



Query & Data format

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Green: Query format

Blue: Data format

Red: Notes

QUERIES	
Name	Description
login	Logs the user in his account (POST request)
get_scores	Returns leaderboard data for a specific level
get_replay	Returns replay data for a specific run
query_levels	Returns a list of userlevels from a specific tab and page
search/levels	Returns a list of userlevel results for a specific search

CATEGORIES (qt)	
ID	Category
7	Best
8	Featured
9	Top Weekly
10	Newest
11	Hardest
12	Made by me, sorted by ++'s
13	Made by me, sorted by date
14	Favourited, sorted by date
15	Favourited, sorted by ++'s
18	Made by friends, sorted by date
19	Made by friends, sorted by ++'s
21	Favourited by friends
22	Tracked by friends, sorted by date
24	Tracked by friends, sorted by rank, scored
23	Tracked by friends, sorted by rank
25	Tracked by friends, sorted by rank, not scored
26	Tracked by me
30	Following, sorted by date
31	Following, sorted by ++'s
36	Search

PARAMETERS				
Name	Obligatory	Description	Values	Default
app.id	No	?	Integer	None
steam.id	Yes	Steam64ID of an active N++ player	17-digit integer	None
steam.auth	Yes	Steam token, can be left empty	Base 16 integer	None
user.id	No	ID of the player in N++'s server	Integer (0~160K currently)	None
level.id	get_scores	Self-explanatory	Integer (0~100K currently)	None
replay.id	get_replay	Self-explanatory	Integer (0~3M currently)	None
player.id	No	?	Integer	None
qt	No	On <i>get_scores</i> , leaderboard tab	0 (global), 1 (around), 2 (friends)	0
		On <i>query_levels</i> , map tab	Integer, 7 to 31 (see below)	0
mode	search	Playing mode	0 (solo), 1 (coop), 2 (race)	0
page	No	Page of results from <i>query_levels</i>	Integer (0~100)	0
search	search	Text query to search	String of text	None

Query format: <https://dojo.nplusplus.ninja/prod/steam/+query+?+parameters>

Sample: Retrieve the first page of results from "Newest" in Solo mode:

https://dojo.nplusplus.ninja/prod/steam/query_levels?steam.id=76561198041272062&steam.auth=&qt=10&mode=0&page=0

QUERY LEVELS	
HEADER (48 bytes)	
#	Bytes Description
16	Date of db update
04	Nº of maps
04	Page
04	? (0)
04	Category
04	Game mode
04	? (1200, 5)
04	? (500, 25)
04	? (0, 5)
MAP HEADERS (44 bytes)	
#	Bytes Description
04	Map ID
04	User ID
16	Author name (padded)
04	Number of ++'s
16	Date of publishing
MAP DATA BLOCKS	
#	Bytes Description
04	Size of block in bytes
02	?
##	z-lib compressed map data

- All integers are little endian.
- Possible values in parenthesis.
- A query is capped at 500 results.

MAP FILE	
HEADER	
#	Bytes Description
04	?
04	File length
04	?
04	Game mode
22	?
MAP DATA	
128	Level name (padded)
18	0
966	Tile data
80	Object counts
##	Object data
EACH TILE	
01	Tile ID
EACH OBJECT	
01	Object ID
01	X coordinate
01	Y coordinate
01	Orientation
01	Mode

- Tiles are stored left to right, up to down (23*42=966 B).
- Each object count is 2 bytes, thus there are 11 unused ones.
- Objects are sorted by ID.

REPLAY FILE	
REPLAY DATA	
#	Bytes Description
04	? (0)
04	Replay ID
04	Level ID
04	User ID
##	z-lib compressed demo
DEMO DATA	
01	? (0)
04	Length of data
04	? (1)
04	Frame count
04	Level ID
04	Game mode
04	? (0)
01	? (1, 3)
04	? (2 ³² - 1)
##	Demo (1 Byte/Frame)
FRAME VALUES	
Bit	Description
0	Jump
1	Right
2	Left
3	Suicide

Example frame:
right + jump = 2¹ + 2⁰ = 3.

ATTRACT FILE	
HEADER	
#	Bytes Description
04	Length of map data
04	Length of demo data
MAP DATA	
#	Bytes Description
04	Level ID
04	Game mode
04	? (1)
18	? (0)
128	Level name (padded)
01	0
##	Author name
01	0
##	Map data
DEMO DATA	
01	? (0)
04	Length of data
04	? (1)
04	Frame count
04	Level ID
04	Game mode
04	? (0)
01	? (1, 3)
04	? (2 ³² - 1)
##	Demo (1 Byte/Frame)

OBJECT IDS	
ID	Object
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	

TILE IDS	
ID	Tile
0	
1	
2-5	
6-9	
10-13	
14-17	
18-21	
22-25	
26-29	
30-33	

Final notes:

- For object orientation, the value 0 indicates looking East, and then it rotates clockwise until Northeast (7).
- For each group of 4 tiles, the first one is the pictured one, and each successive one is obtained by rotating it clockwise (for the first 4 groups), or by reflecting it horizontally and vertically (for the last 4 groups).

Thanks:

- Thanks to sidke and psenough for finding the required URLs for querying N++'s server.
- Thanks to ief015 and CoughSyrup for analyzing map data format, and Raif for analyzing attract and replay file formats.

Community:

- <https://discord.gg/nplusplus>
- <https://forum.drone.es/>

