promtool Prometheus CLI toolkit

CONCEPTS

promtool ships in the Prometheus release tarball and works offline on files; only query, push and debug talk to a server.

Write rules rules.yml
↓ `check rules`
Unit test tests.yml
↓ `test rules`
Check config prometheus.yml
↓ `reload`
Live server query to verify

Typical rule workflow

Exit code 0 means ok, 1 an error, and 3 a lint finding when --lint-fatal is set, so every check fits a CI step.

CHECK

`promtool` **`check config`** *`<file>`*
Validate config and referenced rule files

`promtool` **`check rules`** *`<rules.yml>`*
Validate rule files

`promtool` **`check config --syntax-only`** *`<file>`*
Skip referenced files

`promtool` **`check rules --lint=all`** *`<rules.yml>`*
Enable all lint checks

`promtool` **`check config --lint-fatal`** *`<file>`*
Exit 3 on lint findings

`promtool` **`check web-config`** *`<file>`*
Validate the web config (TLS/auth)

`promtool` **`check service-discovery`** *`<file> <job>`*
Show targets after relabeling

`promtool` **`check metrics`** *`< <file>`*
Lint metric names and types from stdin

`promtool` **`check healthy --url=`***`<url>`*
Is the server healthy?

TEST RULES

`promtool` **`test rules`** *`<tests.yml>`*
Run rule unit tests

Test file keys

Key	Purpose
`rule_files`	Rule files under test
`evaluation_interval`	Rule eval step (default 1m)
`tests[].interval`	Sample step for input_series
`input_series`	series + values pairs
`alert_rule_test`	eval_time, alertname, exp_alerts
`promql_expr_test`	expr, eval_time, exp_samples

Series value notation

Value	Means
`1+2x3`	1 3 5 7 (start, step, count)
`5x3`	5 5 5 5
`_`	missing sample
`stale`	stale marker
`_x3`	three gaps

QUERY A SERVER

`promtool` **`query instant`** *`<url>`* **`'`***`<expr>`***`'`**
Run an instant query

`promtool` **`query range`** *`<url>`* **`'`***`<expr>`***`' --start=`***`<t>`*** **`--end=`***`<t>`*** **`--step=1m`**
Run a range query

TSDB

`promtool` **`tsdb list`** *`<dir>`*
List blocks in a data dir

`promtool` **`tsdb analyze`** *`<dir>`*
Cardinality and churn report

PUSH, DEBUG, PROMQL

`promtool` **`--version`**
Print the version

`promtool` **`--help`**
List all commands