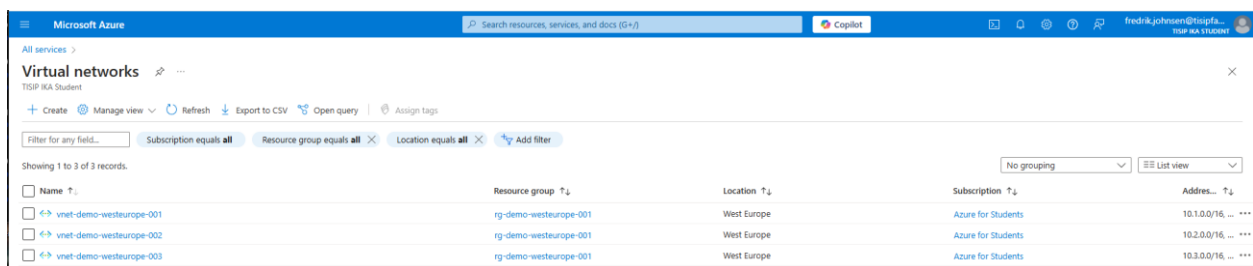


Øving 5

For Fredrik Johnsen

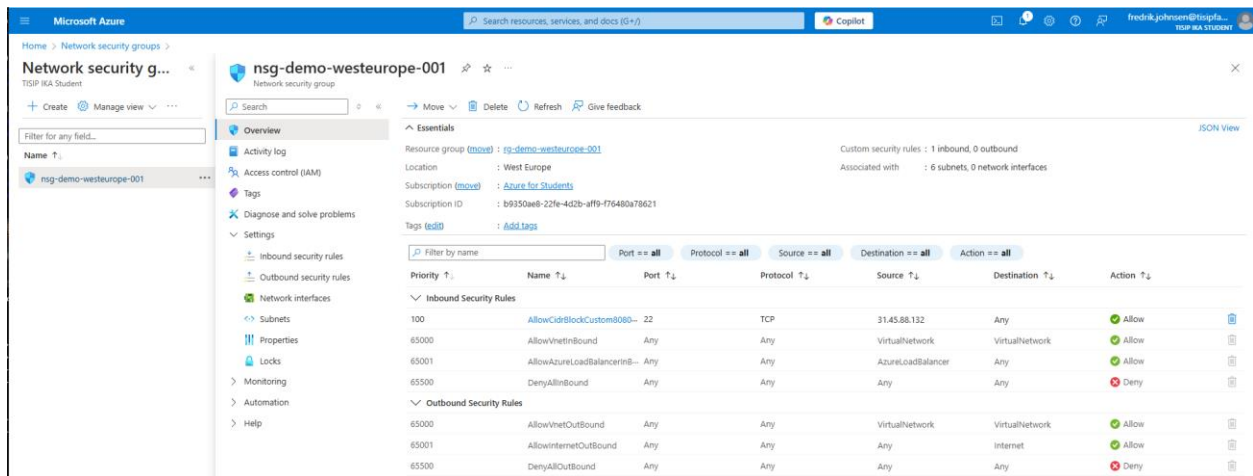
Jeg kjørte nettverksskriptet fra GitHub i kommandoskallet og opprettet nettverket.



The screenshot shows the 'Virtual networks' page in the Azure portal. It displays a table with 3 records. The columns are Name, Resource group, Location, Subscription, and Address space. The records are for vnet-demo-west-europe-001, vnet-demo-west-europe-002, and vnet-demo-west-europe-003, all located in West Europe and associated with the Azure for Students subscription.

Name	Resource group	Location	Subscription	Address space
vnet-demo-west-europe-001	rg-demo-west-europe-001	West Europe	Azure for Students	10.1.0.0/16
vnet-demo-west-europe-002	rg-demo-west-europe-001	West Europe	Azure for Students	10.2.0.0/16
vnet-demo-west-europe-003	rg-demo-west-europe-001	West Europe	Azure for Students	10.3.0.0/16

Deretter kjørte jeg et tilsvarende skript for å opprette en Network Security Group (NSG). Jeg glemte å endre IP-adressen fra x.x.x.x, så jeg opprettet regelen manuelt som repetisjon fra forrige øving.



