

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](#)), installation and smart hints provided by [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

SAMP Hub

File Clients Profiles

Clients

- Hub
- topcat
- Aladin
- WDBResults

Registrat

Public ID

Profile: In

Metadata

samp.nam

Hub

samp.des

org.

samo.ico

Subscrip

samp.app

Disconnect from SAMP

Broadcast results table

ESO Science Archive - Data

Results 1-10 of 100 (100 before filtering) sorted by project_title

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

1-10 of 100 (100 before filtering) sorted by project_title Show 10 results

TOPCAT(2): Table Browser

Table Browser for 2: ESO Science Archive - Data Products - Query Resu...

project...	phase3...	prog_id	target	RA	DEC	tel_id	ins_id	ge	
1	VMC	VMC	179.B-2003(B)	LMC	84.15703	-69.28021	ESO-VISTA	VIRCAM	IN
2	VMC	VMC	179.B-2003(B)	LMC	84.6725	-69.27886	ESO-VISTA	VIRCAM	IN
3	VMC	VMC	179.B-2003(B)	LMC	84.6725	-69.27886	ESO-VISTA	VIRCAM	IN
4	VMC	VMC	179.B-2003(B)	LMC	90.09625	-66.4235	ESO-VISTA	VIRCAM	IN
5	VMC	VMC	179.B-2003(B)	LMC	84.67967	-69.46241	ESO-VISTA	VIRCAM	IN
6	VMC	VMC	179.B-2003(B)	LMC	84.6725	-69.27886	ESO-VISTA	VIRCAM	IN
7	VMC	VMC	179.B-2003(B)	LMC	89.86751	-66.4325	ESO-VISTA	VIRCAM	IN
8	VMC	VMC	179.B-2003(B)	LMC	84.41752	-69.46329	ESO-VISTA	VIRCAM	IN
9	VMC	VMC	179.B-2003(B)	LMC	84.40792	-69.37236	ESO-VISTA	VIRCAM	IN
10	VMC	VMC	179.B-2003(B)	LMC	89.64036	-66.44114	ESO-VISTA	VIRCAM	IN
11	VMC	VMC	179.B-2003(B)	LMC	84.67967	-69.46241	ESO-VISTA	VIRCAM	IN
12	VMC	VMC	179.B-2003(B)	LMC	84.67967	-69.46241	ESO-VISTA	VIRCAM	IN
13	VMC	VMC	179.B-2003(D)	LMC	5.97602	-66.44114	ESO-VISTA	VIRCAM	IN
14	VMC	VMC	179.B-2003(B)	LMC	5.61051	-69.46378	ESO-VISTA	VIRCAM	IN
15	VMC	VMC	179.B-2003(B)	LMC	90.04983	-66.24087	ESO-VISTA	VIRCAM	IN

pan zoom crop WDBTabl ZMASS IRAS-IR05

1x

Frame: ICRS

30'

3.417° x 2.584°

57:54.63 -66:37:10.7

3.417° x 2.584°

Search

project title	phase3 c...	prog id	target
VMC	VMC	179.B-2003(B)	LMC
VMC	VMC	179.B-2003(B)	LMC
VMC	VMC	179.B-2003(C)	LMC
VMC	VMC	179.B-2003(B)	LMC
VMC	VMC	179.B-2003(D)	LMC
VMC	VMC	179.B-2003(B)	LMC
VMC	VMC	179.B-2003(D)	LMC

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12 sel / 8356 src 133Mb

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