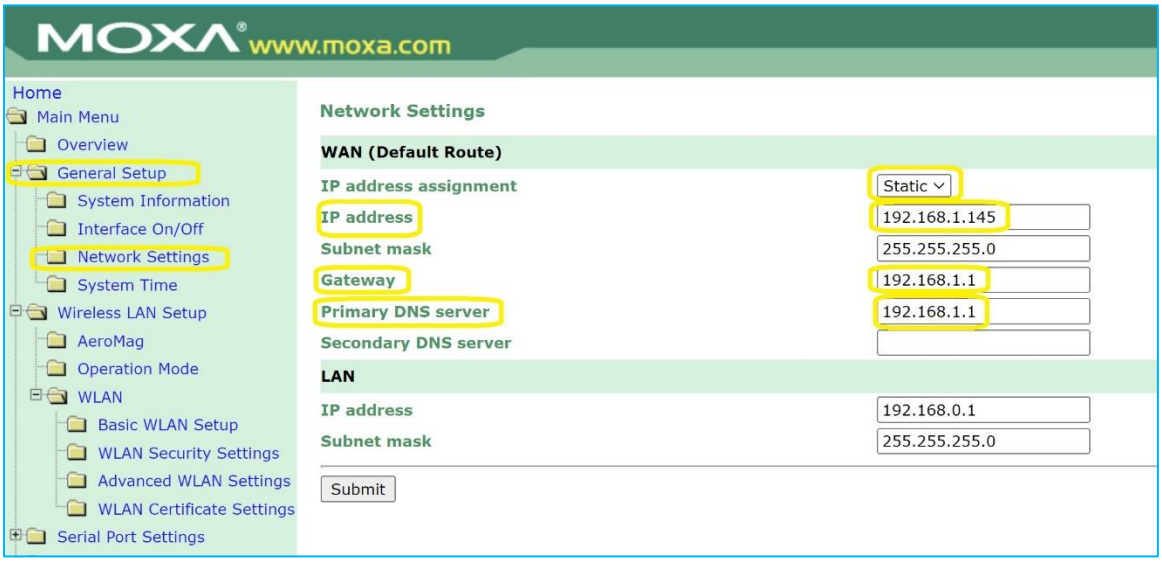
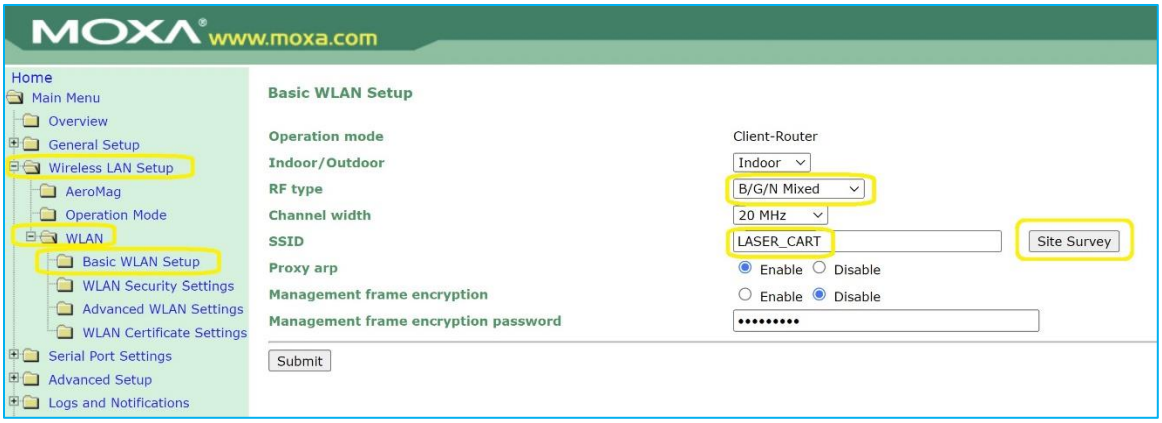
Robot Wireless IP Configuration

