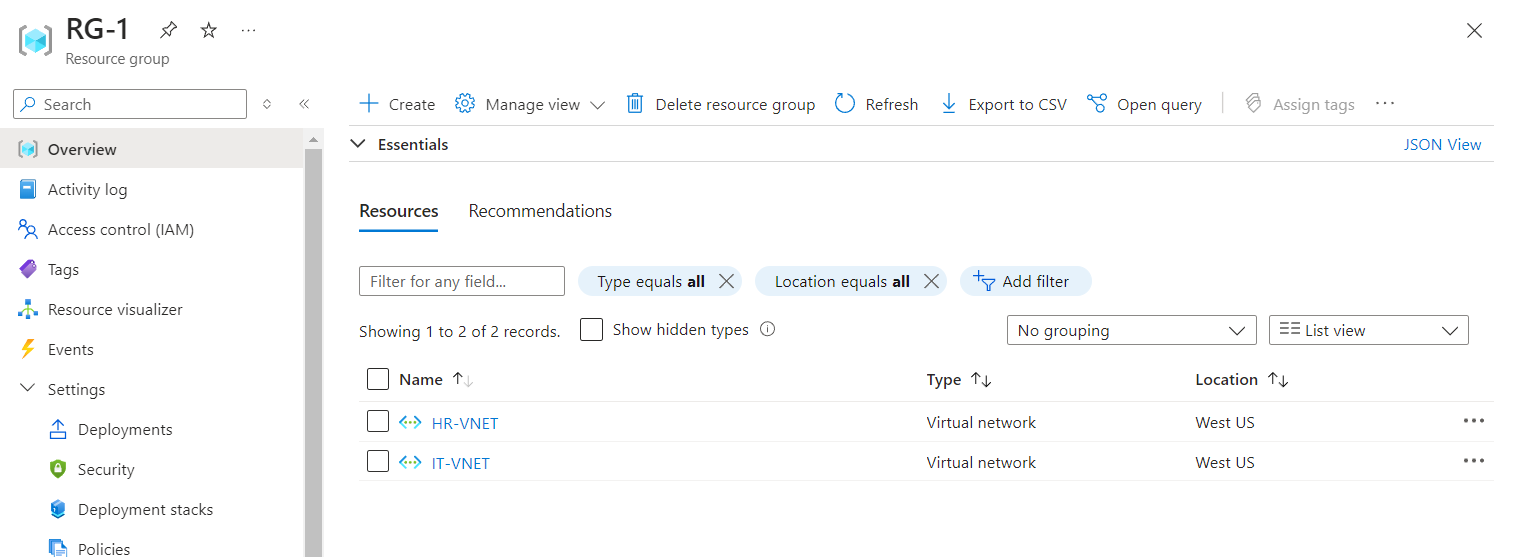
**Solution Overview**

* **Create virtual networks** for the IT and HR departments.
* **Deploy the resources** (VMs, DNS server, and web app) in their respective VNETs.
* **Set up VNET peering** to allow communication between the two VNETs.
* **Configure Azure Private DNS** for domain name resolution, allowing the DNS server to resolve the web app.
* Use Azure DNS to assign domain names to the DNS server
* **Test the communication** by pinging the web app from the DNS server.

1. **Create Virtual Networks for IT and HR Departments**

* Create two virtual networks, one for the **IT department** and one for the **HR department**. Each will be in its own subnet for segregation.
  + **IT-VNET** (Address Space: 10.0.0.0/16)
    - Subnet 1 (for DNS and Linux VM): 10.0.1.0/24
  + **HR-VNET** (Address Space: 10.1.0.0/16)
    - Subnet 1 (for Web App and Linux VM): 10.1.1.0/24



