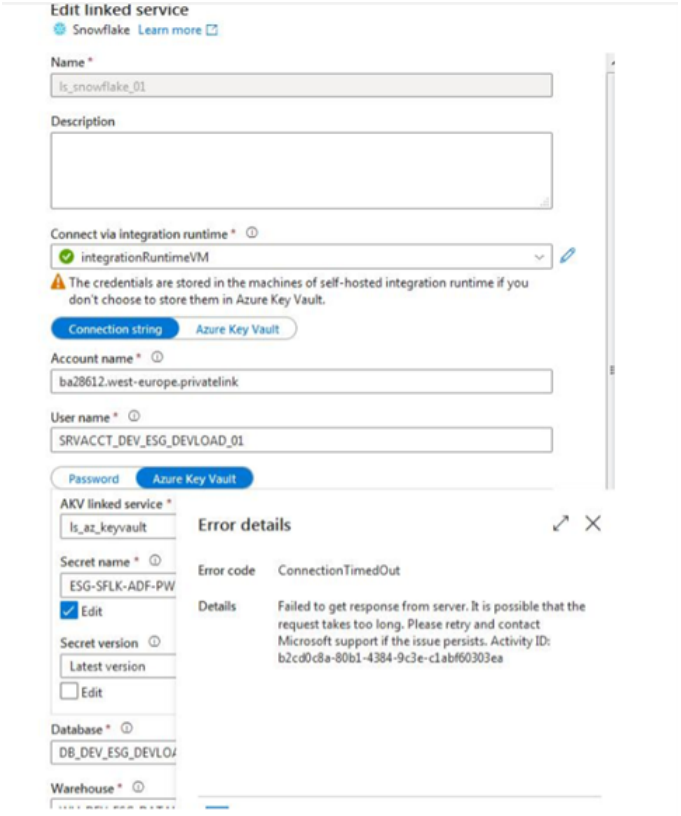
FQDN by DNS

Last updated by | Veena Pachauri | Mar 8, 2023 at 11:59 PM PST

Contents

Issue occurrence scenarios:

1. Any ADF connector issue that needs a DNS resolution.
2. Intermittent Linked service connection (ex: can't connect to Snowflake private link from ADF linked service).
3. SHIR hosting more than 1 node, slave node trying to communicate with the master node it also uses FQDN (Fully qualified Domain name) issue.

