Important Information

Just about everything in the game is tracked using a SQL database.
(Quest progression, NPCs, combat, current player status…)

Each NPC has a base requirement of entries in 4 tables in order to exist:

npc_types :   130 parameters detailing all npc information
spawngroup : A collection of **spawnentry** tables.
spawnentry: A relationship between the npc_id and the **spawngroup**
spawn2:   Physical location of where the **spawngroup** will spawn

There can be a lot more associated tables, but if you want to see an NPC
in-game, these 4 entries are the base requirements.

The PEQ Editor that comes with akk-stack will do most of the heavy lifting

First, with the local server running. (run make up inside /akk-stack/)
You will need the PEQ Editor.
The command can be found by running make

```
init:
  install                        Install full application port-range-high=[] ip-address=[]
  init-strip-mysql-remote-root   Strips MySQL remote root user
  init-reset-env                 Resets .env
  init-peq-editor                Initializes PEQ editor
```

Run make init-peq-editor to start the PEQ editor container.

You can then use make info to get the IP, port and login info for the editor.

I used the in-depth guide found here to create an NPC locally:
https://docs.eqemu.io/server/npc/customizing-npcs/using-the-peq-database-editing-interface/

I highly recommend following the linked guide and getting familiar with PEQ
A couple notes:

You can use #loc in the in-game chat to get your current location coordinates.
I found this to be the easiest way to place NPCs where you want them.
(For entry in the spawn point 'X, Y, Z' and 'heading' fields)


```
CheckLoS benchmark took [3.7615e-05]
Location for Yourself | XYZ: -43.99, -103.01, 20.89 Heading: 362.75
Best Z for Yourself | 15.38
Fixed Z for Yourself | 21.00
You are in a Normal Region.
```

This option is required for dialog (and many other things), it is under
the MISC category when creating an NPC:

☑ Has Quest File

If you grant your local login with GM status, you can use in game commands to refresh the NPCs without requiring a full server restart.

Highly recommended for development. To do so:

Run make mc from /akk-stack/ with the server running.

This puts you into the MariaDB container. Be cautious with commands here.

Use the following command to correctly find your account (will not make changes):
SELECT id, name, status FROM account WHERE name = '<account_name>';

Once you are sure of your account name, use this command to change the status:
UPDATE account SET status = 250 WHERE name = '<account_name>';

You can use CTRL+C to exit. Your client will need to restart to realize the changes.

Now if you followed the linked guide, you can use #repop in-game to repopulate the NPCs based on the database entries (important later).

PEQ Editor uses SQL commands to enter this information into the database. Since we won't be able to use git to track the databases, we need another method for NPCs to be persistent on the AWS server…
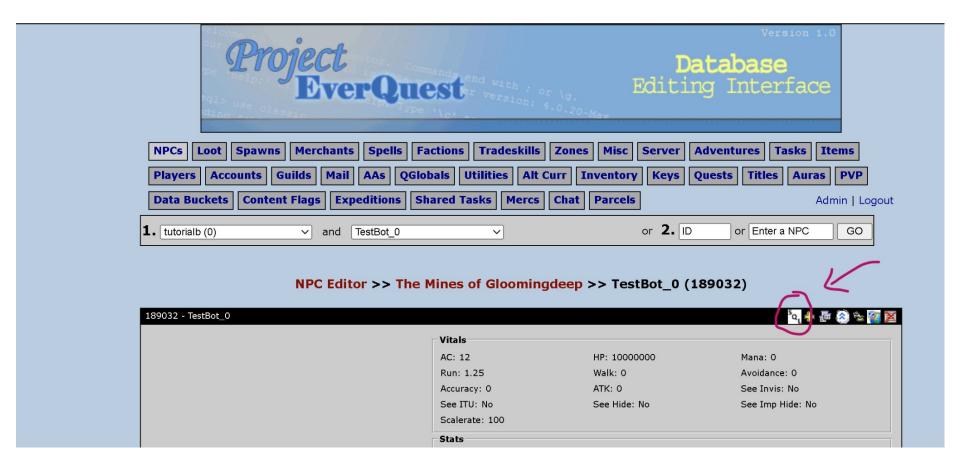
Suggested Approach:

We create a directory of SQL files (one for each project-related NPC). These commands can be used to safely insert the NPCs to the main database while avoiding conflicts.

