

An Archive in the VOSphere

Experimenting with VOVIEW and SAMP

Data Providers mind User Experience

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VOVIEW

ESO Archive: still using the WDB (1994) query engine
which allows html, ascii, and (2006) votable output

How to improve user experience on result page?

VOVIEW greatly improves the user experience:

- Client-side moving, hiding, selecting, sorting columns
- Client-side pagination
- Client-side filtering (via XSLT)

VOVIEW: proved very easy to integrate with WDB

VOVIEW (2)

- Typical VOVIEW criticisms:
 - Entire votable downloaded first
 - Not good to support millions of records
 - Better to paginate on the server side
- Answers:
 - Browsing archival data (not catalogs) is a different thing.
 - Nobody wants to browse/visualise/sort/etc. 100,000+ product records (no scientific analysis involved)
 - Browsing up to ~10-20,000 records seems reasonable
 - Archive requirement is to handle max 50,000 records
 - VOVIEW handles up to 50/100,000 records very efficiently

SAMP

- Extremely easy to plug in and use
 - once you have the VOTable required by voview
- Astronomers benefit interoperability:
 - Improved **visualisation, interactivity**
 - E.g., display of footprints onto all-sky surveys (Aladin), overlay other catalogs, etc.
 - **Selection** of data products in VO apps (TOPCAT, Aladin, VOPlot, etc) result into records marked for **data retrieval** in the VOVIEW web browser.

A nice archive paradigm

- Clear and clean separation on what the archive developers should do, and what they shouldn't
- **Archive focuses on providing** the necessary **metadata** in the usual way (browsers)
 - Votable: observation metadata, preview images, footprints
- **High level functionalities are left to SAMP-aware tools**
 - Table manipulation (voview), visualisation, overlay, inspection, cross-matching, etc. (topcat, aladin, voplot, etc).
- **Astronomers can choose** the tools they like the most
- **Improved user experience**

A little experiment

I used:

- JSAMP ([M.Taylor](#)) with web profile activated
- Some javascript ([T.Boch](#)) for SAMP callback functions
- VOVIEW ([D.Hinshaw](#))
- VOVIEW installation, smart hints, help, discussions ([F.Stoehr](#))
- JQuery to visualise/mark for retrieval records in VOVIEW
- In no time, I was up and running ([thanks to all](#)).

An Archive in the VOSphere

The screenshot displays the SAMP Hub interface, which is a virtual observatory system. The main window shows the ESO Science Archive - Data Products page, which includes a search bar and a table of results. The table lists data products with columns for project_title, prog_id, filter_grism, RA, DEC, and tel. The results are sorted by project_title.

The 'Table Browser' window shows a zoomed-in view of the data products table, with columns for project..., phase3..., prog_id, target, RA, DEC, tel_id, ins_id, and ge. The table contains 15 rows of data.

The 'Table Browser for 2' window shows a zoomed-in view of the data products table, with columns for project title, phase3 c..., prog id, and tar. The table contains 8 rows of data.

The 'Terminal' window shows the command: `java -jar jsamp-1.3.jar hub -profiles std,web ;`

The main table of results is as follows:

checkbox	project_title	prog_id	filter_grism	RA	DEC	tel
<input type="checkbox"/>	VMC	179.B-2003(B)	J	05:36:37.69	-69:16:48.8	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	Y	05:38:41.41	-69:16:43.9	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	Ks	05:38:41.41	-69:16:43.9	ESO-V
<input checked="" type="checkbox"/>	VMC	179.B-2003(B)	J	06:00:23.11	-66:25:24.7	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	J	05:38:43.13	-69:27:44.7	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	J	05:38:41.41	-69:16:43.9	ESO-V
<input checked="" type="checkbox"/>	VMC	179.B-2003(B)	J	05:59:28.21	-66:25:57.1	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	Y	05:37:40.21	-69:27:47.9	ESO-V
<input type="checkbox"/>	VMC	179.B-2003(B)	YJKs	05:37:37.9	-69:22:20.5	ESO-V
<input checked="" type="checkbox"/>	VMC	179.B-2003(B)	Y	05:58:33.69	-66:26:28.2	ESO-V

Sub-optimal user experience

- Astronomers have to launch JSAMP
 - Should I use WebSampConnector instead?
- Same UI action in different apps results into different SAMP messages:
 - confusing to astronomers
 - complex for archive developers

User action	TOPCAT	ALADIN
Mouse hovering	None	Table.highlight.row
Click	Table.highlight.row	Table.select.rowList
Drag-a-box, create-a-subset	Table.select.rowList	Table.select.rowList

Conclusions

VOVIEW

- There is definitely room for VOVIEW in the VO world
- Easy to integrate with custom archive solutions
- Improved archive user experience
- Suggestion: integration with SAMP would be quite useful
- Plea: please do not drop VOVIEW development!

SAMP

It would seem useful if:

- All VO apps by default activate a web-profile hub
- Same UI actions in different apps send same messages