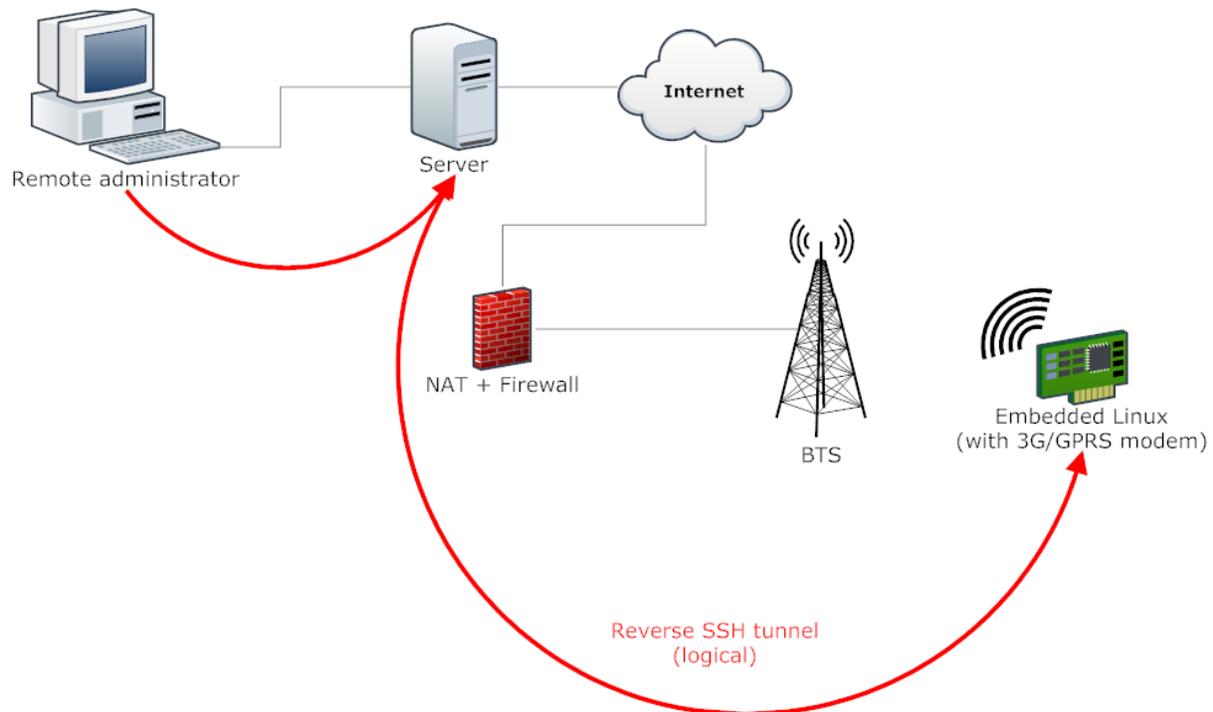


MQTT Bridge Test Plan:

1. Commands tab:

- Reverse SSH:

Reverse SSH allows to initiate a connection from the gateway itself, but requires intermediate server to "tunnel" a connection:



Required Equipment:

- Windows PC
- Linux PC (Call as a Forwarding Server or Intermediate Server) and it should be reachable by the gateway and by your windows PC.
- MQTT Bridge installed Kona Gateway (Mega/Macro/Micro)

Setup:

- I. Setup Linux PC (Forwarding or Intermediate sever) for Reverse SSH:
 - The user should know valid credentials for forwarding server.
 - Make sure forwarding server is configured properly:
 - Login to your forwarding server.
 - Then install the open SSH server (If it is not installed already)
 - Make sure Gateway, Linux server and windows PC are able to ping each other.

