

Registering EPN-TAP services with DACHS

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EPN-TAP service

- VO server (DaCHS)
- Resource Descriptor (RD) – xml-like
 - in `/var/gavo/inputs/{service_name}`
 - Metadata of the service
 - Define columns (EPN-TAP standards)
 - Mapping
- Import the service
- Register the service

Define meta elements of the EPN-TAP service

Resource descriptor meta elements

```
<resource schema="planets">
  <!-- First of all change schema name (must = project name) -->

  <!-- Update next 3 with relevant info -->
  <meta name="title">Characteristics of Planets (demo)</meta>
  <meta name="description" format="plain">
  Main characteristics of planets. Data are included in the table, therefore most relevant parameter
  <meta name="creationDate">2015-08-16T09:42:00Z</meta>

  <!-- General keywords for the registry - from IAU Thesaurus if possible-->
  <meta name="subject">solar-system-astronomy</meta>
  <meta name="subject">planetary-science</meta>
  <meta name="subject">solar-system-planets</meta>
  <meta name="subject">periodic-orbit</meta>

  <!-- Service contact info -->
  <meta name="copyright">LESIA-0bs Paris</meta>
  <meta name="creator.name">Stephane Erard</meta>
  <meta name="publisher">Paris Astronomical Data Centre - LESIA</meta>
  <meta name="contact.name">Stephane Erard</meta>
  <meta name="contact.email">vo.paris@obspm.fr</meta>
  <meta name="contact.address">Observatoire de Paris VOPDC, bat. Perrault, 77 av. Denfert Rochereau,
  <!-- Replace with adequate biblio reference -->
  <meta name="source">2000asqu.book....C</meta>
  <meta name="contentLevel">General</meta>
  <meta name="contentLevel">University</meta>
  <meta name="contentLevel">Research</meta>
  <meta name="contentLevel">Amateur</meta>
```

To the registry



UAT Subjects

- No search by coordinates for solar system astronomy
 - Keywords
- <https://astrothesaurus.org/>
- Search by objects or concepts
(ex: Jupiter, atmospheric composition)

[Index](#) [Hierarchy](#) [Search](#)

[expand all](#) | [collapse all](#)

- ❖ Astrophysical processes
- ❖ Cosmology
- ❖ Exoplanet astronomy
- ❖ Galactic and extragalactic astronomy
- ❖ High energy astrophysics
- ❖ Interdisciplinary astronomy
- ❖ Interstellar medium
- ❖ Observational astronomy
- ❖ Solar physics
- ❖ Solar system astronomy
- ❖ Stellar astronomy

Publication of each EPN-TAP service

q.rd

```
...
<table id="epn_core" onDisk="True" adql="True">
  <mixin spatial_frame_type="body"
optional_columns="...">
    //epntap2#table-2_0
  </mixin>
  <publish sets="local,ivo_managed"/>
...
```

terminal

```
dachsroot$ dachs imp {service}/q
dachsroot$ dachs pub {service}/q
dachsroot$ dachs pub //services
dachsroot$ dachs pub //tap
#dachs serve restart
```

http://voparis-tap-planeto.obspm.fr/oai.xml?verb=ListIdentifiers&metadataPrefix=ivo_vor

Internal resources

Catalog service
with tap capability

Gathers from both q.rd
and defaultmeta

OAI PMH result of 2022-04-28T12:17:56Z

Request verb was ListIdentifiers

- <ivo://padc.obspm.helio/tap>
- ivo://padc.obspm.helio/_system_/services/registry
- <ivo://padc.obspm.helio>
- <ivo://padc.obspm.helio/hfc1t3/q/collection>
- ivo://padc.obspm.helio/hfc1t3/q/e pn_core
- ivo://padc.obspm.helio/hfc1ar/q/e pn_core
- ivo://padc.obspm.helio/bass2000/q/e pn_core

Each server is
declared as a
registry for its own
VO Resources

Naming authority
defaultmeta

Catalog
Resources
q.rd

[All identifiers defined here](#)

[Data Center Home](#)