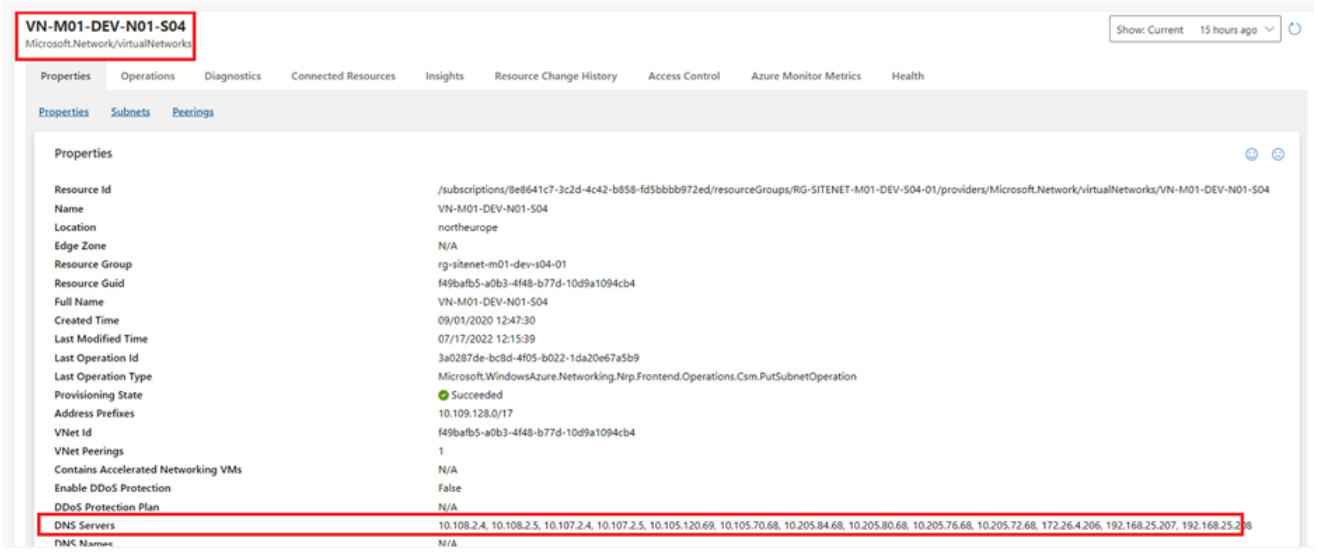


Troubleshooting steps:

Check with cx where the Self Hosted Integration Runtime (SHIR) VM landing, is it landing on the Azure or onprem and get the IP address or name of the VM.

VM landing on Azure:

1. If the VM landing on Azure, get the details like VM Name and navigate to VM, check if there are any customized DNS servers configured on the VM by cx.
2. How to reach to SHIR VM: Team need to open the customer subscription where the VM is and go to Microsoft/compute - Virtual Machines - and press on the link that points to the Virtual Network where the resource lands.
3. How to check the customized DNS servers: As shown below, there are multiple DNS servers configured on the VNet and this is a customized configuration.
   - Here VN-M01-DEV-N01-S04 is the Virtual Network hosting the VM(londocdev1), and below highlighted are DNS servers that are linked to the Virtual Network and these are not azure provided.



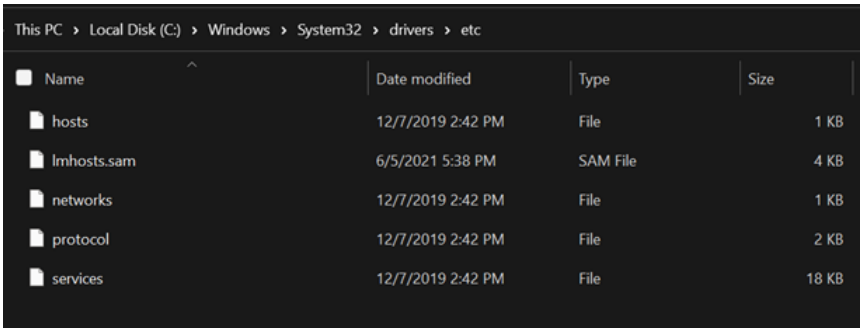
- Please don't touch those DNS servers, as we don't know whether they are Linux based, Windows based servers.
- Only check if all the above DNS servers are getting resolved to respective domain name by performing nslookup as shown below one at a time. All the DNS servers should resolve correctly to their domain name and should not throw error as shown below.

```
C:\Users\kbanil>nslookup www.tsf.pt 10.108.2.4
DNS request timed out.
    timeout was 2 seconds.
Server:  UnKnown
Address:  10.108.2.4
```

- If any error on any of the DNS server, please follow the below steps of how to solve the DNS server resolving issue.

Steps to solve the DNS server resolving issue:

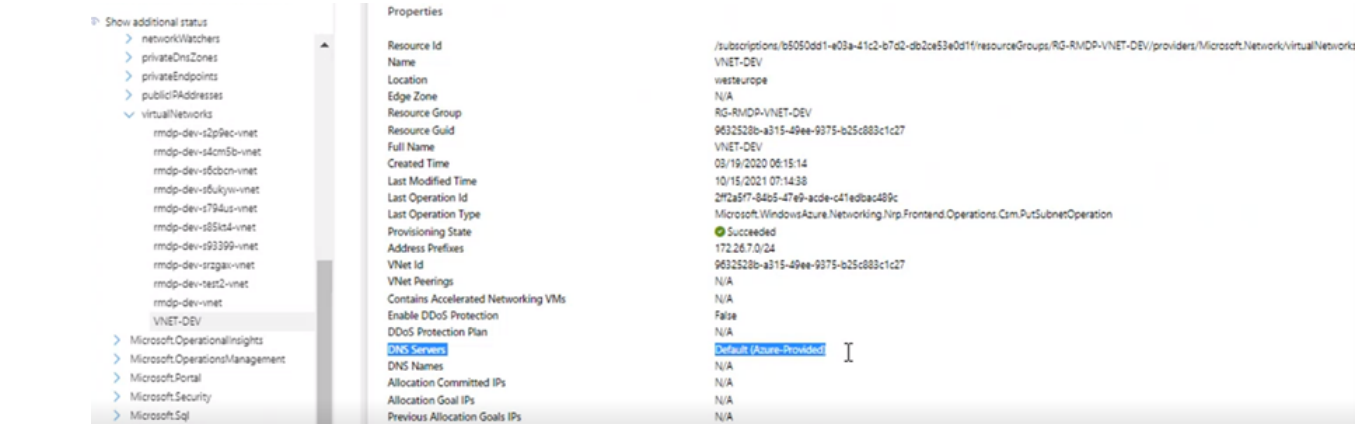
- In order to resolve the DNS server resolving issue as a workaround, please map all the DNS servers shown below in the host file.
- Host file path: C:\Windows\System32\drivers\etc



- Manually map the IP address to the FQDN as shown below in the host file, by doing this, when we perform ping on the FQDN name it will read from the host file and by-pass the dns server:

```
51.136.123.234 ucand-ottpre.labs.gvp.telefonica.com
51.136.123.234 msplayreadydrm.labs.gvp.telefonica.com
10.6.0.5    dbserver122.privatelink.database.windows.net
10.6.0.5    dbserver122.database.windows.net
```

3. If the DNS servers are Azure provided as shown below in screenshot, if this is the case, we can open a collaboration task with Azure Network team to investigate the issue.
    - **Azure provided DNS servers**:



VM landing on OnPrem

1. If the SHIR hosted VM is on cx on-premises, perform ipconfig /all on the VM, to get the IP address and the list of DNS servers configured to the VM(as show below) it may be one or many DNS servers configured.

```
C:\Users\kbanil>ipconfig /all
```

```
Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . : home
   Description . . . . . . . . . . . : Intel(R) Wi-Fi 6 AX201 160MHz
   Physical Address. . . . . . . . . : C8-34-8E-33-58-28
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::7585:a2f:b087:874a%10(Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.1.254(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Friday, July 15, 2022 9:09:56 AM
   Lease Expires . . . . . . . . . . : Friday, July 15, 2022 10:40:06 AM
   Default Gateway . . . . . . . . . : 192.168.1.1
   DHCP Server . . . . . . . . . . . : 192.168.1.1
   DHCPv6 IAID . . . . . . . . . . . : 113783950
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-26-CB-3A-0F-C8-34-8E-33-58-28
   DNS Servers . . . . . . . . . . . : 192.168.1.1
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

2. Also we can try running the command- ipconfig /all | findstr “DNS Servers” to find all the DNS servers configured to VM

