.ps1 > ...
```

```
1 $resourceGroupName = "Regroup_5jan"
2 $location = "westus"
3
4 New-AzResourceGroup -Name $resourceGroupName -Location "$location"
5 New-AzResourceGroupDeployment `
6   -ResourceGroupName $resourceGroupName `
7   -TemplateFile "vnetsample.json" `
8
```

Home > Regroup_5jan > vnetsample > Regroup_5jan > vnetsathidemo

vnetsathidemo | Subnets

Virtual network					
Search (Ctrl+/)					
+ Subnet + Gateway subnet Refresh Manage users Delete					
Overview					
Activity log					
Access control (IAM)					
Tags					
Diagnose and solve problems					
Settings					
Address space					
Connected devices					
Subnets					
DNS protection					
Search subnets					
Name ↑↓	IPv4 ↑↓	IPv6 ↑↓	Available IPs ↑↓	Delegated to ↑↓	Security group ↑↓
vsubnet	10.1.0.0/24	-	251	-	-
AzureBastionSubnet	10.1.1.0/24	-	251	-	-

Create a virtual machine

Virtual network *	vnetsathidemo
	Create new
Subnet *	vsubnet (10.1.0.0/24)
	Manage subnet configuration
Public IP	(new) demovnetvm-ip
	Create new
NIC network security group	<input type="radio"/> None
	<input checked="" type="radio"/> Basic
	<input type="radio"/> Advanced
Public inbound ports *	<input type="radio"/> None
	<input checked="" type="radio"/> Allow selected ports
Select inbound ports *	SSH (22)

NETWORK SECURITY GROUPS

Sample template for allowing RDP connection on 3389 port

```

    "securityRules": [
      {
        "name": "default-allow-3389",
        "properties": {
          "priority": 1000,
          "access": "Allow",
          "direction": "Inbound",
          "destinationPortRange": "3389",
          "protocol": "Tcp",
          "sourcePortRange": "*",
          "sourceAddressPrefix": "*",
          "destinationAddressPrefix": "*"
        }
      }
    ]
  }
}

```

ARM template

```

{
  "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "parameters": {
    "securityGroupName": {
      "type": "string",
      "metadata": {
        "description": "Name of the network security group"
      }
    }
  },
  "variables": {
    "location": "[resourceGroup().location]"
  },
  "resources": [
    {
      "apiVersion": "2015-05-01-preview",
      "type": "Microsoft.Network/networkSecurityGroups",
      "name": "[parameters('securityGroupName')]",
      "location": "[variables('location')]",
      "properties": {
        "securityRules": [
          {
            "name": "allow_http",
            "properties": {
              "description": "Permit access to HTTP",
              "protocol": "Tcp",
              "sourcePortRange": "*",
              "destinationPortRange": "80",
              "sourceAddressPrefix": "*",
              "destinationAddressPrefix": "*",
              "access": "Allow",
              "priority": 105,
              "direction": "Inbound"
            }
          },
          {
            "name": "allow_https",
            "properties": {
              "description": "Permit access to HTTPS",
              "protocol": "Tcp",
              "sourcePortRange": "*",
              "destinationPortRange": "443",
              "sourceAddressPrefix": "*",
              "destinationAddressPrefix": "*",
              "access": "Allow",
              "priority": 110,

```

```

        "direction": "Inbound"
    }
},
{
    "name": "allow_h323cs",
    "properties": {
        "description": "Permit access to H.323 CS",
        "protocol": "Tcp",
        "sourcePortRange": "*",
        "destinationPortRange": "1720",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "access": "Allow",
        "priority": 115,
        "direction": "Inbound"
    }
},
{
    "name": "allow_sip_tcp",
    "properties": {
        "description": "Permit access to SIP/TCP",
        "protocol": "Tcp",
        "sourcePortRange": "*",
        "destinationPortRange": "5060",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "access": "Allow",
        "priority": 120,
        "direction": "Inbound"
    }
},
{
    "name": "allow_sip_tls",
    "properties": {
        "description": "Permit access to SIP/TLS",
        "protocol": "Tcp",
        "sourcePortRange": "*",
        "destinationPortRange": "5061",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "access": "Allow",
        "priority": 125,
        "direction": "Inbound"
    }
},
{
    "name": "allow_signalling_tcp",
    "properties": {
        "description": "Permit access to ephemeral TCP call signalling ports",
        "protocol": "Tcp",
        "sourcePortRange": "*",
        "destinationPortRange": "33000-39999",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "access": "Allow",
        "priority": 130,
        "direction": "Inbound"
    }
},
{
    "name": "allow_media_tcp",
    "properties": {
        "description": "Permit access to ephemeral TCP media ports",
        "protocol": "Tcp",
        "sourcePortRange": "*",
        "destinationPortRange": "40000-49999",
        "sourceAddressPrefix": "*",
        "destinationAddressPrefix": "*",
        "access": "Allow",
        "priority": 135,
        "direction": "Inbound"
    }
},
},

```