Note : collection is deprecated

TAP Catalog service

Not mandatory

OAI PMH result of 2022-04-28T12:30:26Z

Request verb was GetRecord

<ivo://padc.obspm.helio/tap>

ri:Resource
title PADCC TAP Server on voparis-tap-helio.obspm.fr TAP service
shortName PADCC TAP
identifier ivo://padc.obspm.helio/tap
curator
publisher Paris Astronomical Data Centre
creator
name PADCC
logo http://voparis-srv-paris.obspm.fr/logos/PADCC_small.png
date 2021-11-26T11:12:24Z
contact
name PADCC support team
address 77 av. Denfert Rochereau, 75014 Paris, FRANCE
email vo.paris@obspm.fr
telephone 0033140512082
content
subject virtual-observatories
subject catalogs

...

tableset
schema
name bass2000
title BASS2000 Solar Survey Archive
description BASS2000 archives and distributes groundbased solar observations provided by various in
table
name bass2000.epn_core
description EPNcore table of BASS2000, a Solar survey archive: Images, movies of full Sun from gro
utype ivo://ivoa.net/std/epntap#table-2.0
column
name granule_uid
description Internal table row index, which must be unique within the table. Can be alphanumeric.
ucd meta.id
dataType char
column
name granule_gid
description Common to granules of same type (e.g. same map projection, or geometry data product

Naming authority

/var/gavo/etc/defaultmeta.txt

publisher: Paris Astronomical Data Centre
publisherID: ivo://padc.obspm
contact.name: PADCC support team
contact.address: 77 av. Denfert Rochereau, 75014 Paris, FRANCE
contact.email: vo.paris@obspm.fr
contact.telephone: 0033140512082
creator.name: PADCC
creator.logo: http://voparis-srv-paris.obspm.fr/logos/PADC_small.png
authority.creationDate: 2022-03-24T12:53:33
authority.title: Paris Astronomical Data Centre Authority
authority.shortName: PADCC
authority.description: The Paris Astronomical Data Centre project aims at providing VO access to its databases ressources ...
authority.referenceURL: vo-web.obspm.fr This Naming Authority is used to identify the resources prov ...
authority.referenceURL: <http://padc.obspm.fr>
authority.managingOrg: ivo://padc.obspm.helio
organization.title: Observatoire de Paris
organization.description: Founded in 1667, the Observatoire de Paris is the largest national research center for astronomy.
organization.referenceURL: <http://www.obspm.fr>
site.description: The Paris Astronomical Data Centre ...

OAI PMH result of 2022-04-28T12:09

Request verb was GetRecord

ivo://padc.obspm.helio

ri:Resource
title Paris Astronomical Data Centre Authority
shortName PADCC
identifier ivo://padc.obspm.helio
curation
publisher Paris Astronomical Data Centre
creator
name PADCC
logo http://voparis-srv-paris.obspm.fr/logos/PADC_small.png
date 2022-04-07T08:36:46Z
contact
name PADCC support team
address 77 av. Denfert Rochereau, 75014 Paris, FRANCE
email vo.paris@obspm.fr
telephone 0033140512082
content
subject Authority
description The Paris Astronomical Data Centre project aims at providing VO ac
referenceURL http://padc.obspm.fr
managingOrg Paris Astronomical Data Centre

[All identifiers defined here](#)

[Data Center Home](#)

Catalog Resources and local Registry

- Local Registry
 - Global information
- Catalog Resources
 - Definitions of the service, columns resource descriptor

Registry of registries

- Full searchable registries
 - Harvest



Registering Your Registry

Step 1: Validating the Harvesting Interface

Note that for a large registry, validation can take several minutes.

Enter the base URL for the OAI interface to your IVOA publishing registry:
This should be the HTTP GET version of your OAI interface.

Use built-in schemas (leave checked to register)

Summary of Results

A series of test queries were sent to the service:

Standard OAI-PMH compliance

(0 Recommendations, 0 Warnings, 0 Failures)

IVOA Profile on OAI-PMH compliance

(0 Recommendations, 0 Warnings, 0 Failures)

VOResource compliance

(22 Successes, 0 with Recommendations, 0 with Warnings, 0 with Failures)

Congratulations! Your registry is perfect!

Step 2: Register your Registry

Your registry is ready to be added to the Registry of Registries. Press the register button to complete the registration.

