clickhouse-client ClickHouse SQL shell

START HERE

clickhouse-client -h <host> -u <user> --password
Connect and ask for password

clickhouse-client -q "<sql>"
Run one query

SHOW TABLES
List tables

DESCRIBE TABLE <table>
Show columns

<query> \G
Vertical output

clickhouse-client -m
Multiline mode

--format CSVWithNames
Pick output format

Ctrl+D
Quit

Connect flags, string, config → **Query** REPL, -q, stdin, file → **Result** Pretty or --format → **Output** terminal, pager, file

CONCEPTS

Interactive mode runs a query on Enter without a semicolon; batch mode (-q, stdin, --queries-file) runs and exits. The client speaks the native TCP protocol, not HTTP.

Defaults differ by mode: PrettyCompact in the REPL, TabSeparated in batch mode. Set --format or a FORMAT clause when scripting.

Missing credentials fall back to CLICKHOUSE_USER, CLICKHOUSE_PASSWORD and CLICKHOUSE_HOST; flags and a connection string win over them.

CONNECT

clickhouse-client
Connect to localhost:9000 as default

clickhouse-client -h <host> --port <port> -u <user> --password <pw>
Connect with explicit options
Omit the value after --password to be prompted.

clickhouse-client clickhouse://<user>@<host>:<port>/<db>
Connect with a connection string
Must be the first argument; combine with other flags except --host and --port.

clickhouse-client -s --port 9440
Force a TLS connection
Without --port and --secure both 9440 and 9000 are tried.

clickhouse-client -d <db>
Start in a database

clickhouse-client --connection <name>
Use a saved connection from config

clickhouse-client clickhouse://<h1>,<h2>
Try several hosts in order

clickhouse-client clickhouse://<user>:@<host>
Prompt for the password

clickhouse-client -V
Print the client version

CONNECT (cont.)

clickhouse-client --help --verbose
List all options including settings

INSPECT

SHOW DATABASES
List databases
Alias: \l

SHOW TABLES
List tables in the current database
Alias: \d. Also \d FROM <db> or \d LIKE '<pat>'.

DESCRIBE TABLE <table>
Show a table's columns
Alias: \d <table>

USE <db>
Switch database
Alias: \c <db>

SHOW CREATE TABLE <table>
Show the table DDL

help <name>
Docs for a function, engine or setting
Also /help <name> and /man <name>.

SELECT currentDatabase()
Which database am I in?

SELECT version()
Server version

SELECT * FROM system.tables WHERE database = '<db>'
Table metadata

SELECT * FROM system.processes
Running queries

SELECT * FROM system.settings WHERE name LIKE '%<x>%'
Find a setting

RUN QUERIES

clickhouse-client -q "<sql>"
Run a query and exit

clickhouse-client "<sql>"
Query without --query

echo "<sql>" | clickhouse-client
Query from stdin

clickhouse-client --queries-file <file.sql>
Run queries from a file
Repeatable; cannot be combined with --query.

RUN QUERIES (cont.)

clickhouse-client -q "<sql1>; <sql2>;"
Several queries at once
INSERT with a non-VALUES format must be followed by an empty line.

clickhouse-client -q "<sql>" -q "<sql2>"
Repeat --query

clickhouse-client --ignore-error --queries-file <file>
Keep going after a failed query
Exit code stays 0 even when some queries failed.

clickhouse-client -m
Multiline: send only at ;

\<Enter>
Continue a query on the next line
Backslash before the line break in the default mode.

clickhouse-client --max_threads <n>
Pass a query setting

SET <setting> = <value>
Change a setting in the session

PARAMETERS

--param_<name>=<value>
Set a query parameter
Use {name:Type} in the query.

{<name>:<Type>}
Typed placeholder in SQL
Example: {id:UInt32}

{<name>:Identifier}
Parameterise table or column names

SET param_<name> = '<value>'
Set a parameter in the REPL

OUTPUT

--format <format>
Choose the output format
Shorthand -f. Any ClickHouse output format works.

--format CSVWithNames
CSV with a header row

--format TabSeparatedWithNames
TSV with a header row

--format JSONEachRow
One JSON object per line

--format Vertical
One value per line

OUTPUT (cont.)

-E
Same as --format Vertical
Alias --vertical.

... FORMAT <format>
Set the format inside the query

<query> \G
Vertical output for one query

--pager 'less -S'
Page wide results

--progress off
Hide the progress display

IMPORT & EXPORT

clickhouse-client -q "INSERT INTO <table> FORMAT CSV" < <file>
Load a CSV file

clickhouse-client -q "INSERT INTO <table> FORMAT CSVWithNames" < <file>
Load CSV with a header

clickhouse-client -q "INSERT INTO <table> FORMAT JSONEachRow" < <file>
Load NDJSON

<cmd> | clickhouse-client -q "INSERT INTO <table> FORMAT <f>"
Stream data in from a pipe

clickhouse-client -q "<select>" --format CSVWithNames > <file>
Export a query to CSV

clickhouse-client -q "<select>" --format JSONEachRow | jq .
Pipe JSON to jq

INTERACTIVE

Ctrl+D
Quit the client
Also exit, quit, q or :q.

Ctrl+C
Cancel the running query
A second press exits the client.

Ctrl+R
Fuzzy history search

Alt+Shift+E
Edit the query in $EDITOR
vim by default.

.
Repeat the last query
A lone / does the same.

/clear
Clear the terminal