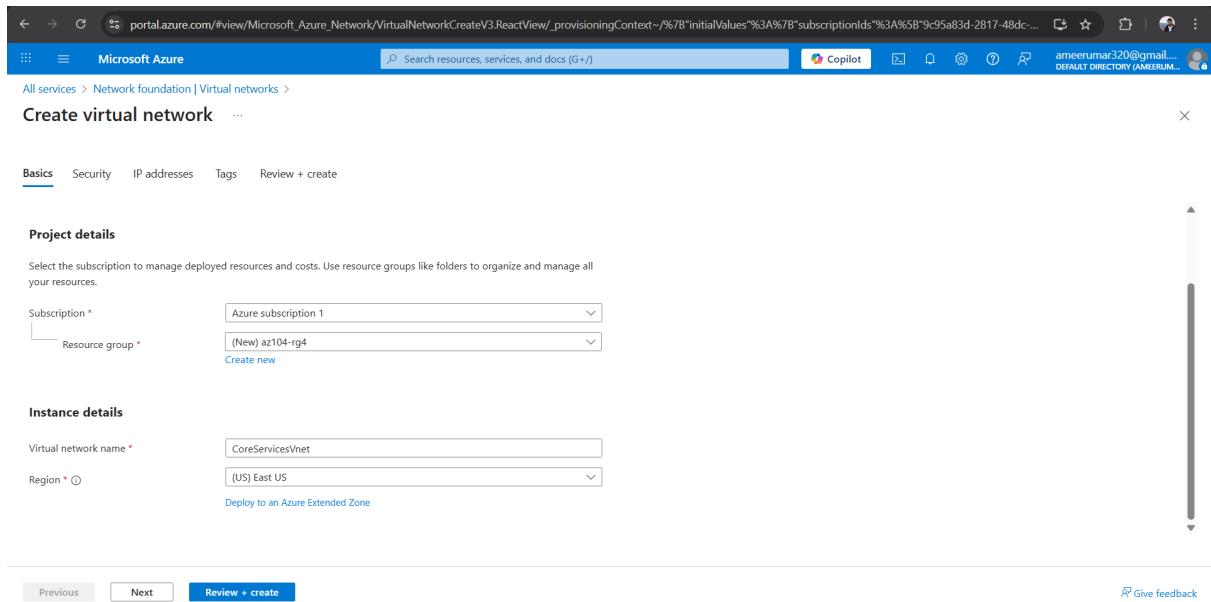


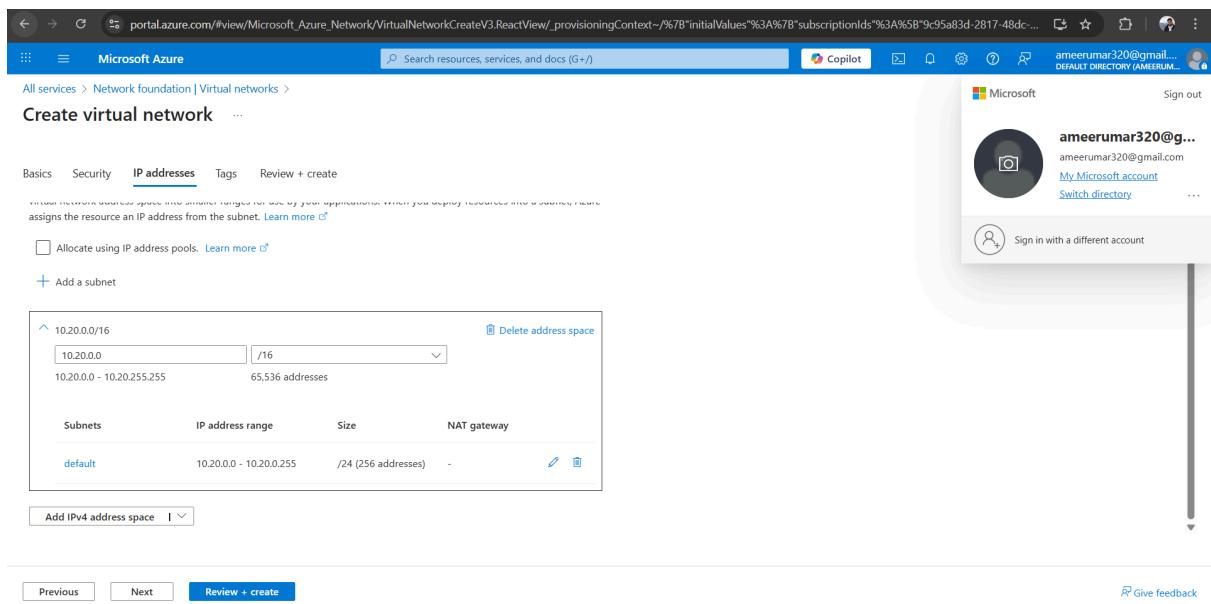
Assignment: 02
Lab: 04
Name: Ameer Umar Khan
ID: 2280137
Section: 7B