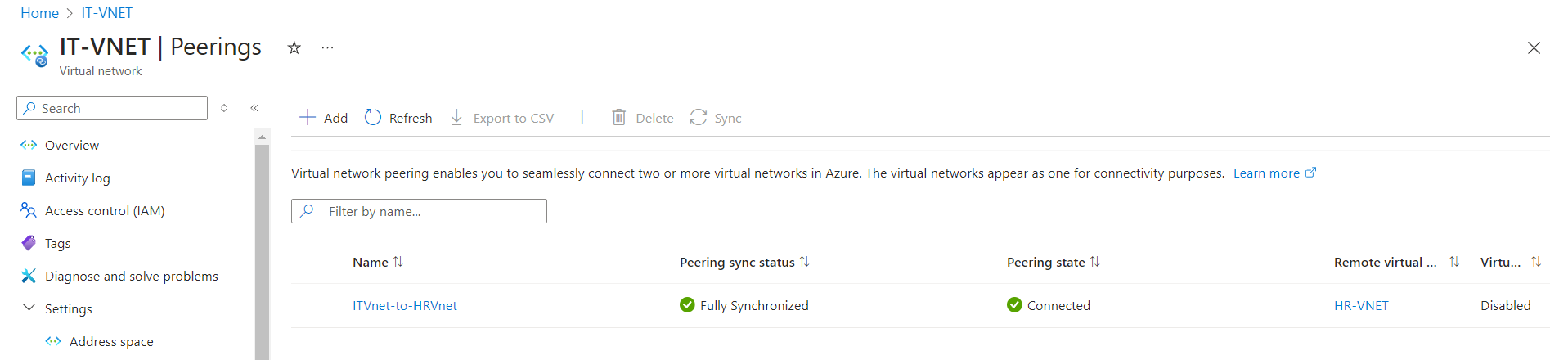
1. **Deploy Resources in the Virtual Networks**

* In the **IT-VNET**, deploy:
  + A **Linux-VM** for administrative purposes.
  + A **DNS Server** (could be either a VM configured with DNS services or use Azure Private DNS).
* In the **HR-VNET**, deploy:
  + A **Linux-VM-HR** for administrative purposes.
  + A **Web App** using Azure App Service.

1. **Establish VNET Peering for Private Communication**

Now that the virtual networks are set up and the resources are deployed, you need to enable communication between the **IT-VNET** and **HR-VNET** using **VNET peering**.

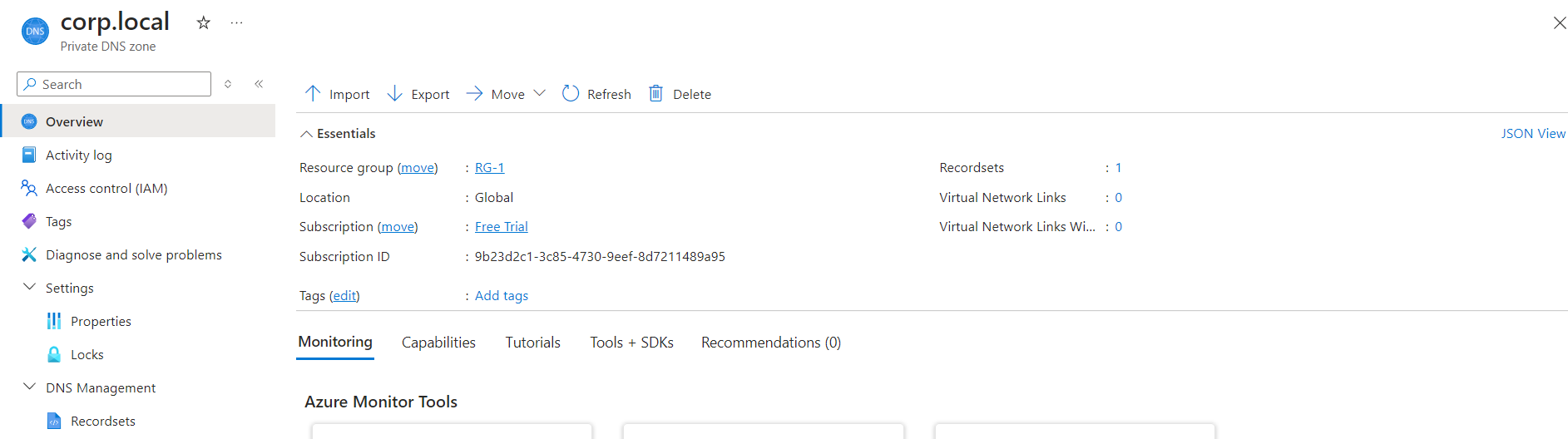
1. **Peer IT-VNET and HR-VNET**:
   * Go to **IT-VNET** > **Settings** > **Peerings** > **Add**.
   * Set the peer to **HR-VNET** and enable the following settings:
     + **Allow virtual network access** (Enable this option for both VNETs to allow bidirectional traffic).
     + **Allow forwarded traffic**: Enable.
   * Confirm to create the peering.