The screenshot shows the 'ns-g-demo-west-europe-001' Network Security Group in the Azure portal. It displays the 'Essentials' tab with a table of security rules. The rules are categorized into Inbound Security Rules and Outbound Security Rules. The Inbound rules include 'AllowCidrBlockCustom0080', 'AllowVnetInbound', 'AllowAzureLoadBalancerInbound', and 'DenyAllInbound'. The Outbound rules include 'AllowVnetOutbound', 'AllowInternetOutbound', and 'DenyAllOutbound'.

Priority	Name	Port	Protocol	Source	Destination	Action
100	AllowCidrBlockCustom0080	22	TCP	31.45.88.132	Any	Allow
65000	AllowVnetInbound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInbound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInbound	Any	Any	Any	Any	Deny
65000	AllowVnetOutbound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutbound	Any	Any	Any	Internet	Allow
65500	DenyAllOutbound	Any	Any	Any	Any	Deny

Jeg kjørte også et skript som opprettet tre virtuelle maskiner.

Microsoft Azure

Search resources, services, and docs (G+/I)

Copilot

Fredrik.johnsen@tspfa...
TSPF IKA STUDENT

All services >

Virtual machines

TSPF IKA Student

+ Create Switch to classic Reservations Manage view Refresh Export to CSV Open query Assign tags Start Restart Stop Delete Services Maintenance

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

Showing 1 to 3 of 3 records.

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disks
vm-demo-westeuropa-001	Azure for Students	rg-demo-westeuropa-001	West Europe	Running	Linux	Standard_B1ms	52.166.101.194	1
vm-demo-westeuropa-002	Azure for Students	rg-demo-westeuropa-001	West Europe	Running	Linux	Standard_B1ms	13.81.38.94	1
vm-demo-westeuropa-003	Azure for Students	rg-demo-westeuropa-001	West Europe	Running	Linux	Standard_B1ms	40.68.229.231	1

Jeg satte opp peering fra VNet 1 til VNet 2. Deretter logget jeg inn på VM1 og pinget VM2.

```
melling@vm-demo-westeuropa-001: ~
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

melling@vm-demo-westeuropa-001:~$ ping 10.2.1.4
PING 10.2.1.4 (10.2.1.4) 56(84) bytes of data.
64 bytes from 10.2.1.4: icmp_seq=1 ttl=64 time=2.53 ms
64 bytes from 10.2.1.4: icmp_seq=2 ttl=64 time=1.46 ms
64 bytes from 10.2.1.4: icmp_seq=3 ttl=64 time=1.48 ms
64 bytes from 10.2.1.4: icmp_seq=4 ttl=64 time=1.67 ms
64 bytes from 10.2.1.4: icmp_seq=5 ttl=64 time=1.46 ms
64 bytes from 10.2.1.4: icmp_seq=6 ttl=64 time=1.54 ms
64 bytes from 10.2.1.4: icmp_seq=7 ttl=64 time=1.50 ms
64 bytes from 10.2.1.4: icmp_seq=8 ttl=64 time=1.77 ms
```

Jeg prøvde også å pinge VM3, men fikk ikke svar.

```
melling@vm-demo-westeuropa-001: ~  
64 bytes from 10.2.1.4: icmp_seq=1 ttl=64 time=2.53 ms  
64 bytes from 10.2.1.4: icmp_seq=2 ttl=64 time=1.46 ms  
64 bytes from 10.2.1.4: icmp_seq=3 ttl=64 time=1.48 ms  
64 bytes from 10.2.1.4: icmp_seq=4 ttl=64 time=1.67 ms  
64 bytes from 10.2.1.4: icmp_seq=5 ttl=64 time=1.46 ms  
64 bytes from 10.2.1.4: icmp_seq=6 ttl=64 time=1.54 ms  
64 bytes from 10.2.1.4: icmp_seq=7 ttl=64 time=1.50 ms  
64 bytes from 10.2.1.4: icmp_seq=8 ttl=64 time=1.77 ms  
64 bytes from 10.2.1.4: icmp_seq=9 ttl=64 time=1.06 ms  
64 bytes from 10.2.1.4: icmp_seq=10 ttl=64 time=1.13 ms  
64 bytes from 10.2.1.4: icmp_seq=11 ttl=64 time=1.31 ms  
64 bytes from 10.2.1.4: icmp_seq=12 ttl=64 time=1.44 ms  
64 bytes from 10.2.1.4: icmp_seq=13 ttl=64 time=1.21 ms  
64 bytes from 10.2.1.4: icmp_seq=14 ttl=64 time=1.05 ms  
64 bytes from 10.2.1.4: icmp_seq=15 ttl=64 time=1.61 ms  
64 bytes from 10.2.1.4: icmp_seq=16 ttl=64 time=1.45 ms  
64 bytes from 10.2.1.4: icmp_seq=17 ttl=64 time=1.02 ms  
^C  
--- 10.2.1.4 ping statistics ---  
17 packets transmitted, 17 received, 0% packet loss, time 16025ms  
rtt min/avg/max/mdev = 1.019/1.452/2.534/0.346 ms  
melling@vm-demo-westeuropa-001:~$ ping 10.3.1.4  
PING 10.3.1.4 (10.3.1.4) 56(84) bytes of data.  
[ ]
```

