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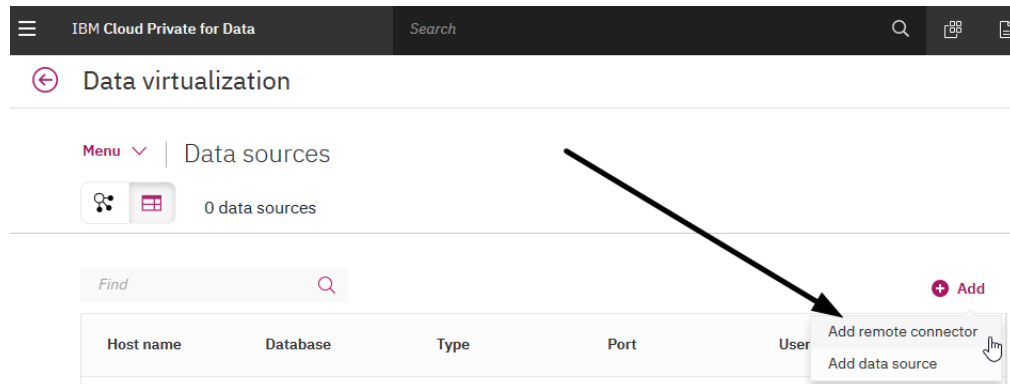
Problem: unable to load local files to Data Virtualization on a server hosted behind NAT (for example Skytap environment). Skytap uses port mapping and Cloud Pak for Data is not yet plug and play compatible with this feature.

Solution:

I.   First use the CP4D User Interface.

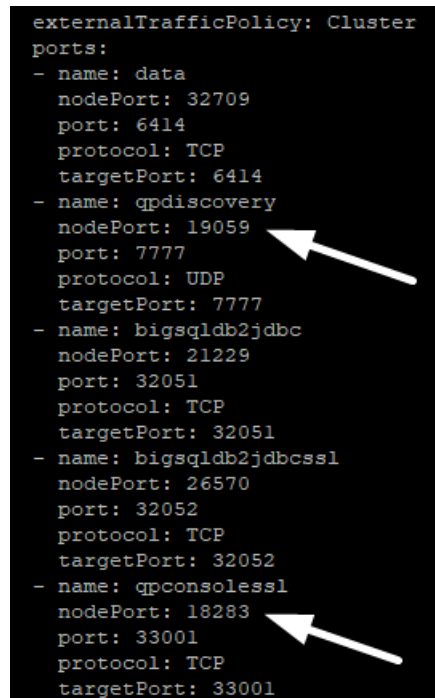In Data Virtualization go to **Menu – Data Sources** and click **Add** and **Add remote connector**

1. Select Linux for OS
2. Specify where Java is located (/opt/ibm/java-i386-80/jre)
3. Specify the folder on the connector (/home/Connector)

II. On the Skytap cluster where the environment is installed

1. Edit the DV service: *kubectl -n zen edit service dv-server*

```
externalTrafficPolicy: Cluster
ports:
- name: data
  nodePort: 32709
  port: 6414
  protocol: TCP
  targetPort: 6414
- name: qpdiscovery
  nodePort: 19059
  port: 7777
  protocol: UDP
  targetPort: 7777
- name: bigsqldb2jdbc
  nodePort: 21229
  port: 32051
  protocol: TCP
  targetPort: 32051
- name: bigsqldb2jdbcssl
  nodePort: 26570
  port: 32052
  protocol: TCP
  targetPort: 32052
- name: qpconsolessl
  nodePort: 18283
  port: 33001
  protocol: TCP
  targetPort: 33001
```

Note the original ports: UDP port (name: qpddiscovery) and the TCP port (name: qpiconsolessl)