OAI Validation

IVOA Profile Validation

VOResource Validation

Standard OAI-PMH compliance

This series of queries tests compliance with the OAI-PMH standard. (This part of validation is courtesy of the OAI Explorer by Hussein Suleman.)

Failed Tests

None found.

Warnings

None found.

Recommendations

None found.

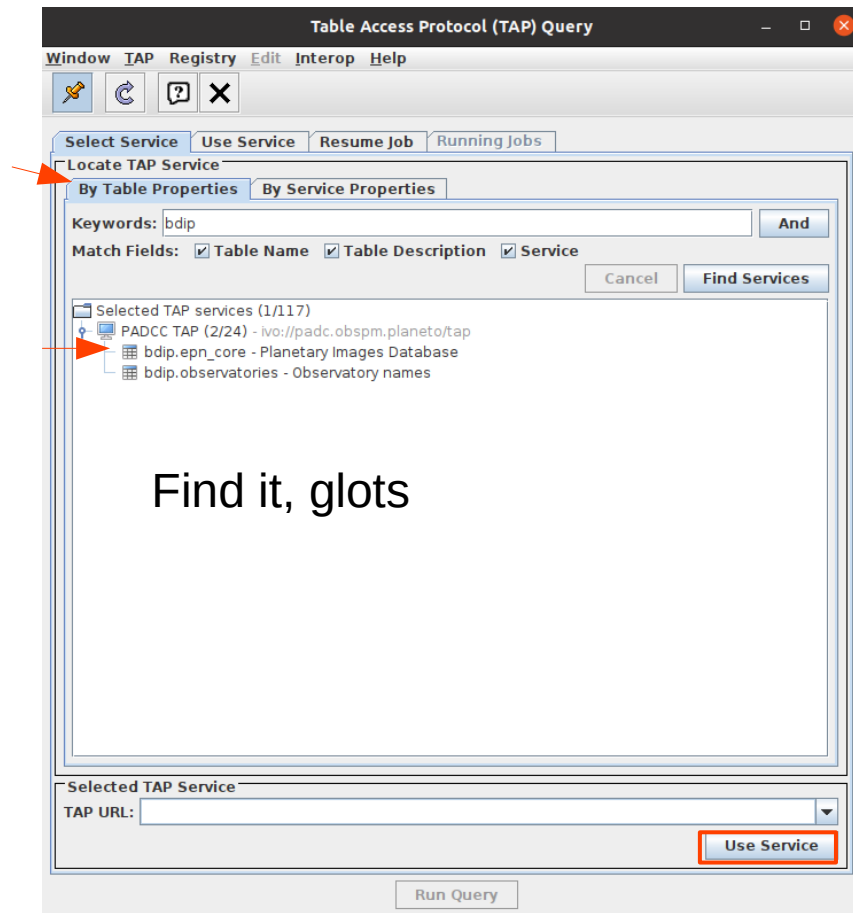
PADC DaCHS servers

DaCHS1 → DaCHS 2

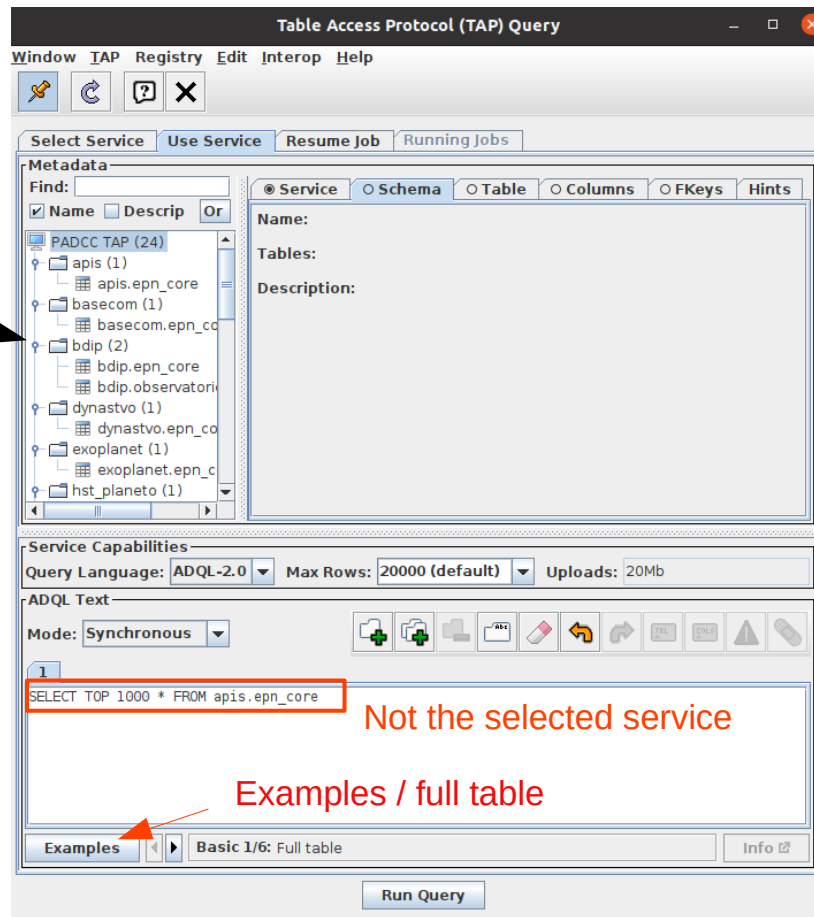
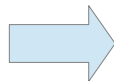
- Former services : inactive, services declaration