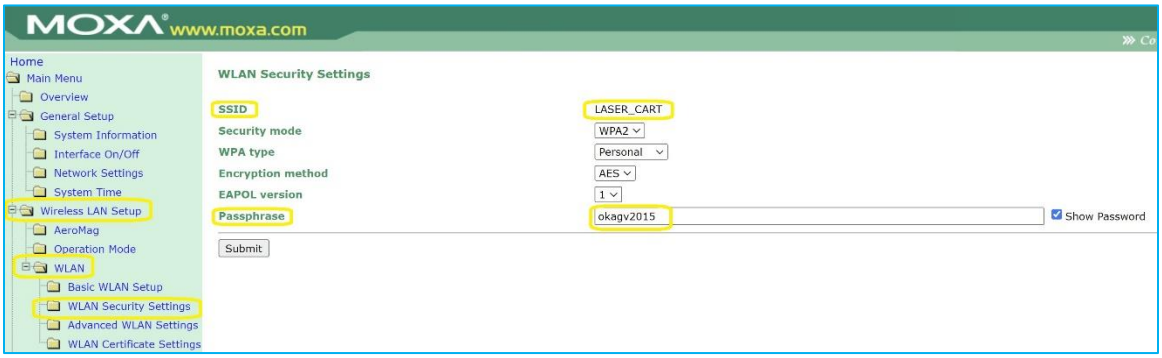
1. Connect ethernet cable to robot, set PC IP to 192.168.0.251 (default gateway should stay 192.168.1.1)
    a. In windows check the IP address of the internal robot router
        i. Win + R → cmd → arp -av
        ii. Moxa device MAC ID starts with 00-90-E8
        iii. Typically the LAN IP should be **192.168.0.1** or **192.168.1.1**
        iv. In the case of CustomerA, devices were *192.168.0.1*
        v. The LAN IP of the robot does not need to be changed
2. Using browser connect to internal Moxa router
    a. Open Chrome or any web browser and type in the IP address (192.168.0.1)
    b. Login with default usr/psw ***Moxa/admin***
        i. In the case of CustomerA, it was ***admin/moxa***
3. Configure robot IP for use with Botservice wifi gateway (typically 192.168.1.1XX)
    a. Once logged in, go to "General Setup > Network Settings" under "WAN (Default Route"
    b. "IP address" change to **192.168.1.1xx** with the 'xx' being the Bot Number you determine
        i. For CustomerA the 'xx' range will be 45-55
    c. "Gateway" change from **192.168.88.1** to **192.168.1.1**
    d. "Primary DNS server" also change to 192.168.1.1
    e. Click submit



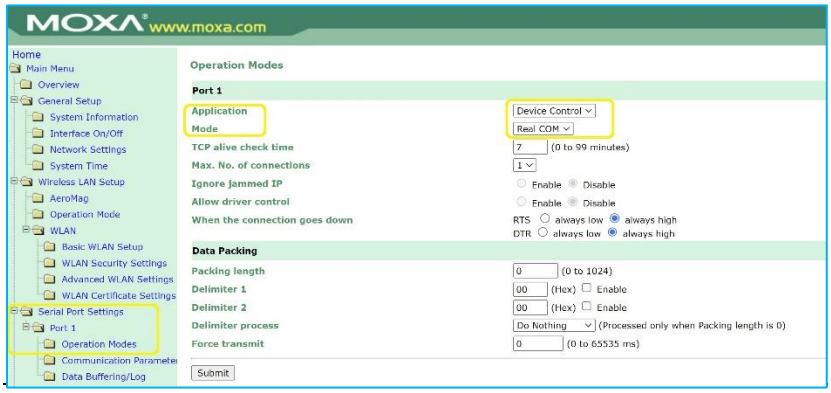
4. Go to "Wireless LAN Setup > WLAN > Basic WLAN Setup"
    a. Click "Site Survey" and select "LASER_CART" from the list
    b. Set "RF Type" to "B/G/N Mixed"
    c. Click submit



5. Go to “Wireless LAN Setup > WLAN > WLAN Security Settings”
    a. Make sure “SSID” says “LASER_CART” and change “Passphrase” to **okagv2015**