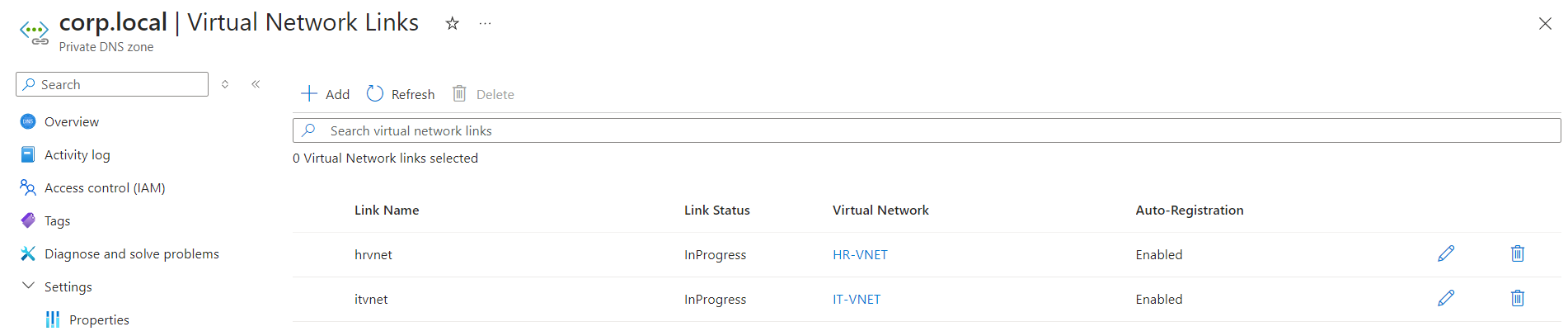
1. **Configure Azure DNS for Name Resolution**

To allow internal name resolution and map a domain name to the web app, you can use **Azure Private DNS**.