 - Defined into voparis-registry.obspm.fr : manually
 - Each service declaration contained the others → confusions
 - Now : defined automatically in each server and harvested
 - Simple, up to date
 - Can't define several times the same naming authority
 - IVOID naming authorities updated:
 - **Several servers**
 - padc.obspm.planeto
 - padc.obspm.helio
 - padc.obspm.maser
 - padc.obspm.astro
- common root
Same publisher id

Retrieve services

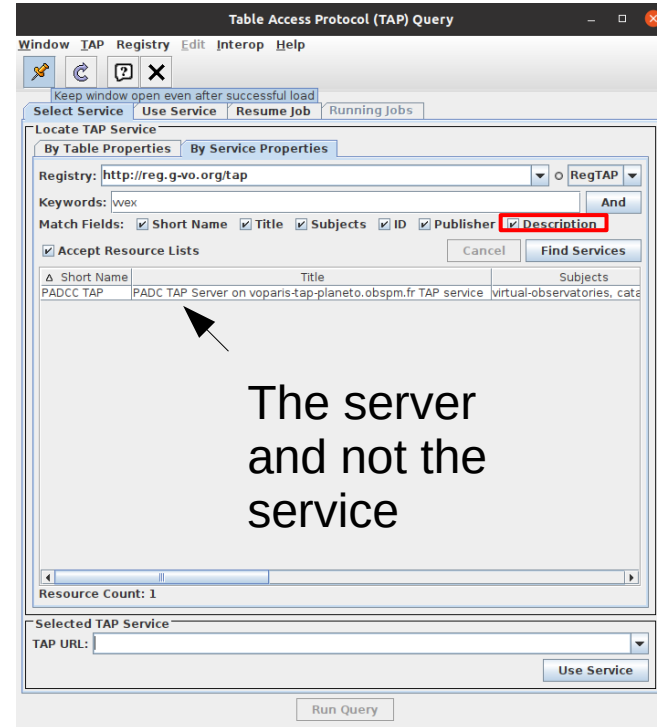
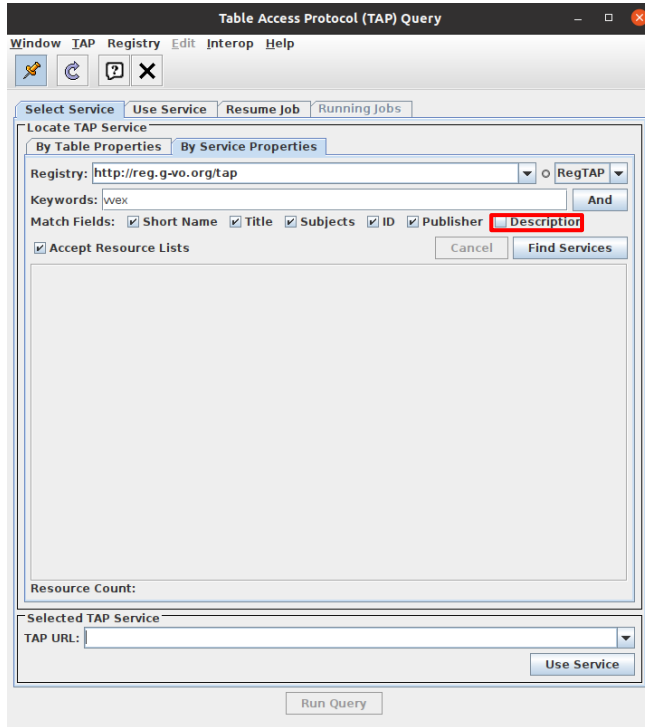
Topcat