```

{
  "name": "allow_h323ls",
  "properties": {
    "description": "Permit access to H.323 LS",
    "protocol": "Udp",
    "sourcePortRange": "*",
    "destinationPortRange": "1719",
    "sourceAddressPrefix": "*",
    "destinationAddressPrefix": "*",
    "access": "Allow",
    "priority": 140,
    "direction": "Inbound"
  }
},
{
  "name": "allow_signalling_udp",
  "properties": {
    "description": "Permit access to ephemeral UDP call signalling ports",
    "protocol": "Udp",
    "sourcePortRange": "*",
    "destinationPortRange": "33000-39999",
    "sourceAddressPrefix": "*",
    "destinationAddressPrefix": "*",
    "access": "Allow",
    "priority": 150,
    "direction": "Inbound"
  }
},
{
  "name": "allow_media_udp",
  "properties": {
    "description": "Permit access to ephemeral UDP media ports",
    "protocol": "Udp",
    "sourcePortRange": "*",
    "destinationPortRange": "40000-49999",
    "sourceAddressPrefix": "*",
    "destinationAddressPrefix": "*",
    "access": "Allow",
    "priority": 155,
    "direction": "Inbound"
  }
}
]
}
]
}
]
}
}

```

Deploy

```
securitygroupdeploy.ps1 X 05-arm-vm-deploy.json 05-arm-vm-param.json 05-arm-vm-run.ps1 02-arm-vm-...
securitygroupdeploy.ps1 > ...
1 $resourceGroupName = "Regroup_5jan"
2 $location = "westus"
3 $securityGroupName = Read-Host -Prompt "Name of the network security group"
4
5 New-AzResourceGroup -Name $resourceGroupName -Location "$location"
6 New-AzResourceGroupDeployment `
7     -ResourceGroupName $resourceGroupName `
8     -TemplateFile "securitygroup.json" `
9     -securityGroupName $securityGroupName `
10
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> .\securitygroupdeploy.ps1
Name of the network security group: sathidemosegrp

Confirm
Provided resource group already exists. Are you sure you want to update it?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

ResourceGroupName : Regroup_5jan
Location           : westus
ProvisioningState  : Succeeded
Tags               :
ResourceId          : /subscriptions/f700a502-f4c5-42f4-8f1d-cacab88d7d39/resourceGroups/Regroup_5jan