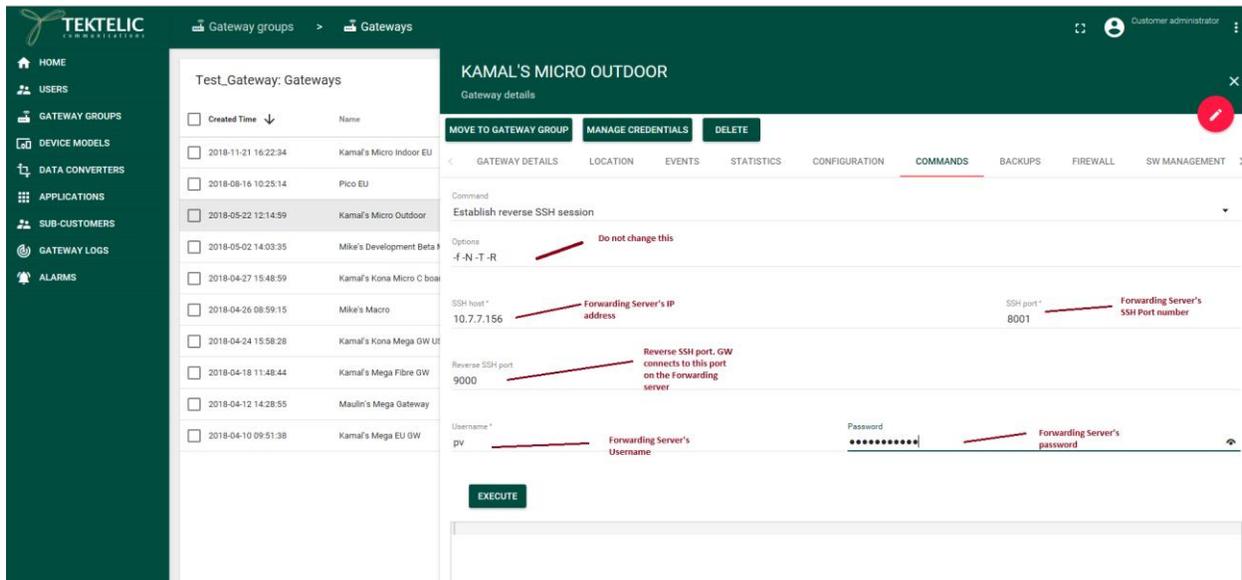
- Then open file using this command `sudo vi /etc/ssh/sshd_config`, and enable following 2 lines by commenting out #. Then change to Yes from No. (just like below)
`GatewayPorts yes`
`AllowTcpForwarding yes`
 - Then save it.
 - Restart the SSH daemon.
`sudo systemctl restart sshd`
- II. Install the MQTT Bridge on the Gateway.
- III. Make sure the `/etc/default/mqtt-bridge.conf` file contains correct gateway's SSH port:
`## SSH local port is a port which is listened by the SSH daemon.`
`#`
`ssh_local_port 22`

Note: mqtt-bridge.conf file on V1.902 has "SSH_Local_port 2511" by default. So please change to 22 (If your GW is not configured for any other port for SSH).

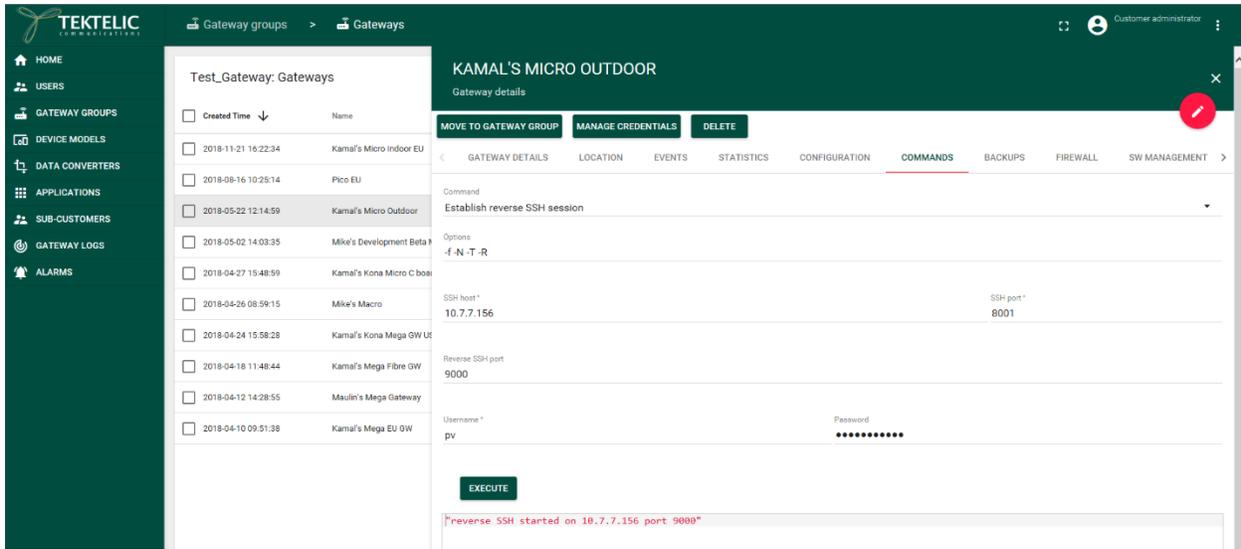
- IV. Start the bridge.

Establish Reverse SSH from NS:

- 1) Login to the Tektelic Network Server. Enter into Gateway details. The gateway must be online to be able to participate in Reverse SSH.
- 2) Go to "COMMANDS", select "Establish reverse SSH session" from the "command" drop down list and fill the fields as described in the screenshot.