2. Ask you Skytap host admin to forward the 2 ports and to give you the forwarded external ports.

3. Replace the original TCP port in service *dv-server* with the external port you received from Skytap admin (ignore the UTP port for now).
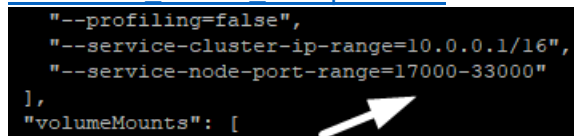
Optional - if the Skytap forwarded port is not between the 30000-32767 range you will need to complete the following to widen the range available to Kubernetes

      ssh to each master and edit the file:
      /etc/cfc/pods/master.json to extend the default NodePort range.
      https://www.ibm.com/support/knowledgecenter/en/SSBS6K_3.1.2/manage_netw
      ork/extend_default_nodeport.html

```
  "--profiling=false",
  "--service-cluster-ip-range=10.0.0.1/16",
  "--service-node-port-range=17000-33000"
],
"volumeMounts": [
```
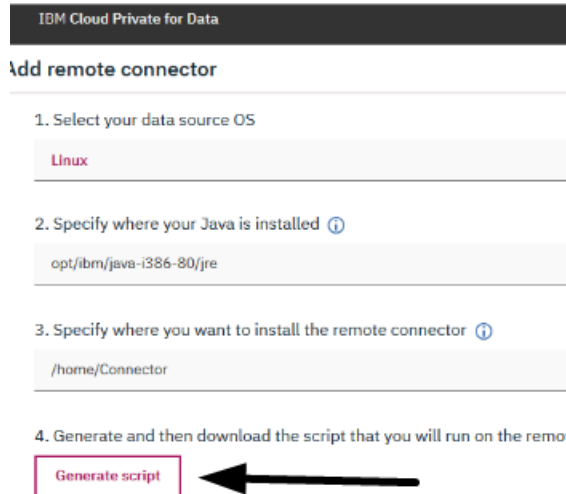
4. Generate script via UI (keep the script - please make sure that the new script has the external port in it under _ADMIN_PORT="XXXXX")

IBM Cloud Private for Data

Add remote connector

1. Select your data source OS

Linux

2. Specify where your Java is installed ⓘ

opt/ibm/java-i386-80/jre

3. Specify where you want to install the remote connector ⓘ

/home/Connector

4. Generate and then download the script that you will run on the remot

Generate script ⬅

5. Change the TCP port again *kubectl edit service dv-server -n zen* (back to original)

III. On the connector machine

1. Create 2 folders: /home/Java and /home/Connector
2. Run the following dependencies:

yum install -y ld-linux.so.2

yum install libgtk-x11-2.0.so.0

yum install libpk-gtk-module.so

yum install libcanberra-gtk-module.so

yum install net-toolsyum

3. Download Java installer to the /Java folder *wget http://public.dhe.ibm.com/ibmdl/export/pub/systems/cloud/runtimes/java/8.0.5.37/linux/i386/ibm-java-i386-sdk-8.0-5.37.bin*

Make it executable *chmod +x ./ibm-java-i386-sdk-8.0-5.37.bin*

Run it to install it *./ibm-java-i386-sdk-8.0-5.37.bin*

By default, it should install to /opt/ibm/java-i386-80

4. In the /home/Java folder create the file: *nano dv_endpoint.sh*

make it executable: *chmod +x ./dv_endpoint.sh*

copy the text of the scrip generated (step 4 in the 2nd paragraph) and paste it in the dv_endpoint.sh file

Run the script /home/Java/*dv_endpoint.sh*

Wait for the dv_endpoint.sh script to finish

5. *cd /home/Connector/sysroot/data/*

vi gaiandb_config.properties

```
ACCESS_CLUSTERS=f96bd422-271e-4b09-9914-ed565f523be0
GAIAN_NODE_PORT=6414
SERVICE_INSTANCE_ID=f96bd422_271e_4b09-9914-ed565f523be0
DISCOVERY_GATEWAYS=9.30.198.12:19059
# Auto Update: 2019-07-25 04:44:13.121: {SERVICE_INSTANCE_ID=f96bd
T=7777, DISCOVERY_GATEWAYS=9.30.198.12:19059, EXTENDER_CLASS_NAME=
be0, IBMDRV_PWD='_@,y>&0y/l}
GAIANDB_JAR_MD5=8437A2AEFCE4E7786AC6180CD49B28C0
```