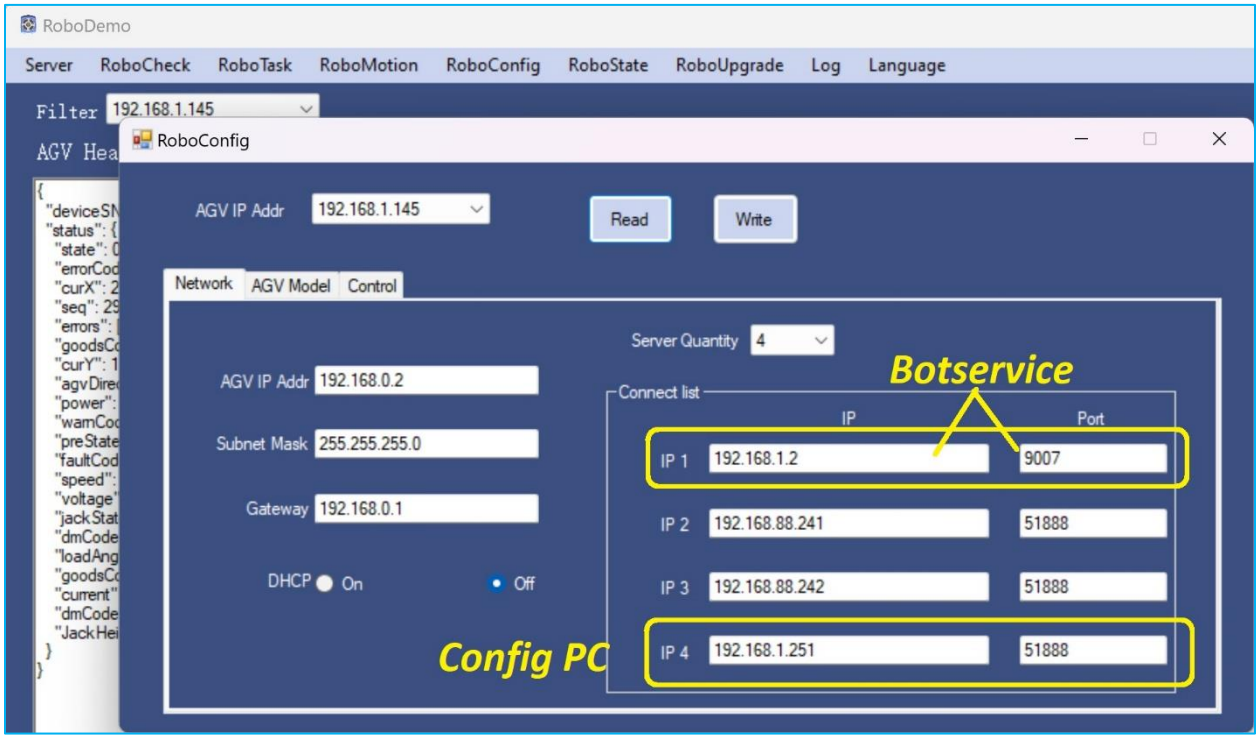


6. Go to “Serial Port Settings > Port 1”
    a. Click “Operation Modes”, Under “Port 1” set the following
        i. “Application” set to “Device Control”
        ii. “Mode” set to “Real COM”
            1. Sometimes you must set to “Socket” and “TCP Client” first
            2. Then revert to “Device Control” and “Real COM”
    b. Click submit and wait for router to restart