Jeg la derfor inn peering mellom VNet 2 og VNet 3, men fortsatt ingen ping. Jeg spurte min gode venn Copilot om dette:

Det høres ut som du beskriver en situasjon med transitive forbindelser i Azure Virtual Network Peering. I Azure tillater ikke standard peering-konfigurasjoner transitive forbindelser, noe som betyr at hvis VNet A er peered med VNet B, og VNet B er peered med VNet C, kan ikke VNet A automatisk kommunisere med VNet C¹².

For å få dette til å fungere, må du aktivere "Allow forwarded traffic" i peering-innstillingene for både VNet B til VNet A og VNet B til VNet C². Dette gjør at trafikk kan videresendes mellom de peered nettverkene.

Her er noen trinn du kan følge for å konfigurere dette:

1. **Gå til peering-innstillingene** for VNet B.
2. **Aktiver "Allow forwarded traffic"** for peering mellom VNet B og VNet A.
3. **Aktiver "Allow forwarded traffic"** for peering mellom VNet B og VNet C.

Hvis du har en VPN-gateway eller en annen form for nettverksgateway, må du også sørge for at den er konfigurert til å tillate trafikk mellom de relevante nettverkene³.

Name	Peering sync status	Peering state	Remote virtual network name	Virtual network gateway or route server
peer-vnet001-vnet002	Fully Synchronized	Connected	vnet-demo-west europe-001	Disabled
lg-vnet002-vnet003	Fully Synchronized	Connected	vnet-demo-west europe-003	Disabled

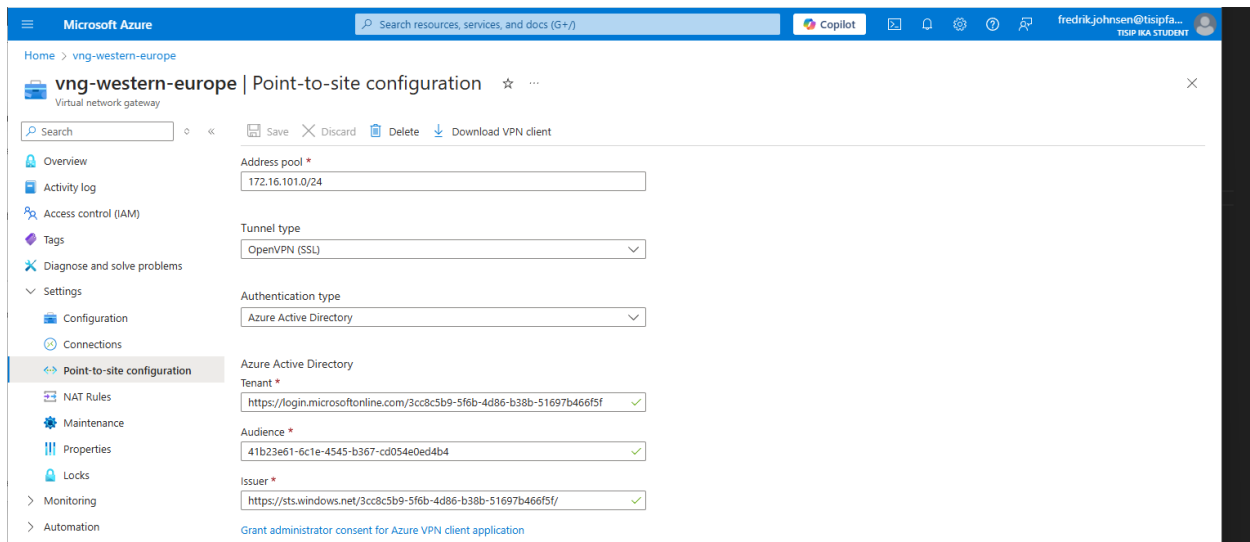
Jeg slettet IP-adressene for de tre VMene i Network Interface og fjernet dem i Public IP-tjenesten. Deretter opprettet jeg et nytt subnet av typen gateway i subnet 1.