How to make an NPC a permanent addition to the project using my latest PR.

General Overview:

- Use PEQ Editor to make an NPC
- Get SQL commands from PEQ Editor
- Use SQL commands to create a file that will insert the NPC into the main database with a unique primary key
- Add the file to the project's NPC folder
- Delete your NPC using PEQ Editor
- Run the script to check that your NPC is recreated properly
- Done!

Locate your created NPC on the 'NPCs' tab and click the 'SQL' button

Copy the UPDATE command. We need to make a couple of changes to it, but it's in a much safer format than the INSERT.

NPC Editor >> The Mines of Gloomingdeep >> TestBot_0 (189032)

```
"0", "0", "100", "0", "0", "0", "1", "0", "100", "100", "0", "0", "0", "0", "0", "0", "0",
"0", "0", "0", "0", "0", "0", "1", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0", "0",
"0", "-1", "0", "100", "0", "0", "1", "0", "0");
```

```sql
UPDATE npc_types SET id="189032", name="TestBot_0", lastname="", level="1", race="457", class="1", bodytype="5", hp="10000000",
mana="0", gender="2", texture="0", helmtexture="0", herosforgemodel="0", size="10", hp_regen_rate="1000", hp_regen_per_second="0",
mana_regen_rate="0", loottable_id="0", merchant_id="0", greed="0", alt_currency_id="0", npc_spells_id="0", npc_spells_effects_id="0",
npc_faction_id="0", adventure_template_id="0", trap_template="0", mindmg="1", maxdmg="5000", attack_count="-1", npcspecialattks="",
special_abilities="", aggroradius="70", assistradius="0", face="0", luclin_hairstyle="0", luclin_haircolor="0", luclin_eyecolor="0",
luclin_eyecolor2="0", luclin_beardcolor="0", luclin_beard="0", drakkin_heritage="0", drakkin_tattoo="0", drakkin_details="0",
armortint_id="0", armortint_red="0", armortint_green="0", armortint_blue="0", d_melee_texture1="0", d_melee_texture2="0",
ammo_idfile="IT10", prim_melee_type="28", sec_melee_type="28", ranged_type="7", runspeed="1.25", MR="1000", CR="1000", DR="1000",
FR="1000", PR="1000", Corrup="1000", PhR="1000", see_invis="0", see_invis_undead="0", qglobal="0", AC="12", npc_aggro="0",
spawn_limit="0", attack_speed="0", attack_delay="30", findable="0", STR="12", STA="12", DEX="12", AGI="12", _INT="12", WIS="12",
CHA="12", see_hide="0", see_improved_hide="0", trackable="1", isbot="0", exclude="1", ATK="0", Accuracy="0", Avoidance="0",
slow_mitigation="0", version="0", maxlevel="0", scalerate="100", private_corpse="0", unique_spawn_by_name="0", underwater="0",
isquest="1", emoteid="0", spellscale="100", healscale="100", no_target_hotkey="0", raid_target="0", armtexture="0",
bracertexture="0", handtexture="0", legtexture="0", feettexture="0", light="0", walkspeed="0", peqid="0", unique_="0", fixed="0",
ignore_despawn="0", show_name="1", untargetable="0", charm_ac="0", charm_min_dmg="0", charm_max_dmg="0", charm_attack_delay="0",
charm_accuracy_rating="0", charm_avoidance_rating="0", charm_atk="0", skip_global_loot="0", rare_spawn="0", stuck_behavior="0",
model="0", flymode="-1", always_aggro="0", exp_mod="100", heroic_strikethrough="0", faction_amount="0", keeps_sold_items="1",
is_parcel_merchant="0", multiquest_enabled="0" WHERE id="189032";
```

