grpcurl curl for gRPC

CONCEPTS

Flags must come before the address and method; the address goes first, then list, describe or the method name.

grpcurl flags + JSON
↓ HTTP/2
gRPC server host:port
↓ schema from
Reflection or -proto / -protoset

Without -plaintext grpcurl uses TLS; a plain server then fails the handshake. Reflection must be enabled on the server, or give a schema file.

Requests and responses are JSON by default; -format text switches to protobuf text format.

DISCOVER

grpcurl *<host:port>* **list**
List services via reflection

grpcurl *<host:port>* **list** *<service>*
List a service's methods

grpcurl *<host:port>* **describe**
Describe every service

grpcurl *<host:port>* **describe** *<service>*
Describe a service

grpcurl *<host:port>* **describe** *<service>*.*<method>*
Describe one method

grpcurl *<host:port>* **describe** *<message>*
Describe a message type

grpcurl -msg-template *<host:port>* **describe** *<message>*
Show a JSON template for a message

grpcurl -protoset *<file>* **list**
List from a descriptor set

grpcurl -import-path *<dir>* **-proto** *<file>* **list**
List from a .proto file

CALL

grpcurl *<host:port>* *<service>*/*<method>*
Call with an empty request

grpcurl -d '*<json>*' *<host:port>* *<service>*/*<method>*
Call with a JSON body

grpcurl -d @ *<host:port>* *<service>*/*<method>*
Read the body from stdin

grpcurl -format text -d '*<text>*' *<host:port>* *<service>*/*<method>*
Use protobuf text format

grpcurl -emit-defaults ...
Print zero-valued fields

grpcurl -allow-unknown-fields ...
Ignore unknown request fields

grpcurl -max-time *<secs>* ...
Limit total time

grpcurl -connect-timeout *<secs>* ...
Limit connect time

grpcurl -version
Print the version

CONNECTION AND TLS

grpcurl -plaintext *<host:port>* ...
Connect without TLS

grpcurl -insecure *<host:port>* ...
Skip server cert verification

grpcurl -cacert *<file>* *<host:port>* ...
Trust a custom CA

grpcurl -cert *<file>* **-key** *<file>* *<host:port>* ...
Present a client certificate (mTLS)

grpcurl -authority *<name>* ...
Set :authority and TLS name

METADATA

grpcurl -H '*<name>*: *<value>*' ...
Send a header (repeatable)

METADATA (cont.)

grpcurl -rpc-header '*<name>*: *<value>*' ...
Header for the call only

grpcurl -expand-headers -H 'authorization: Bearer ${TOKEN}' ...
Expand env vars in headers

grpcurl -v ...
Show headers, trailers and details

grpcurl -vv ...
Also show timing data

SCHEMA SOURCES

grpcurl -proto *<file>* **-import-path** *<dir>* ...
Use .proto source (repeatable)

grpcurl -protoset *<file>* ...
Use a compiled descriptor set

grpcurl -protoset-out *<file>* *<host:port>* **describe** *<service>*
Save a descriptor set

protoc --descriptor_set_out=*<file>* **--include_imports** *<proto>*
Build a protoset with protoc

RECIPES

Explore an unknown plaintext server

```
grpcurl -plaintext localhost:50051 list
grpcurl -plaintext localhost:50051 list my.pkg.Greeter
grpcurl -plaintext localhost:50051 describe my.pkg.HelloRequest
```

Authenticated call over TLS

```
grpcurl -H "authorization: Bearer $TOKEN" \
  -d '{"name":"world"}' \
  api.example.com:443 my.pkg.Greeter/SayHello
```

Pipe a response through jq

```
grpcurl -plaintext -d '{"id":1}' localhost:50051 \
  my.pkg.Items/Get | jq '.name'
```

Call from a local .proto with a JSON file

```
grpcurl -import-path ./protos -proto items.proto \
  -d @ localhost:50051 my.pkg.Items/Create < req.json
```