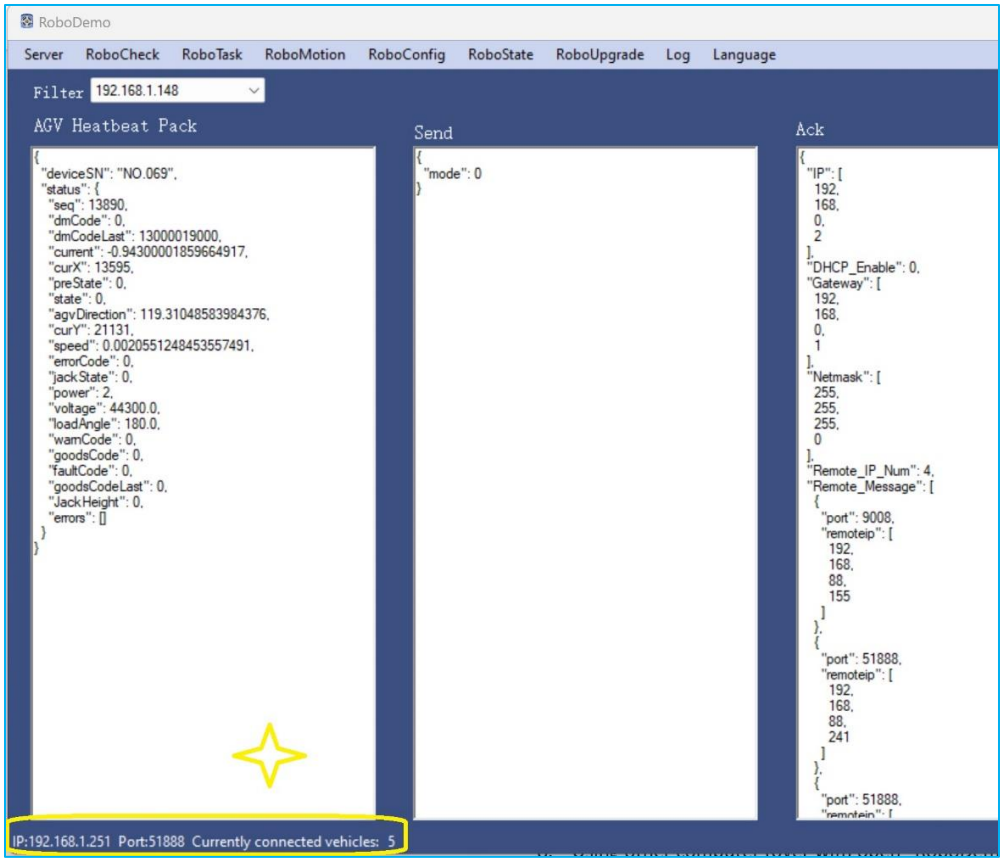
7. Keep ethernet cable connected to LAN port on robot.
    a. Set PC IP to 192.168.126.253
    b. Open “RoboDemo.exe”

c. Top left click “Server > Connect”
    i. It should connect automatically
d. You should see at the bottom left your IP address (192.168.126.253) and Port (51888) and “Currently connected vehicles” count (the count should say zero)
e. Push reset button on Robot
    i. Should see “Currently connected vehicles” as 1 after a few seconds
f. Click “RoboCheck”
    i. Select the only robot IP in “AGV IP” dropdown on top left
    ii. Change “Protocol Switch” to “Liftians” in dropdown on top right and click switch
    iii. You should see activity in “AGV Heatbeat Pack”
        1. If not, select robot IP from the “Filter” dropdown
g. Click “RoboConfig”
    i. Select “AGV IP Addr” IP of robot
        1. Click “Read”
        2. Change the “IP 1” to the Botservice server (192.168.1.2 port 9007)
        3. Change the “IP 4” to your PC IP address in the 192.168.1.xxx range (in my case at CustomerA I’m using 192.168.1.251 and keep port at 51888)
        4. Click “Write”



h. Unplug ethernet from robot LAN port and push the Reset button on robot

8. Using other computer (over wifi) open “RoboDemo.exe”
    a. Top left click “Server > Connect”
        i. Choose your wifi IP (192.168.1.251)
        ii. Should see “Currently connected vehicles” count as however many robots are turned on and configured properly