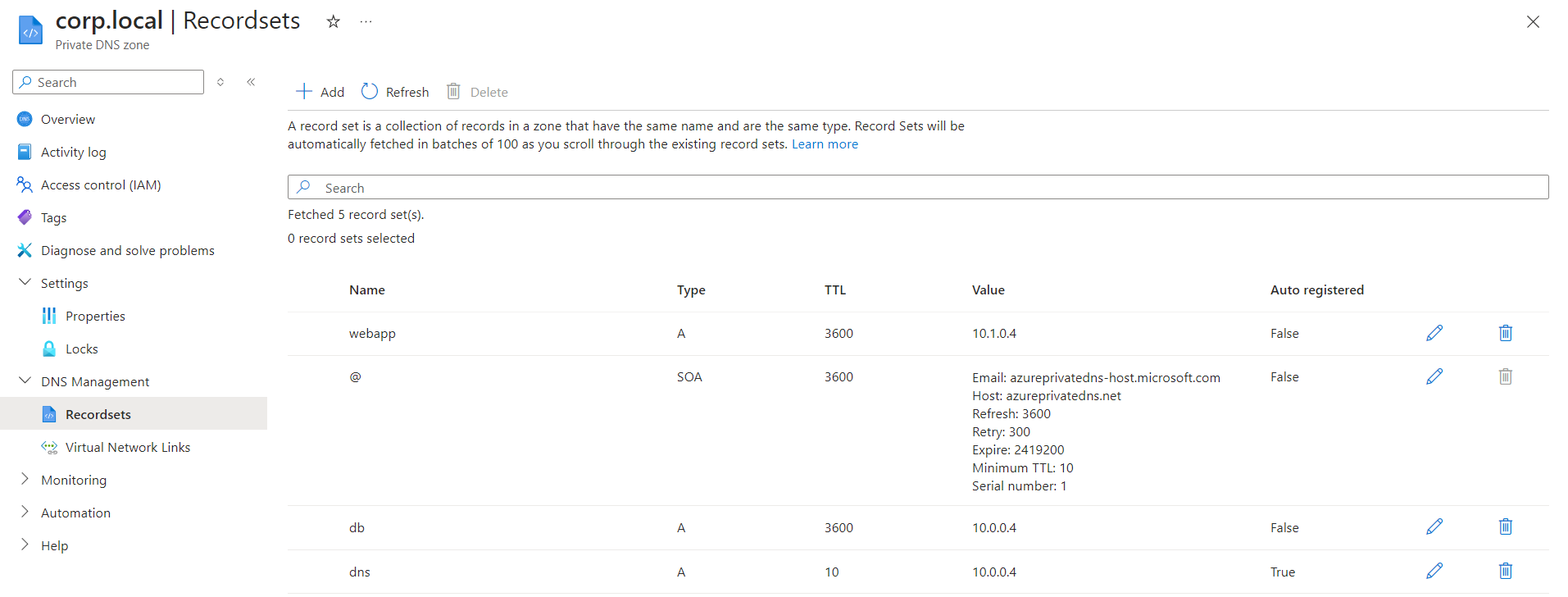
1. **Create a Private DNS Zone**:
   * Go to **Azure Portal** > **Create a resource** > **Private DNS Zone**.
   * Name it something like corp.local.
   * Create the DNS zone.



1. **Link Virtual Networks to the DNS Zone**:
   * Open the **Private DNS Zone** (corp.local).
   * Under **Settings**, go to **Virtual network links**.
   * Add both **IT-VNET** and **HR-VNET** to the DNS zone and enable auto-registration so that any new VMs created in the VNETs automatically register their IP addresses.



1. **Create DNS Records**:
   * Inside the **Private DNS Zone** (corp.local), create DNS records for the resources:
     + **DNS Record for Web App**: Create an A record like webapp.corp.local and point it to the private IP of the web app in HR-VNET.



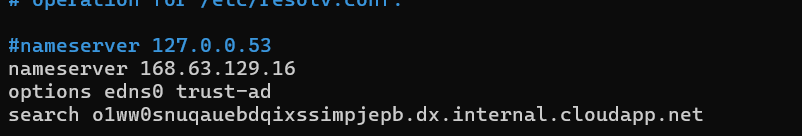
1. **Set up the DNS Server to use the Azure Private DNS Zone.**

Steps:

1. SSH into the DNS server in IT-VNET.
2. Modify the DNS server configuration:

Open /etc/resolv.conf

Add Azure's DNS server IP

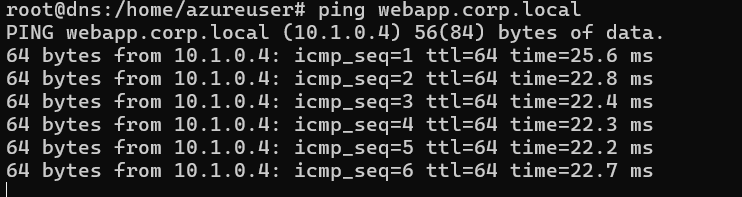
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1. **Test the Communication**

Now that both VNETs are peered and DNS is set up, you can test the private communication between the DNS server and the web app.

1. **SSH into the DNS Server VM** in IT-VNET.
2. Run a **ping** or **nslookup** command to test DNS resolution and connectivity:

ping webapp.corp.local



nslookup webapp.corp.local

