Mosquitto MQTT broker and clients

Publisher mosquitto_pub → `topic + payload` → **Broker** mosquitto → `matching filters` → **Subscriber** mosquitto_sub

CONCEPTS

Clients never talk to each other: publishers and subscribers meet at a topic on the broker.

Topic wildcards

Filter	Matches
`+`	exactly one level: a/+/c
`#`	all remaining levels, last only: a/#
`$SYS/#`	broker stats; not matched by a lone #

Quote '#' and '$SYS' in the shell, or it expands or becomes a comment.

PUBLISH

`mosquitto_pub -t <topic> -m <msg>`
Publish one message

`mosquitto_pub -t <topic> -f <file>`
Send a file as the payload

`mosquitto_pub -t <topic> -s < <file>`
Send all of stdin as one message

`<cmd> | mosquitto_pub -t <topic> -l`
Send each stdin line as a message

`mosquitto_pub -t <topic> -n`
Send an empty payload

PUBLISH (cont.)

`mosquitto_pub -r -t <topic> -m <msg>`
Retain message on the broker

`mosquitto_pub -q <0|1|2> -t <topic> -m <msg>`
Set delivery guarantee

SUBSCRIBE

`mosquitto_sub -t <topic>`
Print each payload

`mosquitto_sub -v -t <topic>`
Prefix payloads with the topic

`mosquitto_sub -t <a> -t <b>`
Subscribe to several filters

`mosquitto_sub -q <0|1|2> -t <topic>`
Set subscription QoS

`mosquitto_sub -C <n> -t <topic>`
Exit after n messages

`mosquitto_sub -W <s> -t <topic>`
Exit after s seconds

`mosquitto_sub -R -t <topic>`
Skip retained messages

SUBSCRIBE (cont.)

`mosquitto_sub --retained-only -t <topic>`
Only retained messages, then exit

`mosquitto_sub -T <topic> -t <filter>`
Hide matching topics from output

`mosquitto_sub -F "%t %p" -t <topic>`
Custom output format

`mosquitto_sub -t <topic> --remove-retained --retained-only`
Delete retained messages

CONNECTION & AUTH

`-h <host> -p <port>`
Broker address (localhost:1883)

`-u <user> -P <password>`
Username and password

`-i <id>`
Fixed client ID

`-L mqtt://<url>`
Everything in one URL

`-V <5|311|31>`
MQTT protocol version

`-c -i <id>`
Persistent session

CONNECTION & AUTH (cont.)

`--ws`
Connect over WebSockets

`-d`
Print protocol debug output

`--will-topic <topic> --will-payload <msg>`
Last will on unexpected disconnect

TLS

`--cafile <ca.pem>`
Trust this CA certificate

`--cert <cert.pem> --key <key.pem>`
Client certificate login

`--tls-use-os-certs`
Trust the system CA store

`--insecure`
Skip hostname check, testing only

USERS & PASSWORDS

`mosquitto_passwd -c <file> <user>`
Create file with a user

`mosquitto_passwd <file> <user>`
Add a user or change password

USERS & PASSWORDS (cont.)

`mosquitto_passwd -b <file> <user> <password>`
Set password non-interactively

`mosquitto_passwd -D <file> <user>`
Delete a user

Point password_file at the file in mosquitto.conf and set allow_anonymous false; the broker needs a reload (SIGHUP) for changes.

RECIPES

Watch broker status

```
mosquitto_sub -v -t '$SYS/broker/#'
```

Authenticated TLS publish

```
mosquitto_pub -h <host> -p 8883 --cafile ca.pem \
  -u <user> -P <pw> -t home/door -m open
```

Capture one reading

```
mosquitto_sub -t sensors/+/temp -C 1 -W 10
```

Retained status with last will

```
mosquitto_pub -r -t dev/<id>/status -m online \
  --will-topic dev/<id>/status --will-payload \
offline --will-retain
```