```
C:\Users\kbanil>ipconfig /all | findstr "DNS Servers"
   DNS Suffix Search List. . . . . . : fareast.corp.microsoft.com
   Connection-specific DNS Suffix  . :
   Connection-specific DNS Suffix  . :
   Connection-specific DNS Suffix  . :
   Connection-specific DNS Suffix  . :
   Connection-specific DNS Suffix  . : corp.microsoft.com
   DNS Servers . . . . . . . . . . . : 10.50.50.50
   Connection-specific DNS Suffix  . :
   Connection-specific DNS Suffix  . :
```

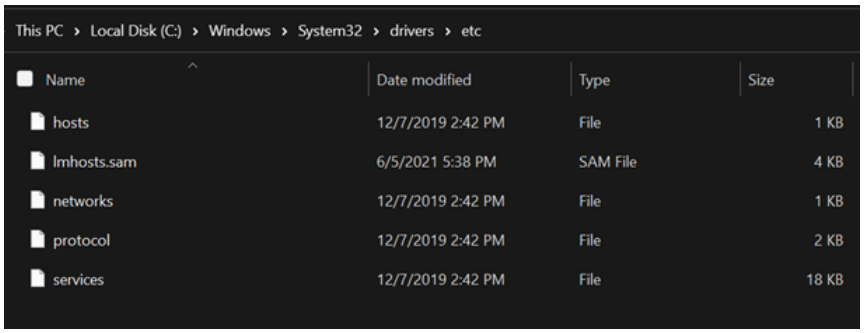
3. Check if the DNS servers are getting resolved to the respective domain name by performing nslookup as shown below. All the DNS servers should resolve correctly to their domain name as shown below.

```
C:\Users\kbanil>nslookup www.tsf.pt 10.50.50.50
Server:  cussclsa0f5b01--commoncorp2-ip3.network.microsoft.com
Address:  10.50.50.50

Non-authoritative answer:
Name:    few-prv-ag01.globalnoticias.pt
Addresses:  148.69.168.39
          148.69.168.38
          148.69.168.40
          148.69.168.41
Aliases:  www.tsf.pt
          few-prv-01.globalnoticias.pt
```

4. If any error, please perform the below steps of adding the FQDN and IP address to the host file.

   - Host file path: C:\Windows\System32\drivers\etc



   - Manually map the IP address to the FQDN as shown below in the host file, by doing this, when we perform ping on the FQDN name it will read from the host file and by-pass the dns server:

```
51.136.123.234 ucand-ottpre.labs.gvp.telefonica.com
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10.6.0.5    dbserver122.privatelink.database.windows.net
10.6.0.5    dbserver122.database.windows.net
```

Conclusion:

Once we add all the DNS servers on the host file, operating system will bypass the DNS query by reading the host file and any intermittent Linked service connectivity issue or any connectors issue that has the endpoints from ADF side should resolve.

Note1: This should resolve the ADF connectivity issues related to DNS not resolving but will not resolve nslookup query. Even after adding the DNS servers on the host file, you will get the same error when you try the nslookup query as shown below, nslookup uses a query against the DNS server and not the host file this is the expected output. Unless Network team adds the proper configuration of DNS in their network channel.

Note2: After adding the DNS servers onto the host file, troubleshooting team can run **ping FQDN name,** ping gets the name FQDN from the host file like ex: dbsrver122.database.windows.net that should resolve the IP address correctly.

```
C:\Users\kbanil>ping dbsrver122.database.windows.net
```

```
51.136.123.234 ucand-ottpre.labs.gvp.telefonica.com
51.136.123.234 msplayreadydrm.labs.gvp.telefonica.com
10.6.0.5    dbserver122.privatelink.database.windows.net
10.6.0.5    dbserver122.database.windows.net
```

```
C:\Users\jocamilo>ping abc.com

Pinging abc.com [13.225.244.107] with 32 bytes of data:
Reply from 13.225.244.107: bytes=32 time=24ms TTL=246
Reply from 13.225.244.107: bytes=32 time=15ms TTL=246
Reply from 13.225.244.107: bytes=32 time=17ms TTL=246
Reply from 13.225.244.107: bytes=32 time=16ms TTL=246
```

Note3: This is a workaround solution from ADF point of view, and for a permanent fix, we can request cx to check with their networking team to see why these DNS are not getting resolved (if they are using custom DNS) or open a collaboration task to the Azure Networking team (in case they use Azure provided DNS).

How good have you found this content?