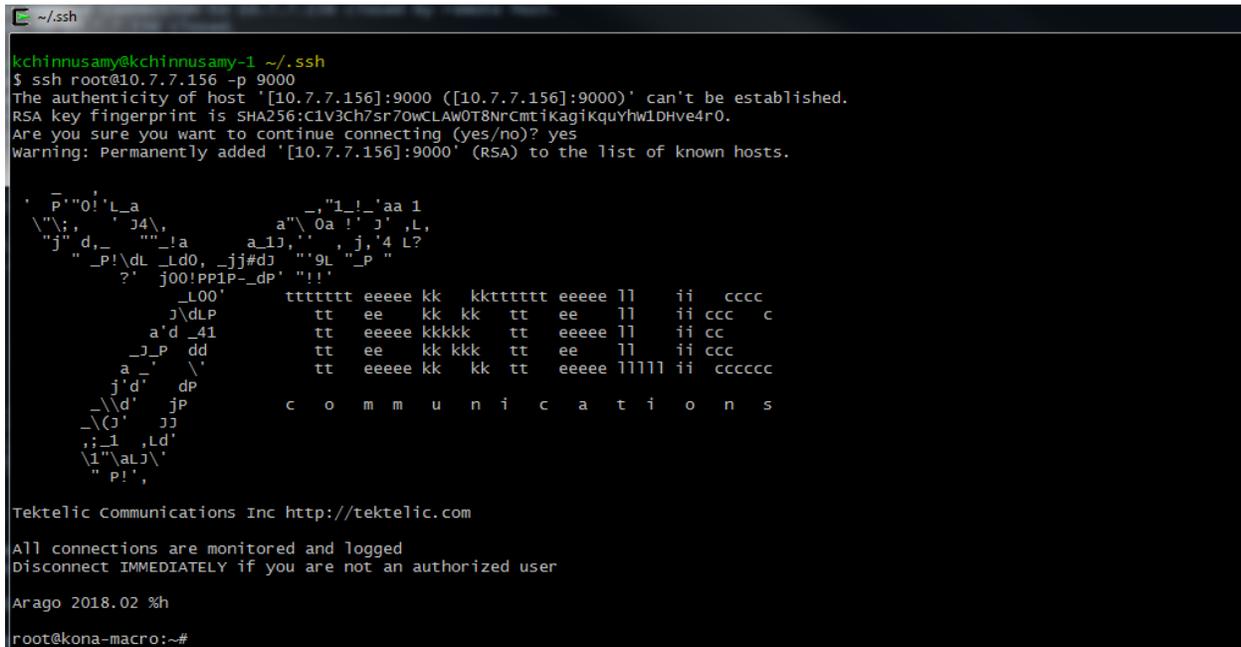


- 3) Then select the "EXECUTE" button. You will see the "reverse SSH started" message below.



Connecting to Gateway via Forwarding Server from Windows PC:

- a. Use putty or Cygwin to connect.
- b. Enter the command as below in the screenshot.
ssh root@10.7.7.156 -p 9000



- c. Now you are successfully connected to the GW from windows PC.

Terminate reverse SSH connection from NS:

- Select “Terminate all reverse SSH sessions” from the drop-down list then select “EXECUTE” button.

The screenshot shows a web interface with a top navigation bar containing buttons for 'MOVE TO GATEWAY GROUP', 'MANAGE CREDENTIALS', and 'DELETE'. Below this is a secondary navigation bar with tabs for 'GATEWAY DETAILS', 'LOCATION', 'EVENTS', 'STATISTICS', 'CONFIGURATION', 'COMMANDS' (which is active), 'BACKUPS', 'FIREWALL', and 'SW MANAGEMENT'. The main content area has a 'Command' dropdown menu set to 'Terminate all reverse SSH sessions' and an 'EXECUTE' button. Below the button, a terminal window displays the output: `"reverse SSH terminated"`.

- **Get Public Key:**
 - Put `drop_bear_key_gen.sh` file into `/home/root/` directory on the Gateway.
 - Then make this file as executable.
 - Then go to `/home/root/` directory and run this file.
`Cd /home/root`
`./drop_bear_key_gen.sh`
 - It will create private and public key. Then restart the MQTT bridge.
 - Then go to NS server->Commands. Then select “Get Public Key” from the drop-down list. And select “EXECUTE” command.
 - This will display the public key from the Gateway.

The screenshot shows the same web interface as above. The 'Command' dropdown menu is now set to 'Get public key' and the 'EXECUTE' button is visible. Below the button, a terminal window displays the output: `"ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQ=Czwyo1sRWTtMzwYUTISk71Ftz4YwXaLEK0x83U61WmRtEXo9uIOk5r9ITvPtZAdNxwULLFBU8bjpUT5IhnCOeBr/j0Fe74Rv"`.