Look for the UDP port next to DISCOVERY_GATEWAYS=

Change the /home/Connector/sysroot/data/gaiandb_config.properties to reflect the new external port you got from Skytap
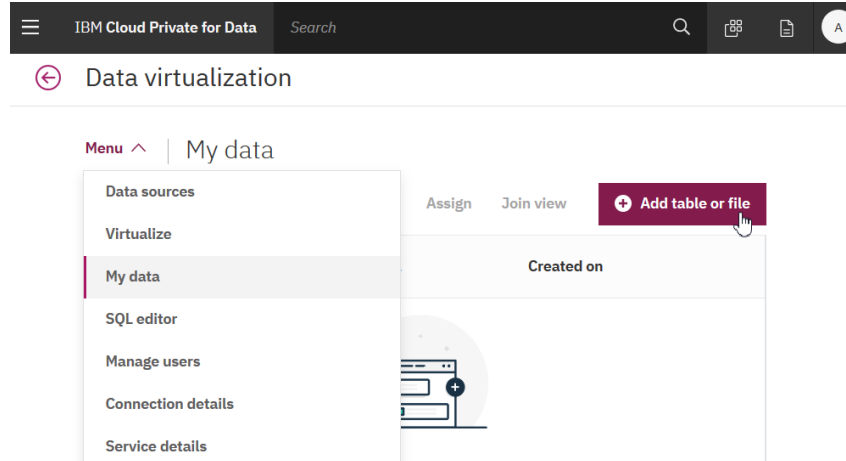
6. Run the Connector script

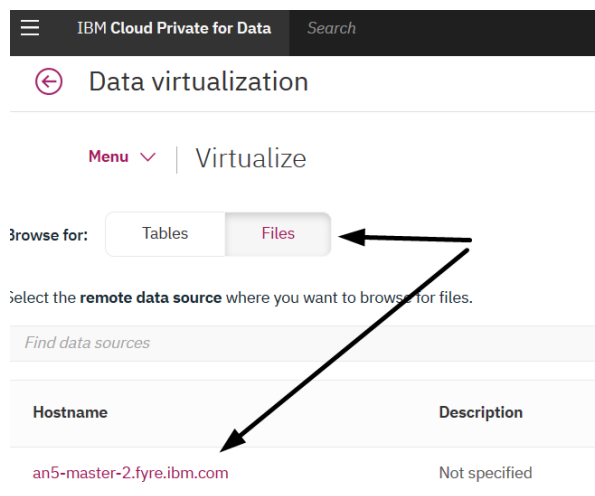*cd /home/Connector*

./datavirtualization_start.sh

```
[root@an5-master-2 Connector]# ./datavirtualization_start.sh
java version "1.8.0_211"
Java(TM) SE Runtime Environment (build 8.0.5.37 - pxi3280sr5fp37-20190618_01(SR5 FP37))
IBM J9 VM (build 2.9, JRE 1.8.0 Linux x86-32-Bit 20190617_419755 (JIT enabled, AOT enabled)
OpenJ9   - 354b31d
OMR      - 0437c69
IBM      - 4972efe)
JCL - 20190606_01 based on Oracle jdk8u211-b25
[root@an5-master-2 Connector]#
```

IV. Proceed to load local files to Data Virtualization on a server hosted behind NAT

1. Under **Menu / My data** click on **Add table or file**

2. Under Virtualize click **Files** and below that – under Hostname, click on the name of the server you want to load the files from

3. You now have access to the whole filesystem of the machine