Creating virtual network - basics



The screenshot shows the 'Create virtual network' wizard on the 'Basics' step. It includes fields for 'Subscription' (Azure subscription 1), 'Resource group' ((New) az104-rg4), 'Virtual network name' (CoreServicesVnet), and 'Region' ((US) East US). Buttons at the bottom include 'Previous', 'Next', and 'Review + create'.

IP addresses



The screenshot shows the 'Create virtual network' wizard on the 'IP addresses' step. It displays an IP address space configuration for 10.20.0.0/16, which covers the range 10.20.0.0 - 10.20.255.255 and provides 65,536 addresses. A table lists a single subnet named 'default' with the range 10.20.0.0 - 10.20.0.255 and size /24 (256 addresses). Buttons at the bottom include 'Previous', 'Next', and 'Review + create'.

Creating subnet

The screenshot shows the Azure portal interface for creating a virtual network. On the left, there's a sidebar with 'All services > Network foundation > Virtual networks'. The main area is titled 'Create virtual network' and has tabs for 'Basics', 'Security', 'IP addresses' (which is selected), 'Tags', and 'Review + create'. Under 'IP addresses', it says 'Assigns the resource an IP address from the subnet. Learn more'. There's a checkbox for 'Allocate using IP address pools' and a link to 'Learn more'. Below this is a table for 'Subnets' with one entry: 'default' (IP address range 10.20.0.0 - 10.20.0.255, size /24, NAT gateway '-'). A button '+ Add a subnet' is visible. To the right, a modal window titled 'Add a subnet' is open. It asks 'Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more'. It has fields for 'Subnet purpose' (set to 'Default'), 'Name' (set to 'SharedServicesSubnet'), and 'IPv4' settings. The 'IPv4 address range' is set to '10.20.0.0/16' (10.20.0.0 - 10.20.255.255). The 'Starting address' is '10.20.20.0', 'Size' is '/24 (256 addresses)', and 'Subnet address range' is '10.20.20.0 - 10.20.20.255'. There's also an 'IPv6' section which is currently empty. At the bottom of the modal are 'Add', 'Cancel', and 'Give feedback' buttons.

Creating 2nd subnet

This screenshot shows the same Azure portal interface as the previous one, but after adding the first subnet ('SharedServicesSubnet'). The 'Subnets' table now includes both 'SharedServicesSubnet' and 'default'. The configuration panel for adding a second subnet ('DatabaseSubnet') is still present on the right, with identical settings to the first one: IPv4 address range 10.20.0.0/16, starting address 10.20.20.0, size /24, and subnet address range 10.20.20.0 - 10.20.20.255. The rest of the interface is identical to the first screenshot.