These didn't work for me
>

Copy INSERT to Clipboard   Copy UPDATE to Clipboard   Hide SQL

Paste the copied UPDATE line into template.sql (a file in my PR)

```
 template.sql ●
Ubuntu-20.04 > home > jbz > CS-472 > EQ > akk-stack > Eulogy-Quest > SQL >  template.sql
   6    BEGIN
  39        -- If we found an available ID, insert the NPC, otherwise throw an error
  40        IF npc_id IS NOT NULL THEN
  41            -- Insert into npc_types
  42
  43            --PASTE YOUR NPC SQL COMMAND HERE
  44            UPDATE npc_types SET id="189032", name="TestBot_0", lastname="", level="1", race="457", class="1", bodytype="5", hp="10000000", mana="0",
  45            -- END PASTE SECTION
```

IMPORTANT 1: Change 'UPDATE' —> 'INSERT INTO'
IMPORTANT 2: Change '<local_id>' —> 'npc_id'

```
--PASTE YOUR NPC SQL COMMAND HERE
INSERT INTO npc_types SET id=npc_id, name="TestBot_0", las
-- END PASTE SECTION
```

```
is_parcel_merchant="0", multiquest_enabled="0" WHERE id="189032";
```

IMPORTANT 3:
Remove 'WHERE id="<local_id>"

(It is at the end of the SQL command, be sure to keep the semicolon)


```
is_parcel_merchant="0", multiquest_enabled="0";
```

That covers the **npc_types** table entry.

PEQ Editor doesn't supply SQL commands for the other three spawn related tables. Luckily for us, they are much smaller tables and the default values will do for now.

I haven't worked out the path grid tables yet, so if you made your NPC walk around, they will be stationary for now.

At the top of the template, use your #loc output to change where the NPC will spawn and the zone it's in. You don't need to make changes to the spawn table entries beyond this

```
23      SET zone_name = 'tutorialb';  -- the tutorial zone's shortname
24
25      -- CHANGE WHERE THE NPC SPAWNS HERE
26      SET x_pos = 0;    --x val    from #loc
27      SET y_pos = 0;    --y val    from #loc
28      SET z_pos = 0;    --z val    from #loc
29      SET heading = 0; --heading from #loc
```

Save the file as <npc_name>.sql and put it in /akk-stack/Eulogy-Quest/NPC/

We are now free to delete our local NPC and spawn entries from the database to test the SQL file. (Not required, but it will make exact copies in the same place)

The easiest way is to first delete the NPC's **spawngroup** from PEQ Editor. You can find your NPC by zone and name from the "NPCs" tab and then switch to the "spawns" tab and it will give you the **spawngroup.**

Warning: If you delete the NPC first, the **spawngroup** can only be found by its own ID (a pain).

Deleting the **spawngroup** will remove all three associated entries from the **spawngroup, spawn2 and spawnentry** tables.

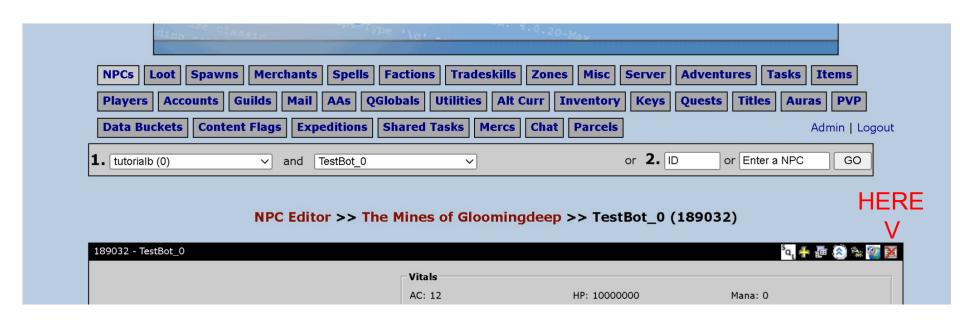# Be very careful that this is the spawngroup for your NPC!