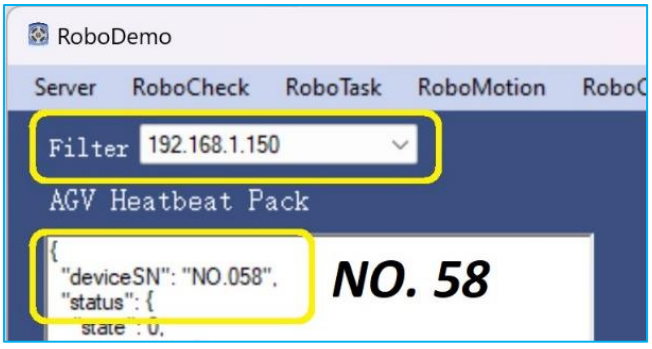


Robot Firmware Upgrade

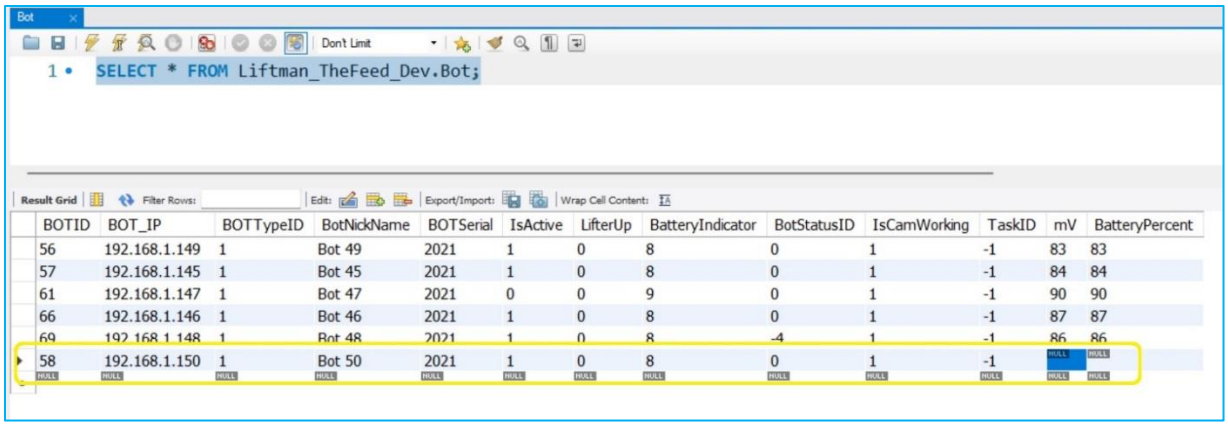
1. Click “RoboUpgrade”
2. Click the check box of the robot you want to upgrade
3. Click “Read Firmware” and select the *.BIN file specific to the type of robot (for CustomerA the file LFS_W500_20220926.bin was used)
4. Click “Download”?, wait for 100% done

Add Robot to Database

1. SELECT * FROM Liftman_CustomerA_Dev.Bot;
2. Add new bot to the table WITH CORRECT BOT ID (not bot IP name)
3. In this case I’m adding Bot 50 (192.168.1.150)
    a. In RoboDemo you can see actual BOT ID (which for this robot is 58)



4. Add correct information to “Bot” table in database:

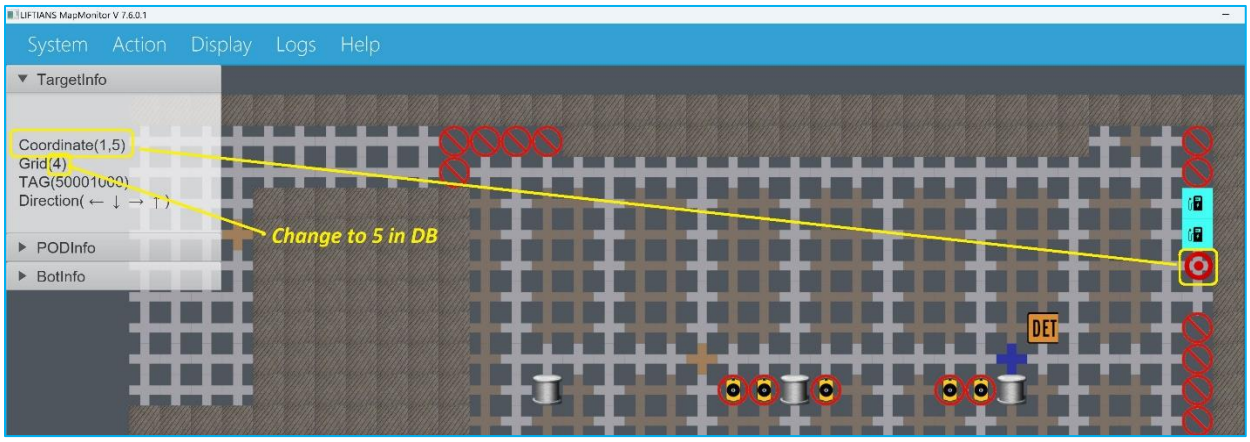


BOTID	BOT_IP	BOTTypeID	BotNickName	BOTSerial	IsActive	LifterUp	BatteryIndicator	BotStatusID	IsCamWorking	TaskID	mV	BatteryPercent
56	192.168.1.149	1	Bot 49	2021	1	0	8	0	1	-1	83	83
57	192.168.1.145	1	Bot 45	2021	1	0	8	0	1	-1	84	84
61	192.168.1.147	1	Bot 47	2021	0	0	9	0	1	-1	90	90
66	192.168.1.146	1	Bot 46	2021	1	0	8	0	1	-1	87	87
69	192.168.1.148	1	Bot 48	2021	1	0	8	-4	1	-1	86	86
58	192.168.1.150	1	Bot 50	2021	1	0	8	0	1	-1	NULL	NULL