Automation template on the new resource

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information for 'ameerumar320@gmail.com'. Below the navigation bar, the page title is 'CoreServicesVnet | Export template'. On the left, a sidebar menu lists various resource group management options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Settings, Monitoring, Automation, CLI / PS, Tasks, and Export template. The 'Export template' option is currently selected. The main content area displays the ARM Template code:

```
1 {
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "parameters": {
    "virtualNetworks_CoreServicesVnet_name": {
      "defaultValue": "coreservicesVnet",
      "type": "String"
    }
  },
  "variables": {},
  "resources": [
    {
      "name": "coreservicesVnet",
      "type": "Microsoft.Network/virtualNetworks",
      "location": "West US",
      "properties": {
        "addressSpace": {
          "addressPrefixes": [
            "10.0.0.0/16"
          ]
        },
        "subnets": [
          {
            "name": "DatabaseSubnet",
            "properties": {
              "addressPrefix": "10.0.1.0/24"
            }
          }
        ]
      }
    }
  ]
}
```

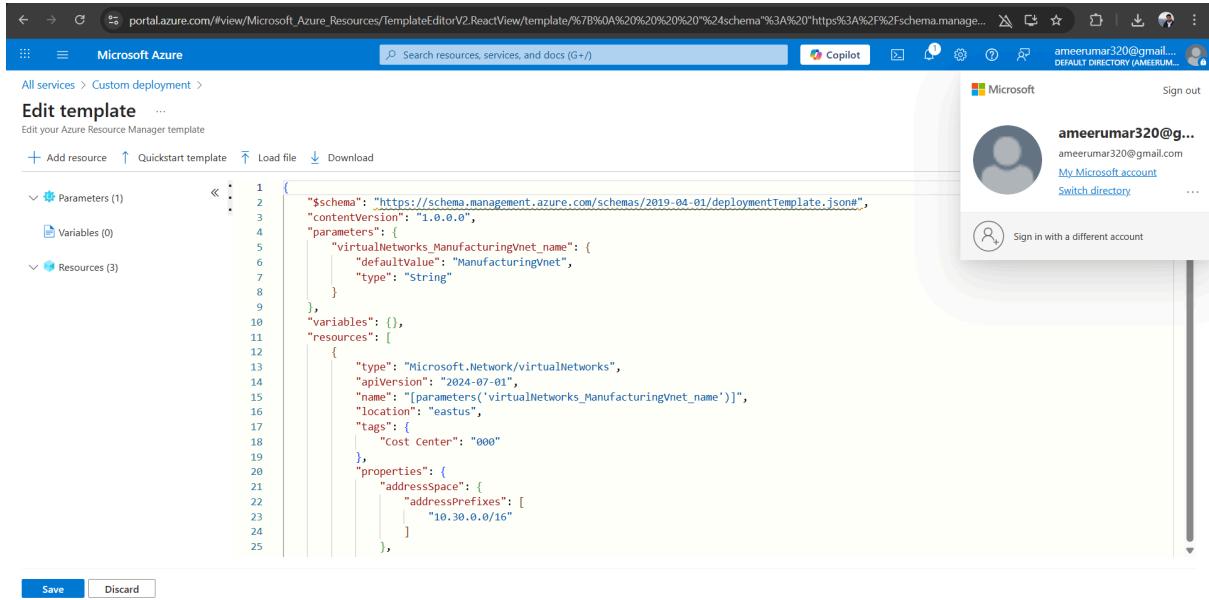
Add or remove favorites by pressing **Ctrl+Shift+F**

Downloaded zip

The screenshot shows a Windows File Explorer window with the path 'This PC > Local Disk (C) > Users > ameer > Downloads > ExportedTemplate-az104-rg2.zip'. The file 'ExportedTemplate-az104-rg2.zip' is expanded, revealing its contents: 'parameters.json' and 'template.json'. Both files are listed as 'JSON Source File' with a size of 1 KB and a date modified of 1/11/2026 12:41 AM.