ResourceGroupName : Regroup_5jan
OnErrorDeployment  :
DeploymentName     : securitygroup
CorrelationId     : f3941ce5-d720-48b8-a50c-a4ba8aceadc4
ProvisioningState  : Succeeded
```

Microsoft Azure Search resources, services, and docs (u+r)

Home > Resource groups > Regroup_5jan >

sathidemosegrp Network security group

Search (Ctrl+/) << → Move Delete Refresh

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- Inbound security rules
- Outbound security rules
- Network interfaces
- Subnets
- Properties
- Locks

Priority	Name	Port	Proto
Inbound Security Rules			
105	allow_http	80	Tcp
110	allow_https	443	Tcp
115	allow_h323cs	1720	Tcp
120	allow_sip_tcp	5060	Tcp
125	allow_sip_tls	5061	Tcp
130	allow_signalling_tcp	33000-39999	Tcp
135	allow_media_tcp	40000-49999	Tcp
140	allow_h323ls	1719	Udp
150	allow_signalling_udp	33000-39999	Udp
155	allow_media_udp	40000-49999	Udp

allow_http sathidemosegrp

Save Discard Delete

Destination Any

Service HTTP

Destination port ranges 80

Protocol

☐ Any

☒ TCP

☐ UDP

☐ ICMP

Action

☒ Allow

☐ Deny

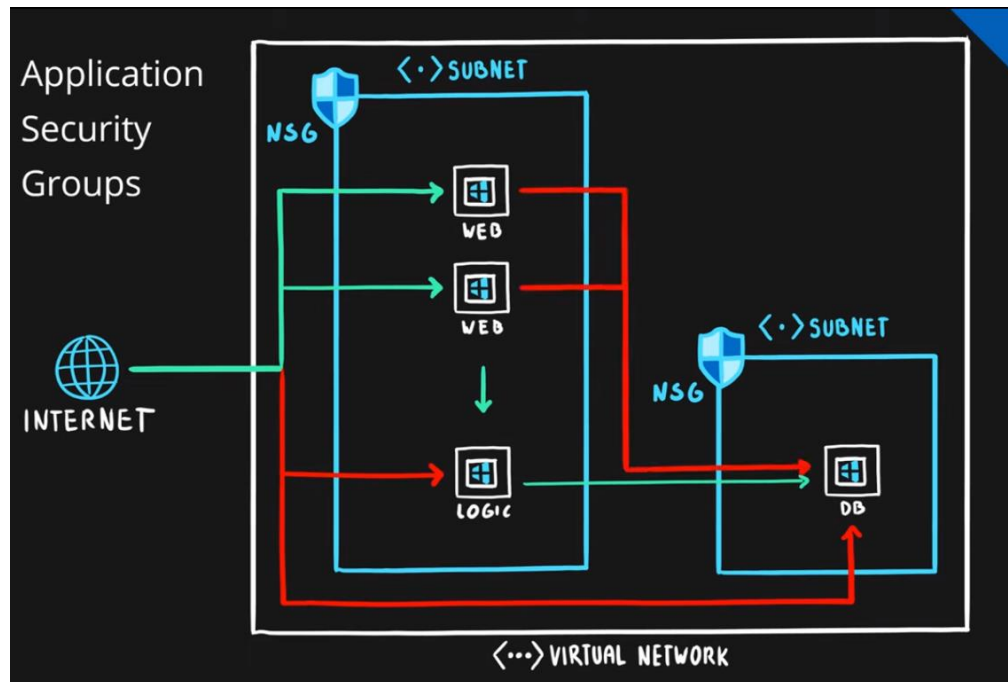
Additional Information

Network Security Groups

Key Characteristics

- Designed to filter traffic to (inbound) and from (outbound) Azure resources located in Azure Virtual Network
- Filtering controlled by rules
- Ability to have multiple inbound and outbound rules
- Rules are created by specifying
 - Source/Destination (IP addresses, service tags, application security groups)
 - Protocol (TCP, UDP, any)
 - Port (or Port Ranges, ex. 3389 – RDP, 22 – SSH, 80 HTTP, 443 HTTPS)
 - Direction (inbound or outbound)

Green – allow red – do not allow



Setup azure CLI

<https://docs.microsoft.com/en-us/cli/azure/install-azure-cli-windows?view=azure-cli-latest&tabs=azure-powershell>

<https://aka.ms/installazurecliwindows>

or

run in powershell

```
Invoke-WebRequest -Uri https://aka.ms/installazurecliwindows -OutFile .\AzureCLI.msi; Start-Process  
msiexec.exe -Wait -ArgumentList '/I AzureCLI.msi /quiet'; rm .\AzureCLI.msi
```

After Installation , Verify version in power shell

```

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Smt.Narayanamma> az --version
azure-cli                2.24.2
azure-cli-core            2.24.2
azure-cli-telemetry       1.0.6

Python location 'C:\Program Files (x86)\Microsoft SDKs\Azure\CLI2\python.exe'
Extensions directory 'C:\Users\Smt.Narayanamma\azure\cliextensions'

Python (Windows) 3.8.9 (tags/v3.8.9:a743f81, Apr  6 2021, 13:22:56) [MSC v.1928 32 bit (Intel)]
Legal docs and information: aka.ms/AzureCLILegal

Your CLI is up-to-date.

Please let us know how we are doing: https://aka.ms/azureclihats
and let us know if you're interested in trying out our newest features: https://aka.ms/CLIUXstudy
PS C:\Users\Smt.Narayanamma>

```

And in vs code

```

PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> az version
{
  "azure-cli": "2.24.2",
  "azure-cli-core": "2.24.2",
  "azure-cli-telemetry": "1.0.6",
  "extensions": {}
}

```

List and clear contexts

```

PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> Get-AzContext -ListAvailable

```

Name	Account	SubscriptionName	Environment	TenantId
Production 1 (f700a502-f4c5-42f4-8f1d...	student_10f0devikp...	Production 1	AzureCloud	9b7cbd77-6d6b-487...
Production 1 (f700a502-f4c5-42f4-8f1d...	student_7pmnzh6ekp...	Production 1	AzureCloud	9b7cbd77-6d6b-487...

```

PS D:\study 2021\Great Learning Azure\Assignment\Week1ARM> Clear-AzContext

Confirm
Remove all accounts and subscriptions in all sessions for the current user?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): Y

```

References :

- <https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/deploy-powershell>
- <https://docs.microsoft.com/en-us/azure/virtual-machines/windows/ps-template>
- <https://docs.microsoft.com/en-us/azure/templates/microsoft.network/virtualnetworks?tabs=json>
- <https://docs.microsoft.com/en-us/azure/templates/microsoft.network/networksecuritygroups?tabs=json>