1. tutorialb (0) ▾ and TestBot_0 ▾ or **2.** ID or Enter a NPC GO

Spawn Editor >> The Mines of Gloomingdeep >> TestBot_0 (189032)

Spawngroup options

- Click here to create a new spawngroup
- Click here to add this NPC to an existing spawngroup
- Click here to import spawnpoints from Magelo

This red X here deletes all spawn entries

Spawngroup: tutorialb_3288211 - "3288211"   View Spawnpoints (1) for this Spawngroup

min_x: 0	max_x: 0	min_y: 0	max_y: 0	dist: 0
mindelay: 15000	delay: 45000	despawn: None		despawn timer: 100
spawn_limit: 0	wp_spawns: 0			

NPC	Chance	Min Time	Max Time	Flags	
TestBot_0 (189032)	100	0	0	No	

Balance Spawn Rates

Now we can switch to the 'NPCs' tab and delete the NPC.

Be very careful that this is your NPC!

| NPCs | Loot | Spawns | Merchants | Spells | Factions | Tradeskills | Zones | Misc | Server | Adventures | Tasks | Items |

| Players | Accounts | Guilds | Mail | AAs | QGlobals | Utilities | Alt Curr | Inventory | Keys | Quests | Titles | Auras | PVP |

| Data Buckets | Content Flags | Expeditions | Shared Tasks | Mercs | Chat | Parcels | Admin | Logout |

1. tutorialb (0) and TestBot_0 or 2. ID or Enter a NPC GO

HERE
V

NPC Editor >> The Mines of Gloomingdeep >> TestBot_0 (189032)

189032 - TestBot_0

Vitals
AC: 12   HP: 10000000   Mana: 0

And now a simple #repop to show that the NPC is gone.

TestBot

Vahlar
(Armor Miss

say, 'Hail, TestBot '
say, '#depop'
say, '#repop'

Main Chat

Vahlar
(Armor Miss

Main Chat

Now the NPC has a file for database entry and can be added back in by using the shell script from the /akk-stack/Eulogy-Quest/ directory as follows:

```
zaleschu@vm:~/EQ/akk-stack/Eulogy-Quest$ ./addNPC.sh TestBot_0.sql
TestBot_0.sql successfully added to database.
zaleschu@vm:~/EQ/akk-stack/Eulogy-Quest$
```
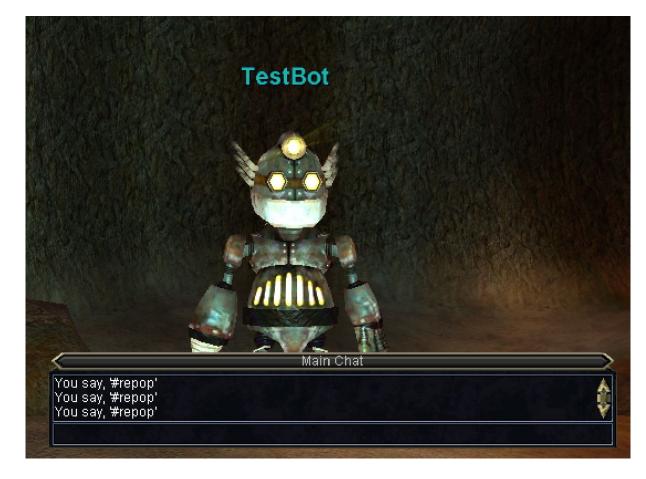
Now this command can be used to add the NPCs to our AWS server while avoiding any database conflicts.

Warning: running the command multiple times will create duplicate NPCs, this can be easily cleaned up in the PEQ Editor.

Another #repop will bring the NPC back.

If you run into any issues let me know.

Don't forget to create a quest file for the NPC:

touch server/quests/tutorialb/<npc_name>.pl