Name	Type	Compressed size	Password p...	Size	Ratio	Date modified
parameters.json	JSON Source File	1 KB	No	1 KB	34%	1/11/2026 12:41 AM
template.json	JSON Source File	1 KB	No	4 KB	84%	1/11/2026 12:41 AM

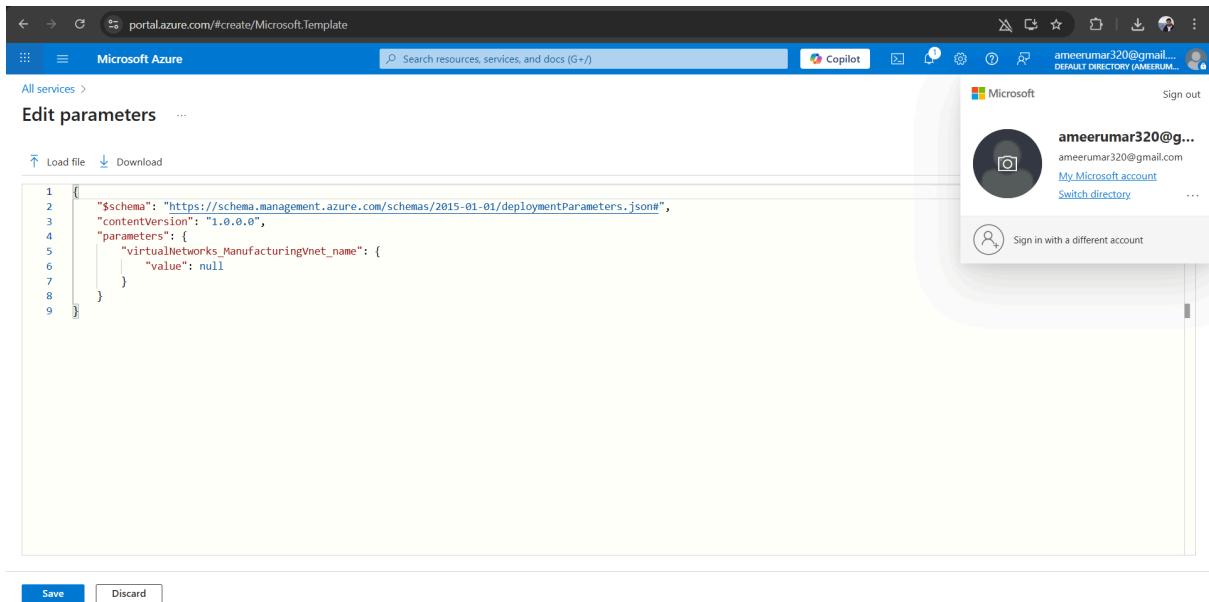
Custom template loading



```
1 {
2     "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
3     "contentVersion": "1.0.0.0",
4     "parameters": {
5         "virtualNetworks_ManufacturingVnet_name": {
6             "defaultValue": "ManufacturingVnet",
7             "type": "string"
8         }
9     },
10    "variables": {},
11    "resources": [
12        {
13            "type": "Microsoft.Network/virtualNetworks",
14            "apiVersion": "2024-07-01",
15            "name": "[parameters('virtualNetworks_ManufacturingVnet_name')]",
16            "location": "eastus",
17            "tags": {
18                "Cost Center": "000"
19            },
20            "properties": {
21                "addressSpace": {
22                    "addressPrefixes": [
23                        "10.30.0.0/16"
24                    ]
25                },
26            }
27        }
28    ],
29    "outputs": {}
30 }
```

Save Discard

Loading parameters



```
1 {
2     "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentParameters.json#",
3     "contentVersion": "1.0.0.0",
4     "parameters": {
5         "virtualNetworks_ManufacturingVnet_name": {
6             "value": null
7         }
8     }
9 }
```