Name	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disks
vm-demo-west europe-001	Azure for Students	rg-demo-west europe-001	West Europe	Running	Linux	Standard_B1ms	-	1
vm-demo-west europe-002	Azure for Students	RG-DEMO-WESTEUROPE-001	West Europe	Running	Linux	Standard_B1ms	-	1
vm-demo-west europe-003	Azure for Students	RG-DEMO-WESTEUROPE-001	West Europe	Running	Linux	Standard_B1ms	-	1

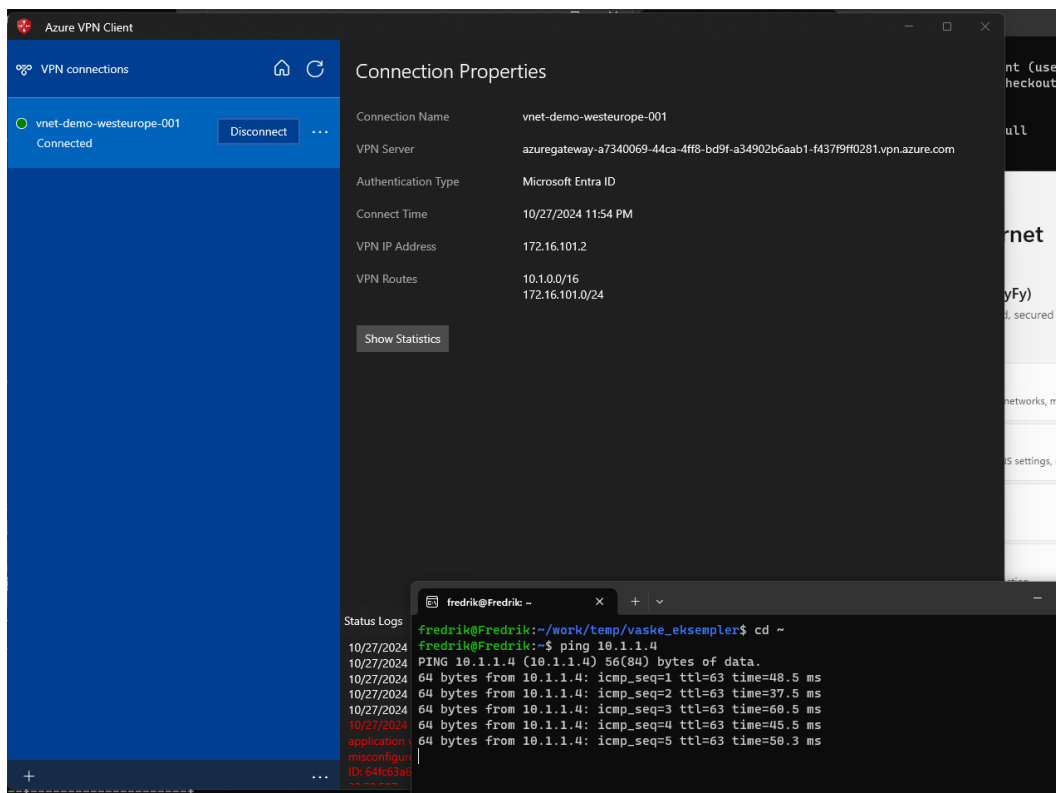
Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
snet-demo-west europe-101	10.1.1.0/24	-	250	-	ns-g-demo-west europe-001	-
snet-demo-west europe-102	10.1.2.0/24	-	251	-	ns-g-demo-west europe-001	-
GatewaySubnet	10.1.0.0/24	-	availability dependent on dy...	-	-	-

Jeg opprettet en Virtual Network Gateway i det nye subnettet og ventet en god stund.

Resource	Type	Status	Operation details
vnet-gw-western-europe	Virtual network gateway	Created	Operation details
pip-gw-demo	Public IP address	OK	Operation details



Til slutt lastet jeg ned VPN-klienten fra Microsoft Store og importerte VPN-spesifikasjonen. Jeg koblet meg opp via Microsoft-kontoen og fikk tilkobling til de virtuelle nettverkene, og kunne pinge en av VMene der.



Ellers...

... var øvingen rett fram. Det var moro å kople seg til nettverket med VPN, og kan sikkert være nyttig til senere.