5. Restarting botservice will make new robot show up.

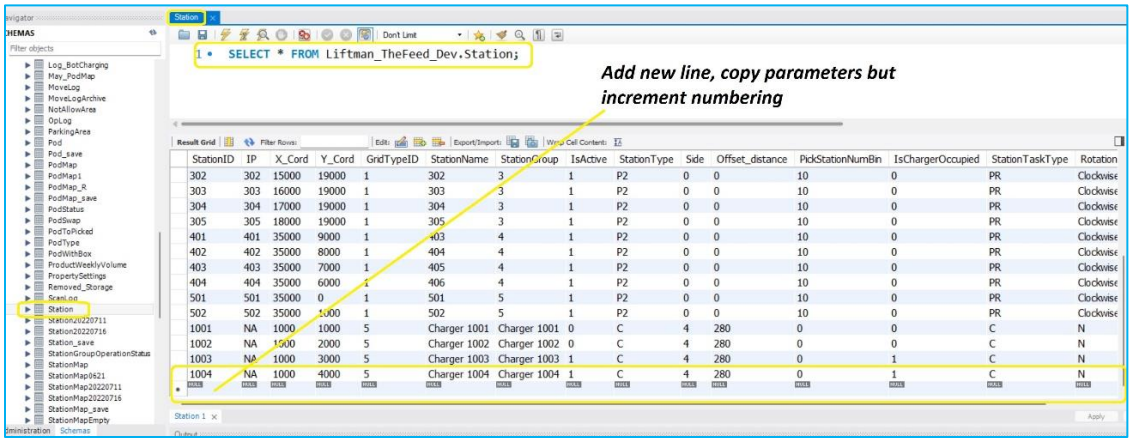
Add Charger to Database and Grid

1. Identify grid location for charger:



   a. In our case the new location will be 1,5 (X=1, Y=5)
   b. There are two tables that need to be modified “Station” and “InitWarehouseMap”

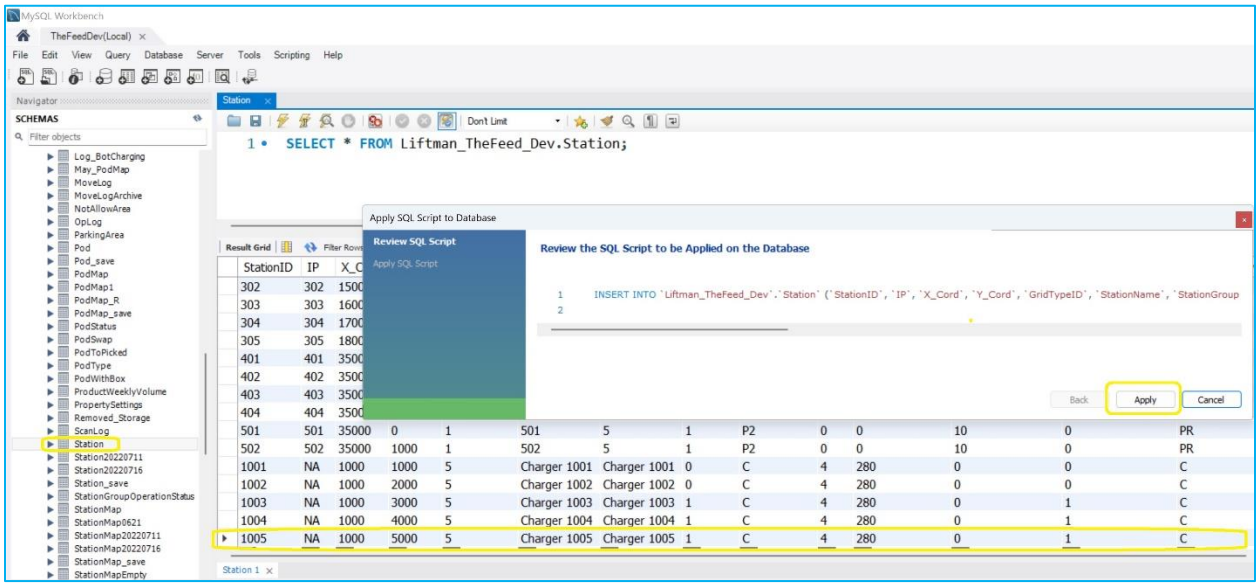
2. In database go to “Station” table:



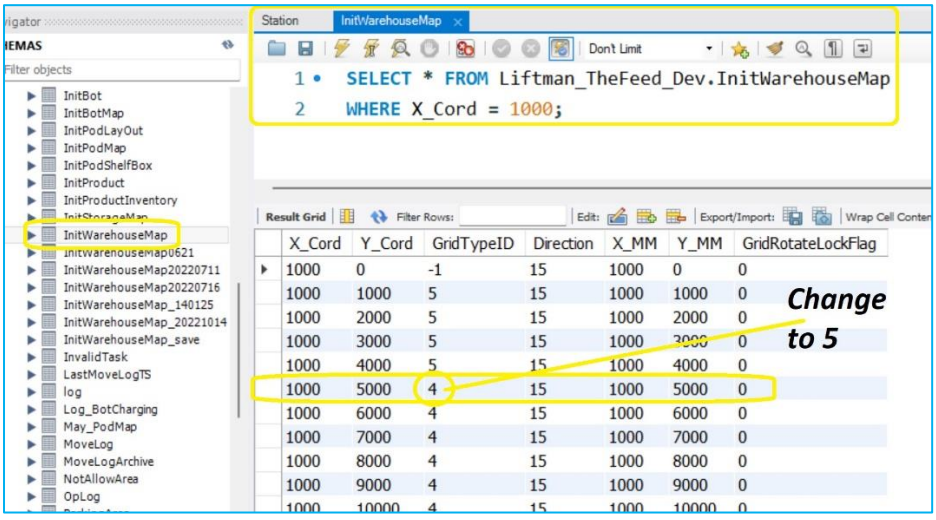
StationID	IP	X_Cord	Y_Cord	GridTypeID	StationName	StationGroup	IsActive	StationType	Side	Offset_distance	PickStationNumBin	IsChargerOccupied	StationTaskType	Rotation
302	302	15000	19000	1	302	3	1	P2	0	0	10	0	PR	Clockwise
303	303	16000	19000	1	303	3	1	P2	0	0	10	0	PR	Clockwise
304	304	17000	19000	1	304	3	1	P2	0	0	10	0	PR	Clockwise
305	305	18000	19000	1	305	3	1	P2	0	0	10	0	PR	Clockwise
401	401	35000	9000	1	403	4	1	P2	0	0	10	0	PR	Clockwise
402	402	35000	8000	1	404	4	1	P2	0	0	10	0	PR	Clockwise
403	403	35000	7000	1	405	4	1	P2	0	0	10	0	PR	Clockwise
404	404	35000	6000	1	406	4	1	P2	0	0	10	0	PR	Clockwise
501	501	35000	0	1	501	5	1	P2	0	0	10	0	PR	Clockwise
502	502	35000	1000	1	502	5	1	P2	0	0	10	0	PR	Clockwise
1001	NA	1000	1000	5	Charger 1001	Charger 1001	0	C	4	280	0	0	C	N
1002	NA	1000	2000	5	Charger 1002	Charger 1002	0	C	4	280	0	0	C	N
1003	NA	1000	3000	5	Charger 1003	Charger 1003	1	C	4	280	0	1	C	N
1004	NA	1000	4000	5	Charger 1004	Charger 1004	1	C	4	280	0	1	C	N

a. Add a new line at the bottom of the table with incremental numbering
   i. StationID: 1005
   ii. IP: NA
   iii. X_Cord: 1000
   iv. Y_Cord: 5000
   v. GridTypeID: 5
   vi. StationName: Charger 1005
   vii. StationGroup: Charger 1005
   viii. Etc, copy rest of the columns

b. Apply changes to the database table:



3. Next, go to "InitWarehouseMap" table:
   a. Add "WHERE X_Cord = 1000;" as shown below to make it easier to find the grid to change:



   b. Apply changes to database table and restart botservice for new charger to show up:


LIFTIANS MapMonitor V 7.6.0.1
System
Action
Display
Logs
Help
TargetInfo
PODInfo
BotInfo
New charger successfully added
DET