Save Discard

Deployed

The screenshot shows the Microsoft Azure portal interface. At the top, the URL is `portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2fsubscriptions%2F9c95a83d-2817-48dc-9b2e-0c496f8b0fb%2ResourceGroups%2Fa104-rg4`. The page title is "Microsoft.Template-20260111005837 | Overview". On the left, there's a navigation bar with "All services >" and a search bar. The main content area shows a green checkmark icon and the message "Your deployment is complete". Below this, it lists deployment details: Deployment name: Microsoft.Template-20260111005837, Subscription: Azure subscription 1, Resource group: az104-rg4. It also shows the start time as 11/01/2026, 00:58:47 and Correlation ID: 0821f93c-acf7-4756-8d07-eca0e0b39f6. There are sections for "Deployment details" and "Next steps", with a "Go to resource group" button. On the right, there are promotional cards for "Deployment succeeded", "Cost management", "Microsoft Defender for Cloud", "Free Microsoft tutorials", and "Work with an expert". At the bottom, there's a note about adding favorites.

Creating application security group

All services > Network foundation | Application security groups >

Create an application security group

Validation passed

Basics Tags Review + create

Basics

Subscription: Azure subscription 1
Resource group: az104-rg4
Location: East US
Name: asg-web

Sign in with a different account

Creating network security group

Validation passed

Basics

Subscription	Azure subscription 1
Resource group	az104-rg4
Region	East US
name	myNSGSecure

Tags

None

Create < Previous Next > Download a template for automation

Associate NSG with subnet

myNSGSecure | Subnets

Associate subnet

Virtual network: CoreServicesVnet (az104-rg2)

Subnet: SharedServicesSubnet

OK

Adding inbound rule

 **Add inbound security rule** ×

myNSGSecure

Source (1)
Application security group ▼

Source application security groups
 ✖
No application security groups found ▼

Source port ranges * (1)

Destination (1)
Any ▼

Service (1)
Custom ▼

Destination port ranges * (1)
 ✓

Protocol
 Any
 TCP
 UDP
 ICMPv4
 ICMPv6

Originator IP address Edit

Add Cancel  Give feedback

 **Add inbound security rule** ×

myNSGSecure

Destination port ranges (1)
 ✓

Protocol
 Any
 TCP
 UDP
 ICMPv4
 ICMPv6

Action
 Allow
 Deny

Priority * (1)

Name *
 ✓

Description

Add Cancel  Give feedback

Adding outbound rule

 Add outbound security rule ×

myNSGSecure

Source ⓘ ▼
Any

Source port ranges * ⓘ ▼
*

Destination ⓘ ▼
Service Tag

Destination service tag ⓘ ▼
Internet

Service ⓘ ▼
Custom

Destination port ranges * ⓘ ▼
8080

Protocol
 Any
 TCP
 UDP
 ICMPv4
 ICMPv6

Add Cancel Give feedback

 Add outbound security rule ×

myNSGSecure

Destination port ranges ▼
8080

Protocol
 Any
 TCP
 UDP
 ICMPv4
 ICMPv6

Action
 Allow
 Deny

Priority * ⓘ ▼
4096

Name * ▼
DenyInternetOutboundD

Description ▼

Add Cancel Give feedback

Creating a DNS zone

The screenshot shows the 'Create a DNS Zone' wizard in the Microsoft Azure portal. The top navigation bar includes 'Microsoft Azure', 'Search resources, services, and docs (G+)', 'Copilot', and user information for 'ameerumar320@gmail.com'. The main content area has a green header bar with 'Validation passed'. Below it, tabs for 'Basics', 'DNS Zone Editor', 'Tags', and 'Review + Create' are visible, with 'Review + Create' being the active tab. A 'View automation template' link is present. The 'Basics' section displays subscription details: 'Subscription: Azure subscription 1', 'Resource group: az104-rg4', 'Resource group location: East US', and 'Name: contoso.pk'. The 'DNS Zone Record Set(s)' section shows 'Number of record sets: 0 record set(s)'. At the bottom, there are 'Create', '< Previous', 'Next >', and 'Give feedback' buttons.

