

VOTable Future

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Outline

- Issue
- History
- Favoured solutions
- Suggested roadmap

Issue

Representing NULLs when writing VOTables is a bit tricky.

- Summary:
 - ▷ **Integer columns:** “magic” bad value must be specified up front
`<FIELD datatype="short" name="COUNT"><VALUES null="-32768"/></FIELD>`
 - ▷ **Float columns:** Null and NaN not distinguished
 - ▷ **Array columns:** Null and empty array not distinguished
- Context:
 - ▷ It's a subtle point
 - Capability of VOTable to represent null values is not in question
 - Existing numeric model has served VOTable for 8+ years, FITS BINTABLE for 20+ years
 - ▷ It's come up now because of TAP
 - ▷ Various minority views have come up during discussion
 - ▷ More technical detail available on request
([Pune presentations](#), [Pune conclusion](#), [Euro-VO intro](#), [Euro-VO conclusion](#))
 - ▷ Any changes should be cautious
 - VOTable is widely used
 - VOTable WG is dormant
 - ▷ Boring but (maybe?) important

History

- Summer 2011
 - Raised on DAL list + [VOTableIssues](#) wiki page (Tom McGlynn, Markus Demleitner, me)
- Pune Interop Oct 2011
 - Raised at TCG
 - Special Apps splinter session scheduled
 - Some discussion (Markus, Pat, me, ..) and suggested solution
- Post-Pune Oct 2011
 - Posted [summary and call for comments](#) on Interop list
 - ... no response
- Euro-VO May 2012:
 - Discussions, more thought → suggestions
- This week May 2012:
 - 1/2 plenary session scheduled for discussion (Monday 14:00)

Favoured Solutions

- Fixes:

- A: TABLEDATA fix:

- ▷ Empty `<TD/>` element means NULL
 - **Integer columns:** currently illegal
 - **Floating point columns:** currently means NaN
 - ▷ Low impact; very little code change required

- B: BINARY fix:

- ▷ Introduce new BINARY-like format BINARY2, with per-cell NULL-ness bit flag
 - ▷ Changes (new `serialization` parameter) to VOTable MIME type (to ensure unprepared clients do not receive BINARY2 if they can't parse it)
 - ▷ Medium impact: I/O toolkits need new functionality, existing software unable to read new format tables

- These solve the pressing problems for writing nulls in their respective encodings

- Sensible options:

- Do nothing
 - A only (if TABLEDATA is sufficient)
 - A+B (if data providers/consumers actually care about BINARY-like formats)

VOTable Roadmap

My suggestion:

- At plenary 1/2 session Monday:
 - ▷ Outline the issue in simplified form
 - ▷ Present suggested solutions already proposed with pros and cons:
 - TABLEDATA: permit empty `<TD/>` elements meaning NULL?
 - BINARY: new BINARY2 format with per-cell NULL flag?
 - ▷ Poll data providers/consumers on their requirements:
 - Is there a problem that needs fixing?
 - Do providers/consumers actually need/want fix in BINARY formats?
 - ▷ Depending on that, **propose solution** (→ VOTable 1.3, or not)
 - ▷ Keep it simple (session is quite short, there has already been opportunity for input):
 - *Do not* attempt to cover minute technical details and implications
 - *Do not* present every previously suggested rejected or minority proposal
 - *Do not* encourage open season on VOTable suggestions/gripes
- Following Interop:
 - ▷ Present **proposed solution** on `interop@ivoa.net` list
 - ▷ If no substantial objections, I will draft/submit VOTable 1.3 through Apps WG

TCG agree/disagree?