

# taplint **TAP** service validator

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# taplint

## Usage:

- Point it at a TAP URL, it runs tests and tells you what's not compliant or looks questionable
- You can run it from the command line, output to stdout
  - ▷ Just requires Java and [stilts.jar](#) (`java -jar stilts.jar taplint tapurl=http://example.com/tap`)
- It is also the basis of TAP validation provided by other services (there's currently only one TAP validator)
  - ▷ These may use older taplint versions

## Functionality:

- Tries to test lots of things, including many protocols
  - ▷ TAP, UWS, VODataService, ADQL, VOResource, VOSI, TAPRegExt, DALI, VOTable, ObsCore, ObsLocTAP, HTTP, ...
- ... but can't test everything
- Reports Error and Warning messages for incorrect/suspicious behaviour
- Reports Info messages to summarise service behaviour and tests run

# Example

This is STILTS taplint, 3.4/308a680 (2021-01-11)

Static report types: ERROR(141), WARNING(57), INFO(25), SUMMARY(9), FAILURE(23)

Section TMV: Validate table metadata against XML schema

I-TMV-VURL-1 Validating http://vlkb.neanias.eu:8080/vlkb/tap/tables as tableset (http://www.ivoa.net/xml/VODataService/v1.1)

E-TMV-BBUE-1 (1.295, c.56): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the value must be valid.

E-TMV-BBUE-2 (1.1876, c.56): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the value must be valid.

E-TMV-BBUE-3 (1.1892, c.56): cvc-complex-type.2.2: Element 'dataType' must have no element [children], and the value must be valid.

E-TMV-BBUE-x (27 more)

S-TMV-VALI-1 SAX report: warnings 0, errors 60, fatal 0

Section TME: Check content of tables metadata from /tables

I-TME-CURL-1 Reading capability metadata from http://vlkb.neanias.eu:8080/vlkb/tap/capabilities

I-TME-TURL-1 Reading table metadata from http://vlkb.neanias.eu:8080/vlkb/tap/tables

E-TME-CRSV-1 Column name is ADQL reserved word 'distance' in table compactsources.sed\_view\_final - should delimit like '"distance"'

E-TME-CRSV-2 Column name is ADQL reserved word 'area' in table filaments.branches - should delimit like '"area"'

- ...
- Messages are structured (grep-friendly) 1-line reports with format **T-SSS-MMMM-N aaaaa:**

**T** : 1-character status: [E]rror/[W]arning/[I]nfo/[S]ummary/[F]ailure

**SSS** : 3-character reporting stage identifier

**MMMM** : 4-character code for exact message type

**N** : repeat count for repeated **T-SSS-MMMM**

**aaaaa:** free-form text giving all available detail

- Output intended to be read by humans
- Manageable length (repeated messages filtered out)
- *Tries* to give as much info as possible
- Logs queries as well as reporting errors where possible/practical to aid reproducibility
- Options available for truncating long lines, filtering messages, restricting tests, JSON output, etc

## Test stages performed:

- TMV:** Validate /tables endpoint against VODataService schema
- TME:** Check content /tables endpoint for consistency
- TMS:** Check form and content of TAP\_SCHEMA tables
- TMC:** Compare table metadata from /tables and TAP\_SCHEMA
- CPV:** Validate /capabilities endpoint against TAPRegExt schema
- CAP:** Check content of /capabilities endpoint
- AVV:** Validate /availability endpoint against VOSI schema
- QGE:** Make example ADQL queries in sync GET mode
- QPO:** Make example ADQL queries in sync POST mode
- QAS:** Make example ADQL queries in async mode
- UWS:** Test asynchronous UWS/TAP behaviour
- MDQ:** Check table query result columns against declared metadata
- OBS:** ObsCoreDM data model
- LOC:** ObsLocTAP data model
- UPL:** Make example queries with table uploads
- EXA:** Examples document

# Capabilities

## Strengths:

- Tests all columns in all tables
- Metadata tests (consistency between TAP\_SCHEMA & /tables endpoint, ObsCore & ObsLocTAP DMs)
- Job submission tests (synchronous, asynchronous, UWS job control)
- Basic ADQL syntax and semantics (select columns, see if they are present and correct)
- TAPRegExt record tested if present
- Output VOTable syntax checked carefully (`votlint`)

## Weaknesses:

- Not very complicated ADQL queries
- Tests only service, not registration
- Can't be comprehensive
- Documentation/messages sometimes incomplete or inscrutable
- No doubt has bugs!

# Availability

- Download:

stable: <http://www.starlink.ac.uk/stilts/>

latest: <ftp://andromeda.star.bris.ac.uk/pub/star/stilts/pre/stilts.jar>

- Documentation:

STILTS manual: <http://www.starlink.ac.uk/stilts/sun256/taplint.html>

(but some output may require explanation from me, or examining the [source code](#))

- Support

- Questions always welcome by email: [m.b.taylor@bristol.ac.uk](mailto:m.b.taylor@bristol.ac.uk)
- Updates/improvements/bugfixes will be made as required between STILTS releases
- Find me this meeting (e.g. [gather.town](#)) and I'll help run it on your service!