Copying a name server

The screenshot shows the 'contoso.pk' DNS zone overview page in the Microsoft Azure portal. The top navigation bar includes 'Microsoft Azure', 'Search resources, services, and docs (G+)', 'Copilot', and user information for 'ameerumar320@gmail.com'. The left sidebar shows 'contoso.pk' under 'DNS zone' with options like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Resource visualizer', 'Settings', 'DNS Management', 'Monitoring', 'Automation', and 'Help'. The main content area has a toolbar with '+ Child zone', 'Record sets', 'DNSSEC', 'Import', 'Export', 'Move', 'Delete', 'Refresh', and 'Give feedback'. The 'Essentials' section shows resource group: 'az104-rg4', location: 'Global', subscription: 'Azure subscription 1', subscription ID: '9c95a83d-2817-48dc-9b2e-0c496f8b0cfb', recordsets: '2', and tags: 'Add tags'. It also lists four name servers: 'ns1-02.azure-dns.com', 'ns2-02.azure-dns.net', 'ns3-02.azure-dns.org', and 'ns4-02.azure-dns.info'. Below this, a 'Get Started' section provides links to 'Add DNS record sets', 'Import record sets from file', 'Access control', and 'Azure DNS Documentation'. A note at the bottom states: 'Azure DNS is a hosting service for DNS domains that provides name resolution by using Microsoft Azure infrastructure. By hosting your domains in Azure, you can manage your DNS records by using the same credentials, APIs, tools, and billing as your other Azure services.'

Adding a record set

Add record set

contoso.pk

Name

www

.contoso.pk

Type

A – IPv4 Address records

Alias record set ⓘ

No

TTL *

1

TTL unit

Hours

IP address

10.1.1.4

0.0.0.0

Add Cancel Give feedback

Local terminal

```
Command Prompt

Microsoft Windows [Version 10.0.26100.7462]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ameer>nslookup www.contoso.pk ns1-02.azure-dns.com.
Server: Unknown
Address: 13.107.236.2

Name: www.contoso.pk
Address: 10.1.1.4

C:\Users\ameer>
```

Creating private dns zone

The screenshot shows the 'Create Private DNS Zone' wizard in the Azure portal. The top navigation bar includes 'Microsoft Azure', 'Search resources, services, and docs (G+)', 'Copilot', and user information for 'ameerumar320@gmail.com'. The main content area shows the 'Review + Create' step with the following details:

Basics

Subscription	Azure subscription 1
Resource group	az104-rg4
Resource group location	East US
Name	private.contoso.com

DNS Zone Record Set(s)

Number of record sets	0 record set(s)
-----------------------	-----------------

Virtual network link(s)

Number of Virtual Network Links	0 virtual network link(s)
---------------------------------	---------------------------

At the bottom, there are buttons for 'Create', '< Previous', 'Next >', and 'Give feedback'.

Adding virtual network link

The screenshot shows the 'Add Virtual Network Link' wizard in the Azure portal. The top navigation bar includes 'Microsoft Azure', 'Search resources, services, and docs (G+)', 'Copilot', and user information for 'ameerumar320@gmail.com'. The main content area shows the 'Add Virtual Network Link' step with the following details:

Add Virtual Network Link

Link name *
manufacturing-link

Virtual network details

Only virtual networks with Resource Manager deployment model are supported for linking with Private DNS zones. Virtual networks with Classic deployment model are not supported.

I know the resource ID of virtual network

Subscription *
Azure subscription 1

Virtual Network *
ManufacturingVnet (az104-rg4)

Configuration

Enable auto registration

Enable fallback to internet

At the bottom, there are buttons for 'Create', 'Cancel', and 'Give feedback'.

Adding a record set

Copilot       ameerumar320@gmail.com  
DEFAULT DIRECTORY (AMEERUM...)

Add record set

private.contoso.com

Name  .private.contoso.com

Type 

TTL * 

TTL unit 

IP address



 Add  Cancel 