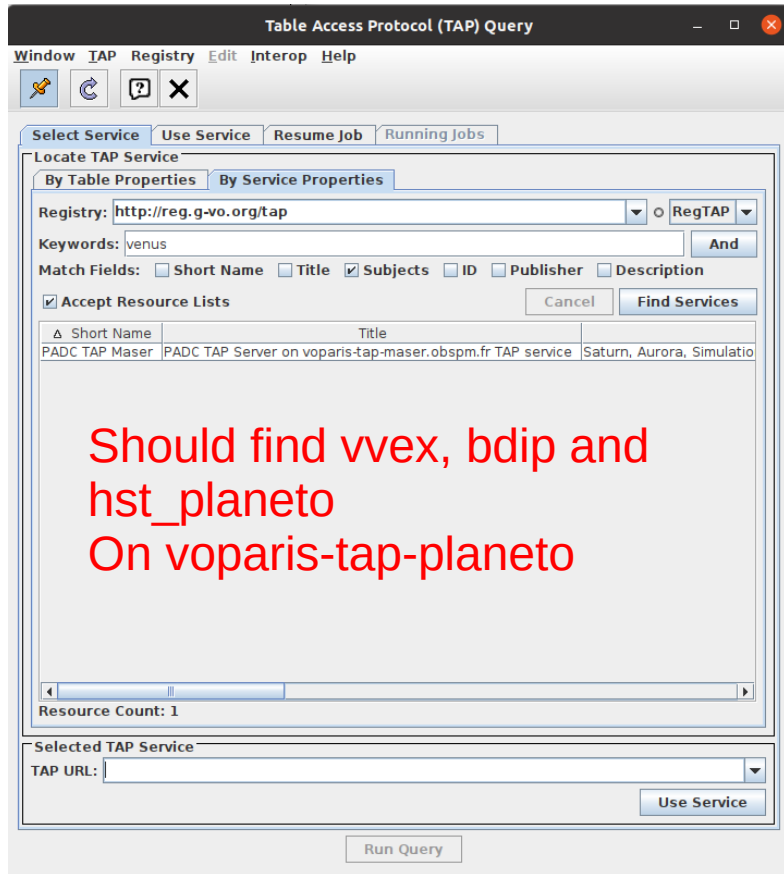
Not first



Topcat



Topcat



-beta -verbose

```
SELECT ivo_id, short_name, res_title, reference_url,  
base_role, role_name, email, intf_index, access_url,  
standard_id, cap_type, cap_description, std_version,  
res_subjects
```

```
FROM rr.resource AS res
```

```
NATURAL JOIN rr.interface
```

```
NATURAL JOIN rr.capability
```

```
NATURAL LEFT OUTER JOIN rr.res_role NATURAL  
LEFT OUTER JOIN
```

```
(SELECT ivo_id, ivo_string_agg(res_subject, ', ') AS  
res_subjects FROM rr.res_subject GROUP BY ivo_id) AS  
sbj
```

```
WHERE (base_role='contact' OR  
base_role='publisher' OR base_role IS NULL)
```

```
AND standard_id like 'ivo://ivoa.net/std/tap'
```

```
AND intf_role='std'
```

```
AND ((1=ivo_hasword(res_subjects, 'venus')))
```

Topcat

```
SELECT ivo_id, short_name, res_title, reference_url,  
base_role, role_name, email, intf_index, access_url,  
standard_id, cap_type, cap_description, std_version,  
res_subjects
```

```
FROM rr.resource AS res
```

```
NATURAL JOIN rr.interface
```

```
NATURAL JOIN rr.capability
```

```
NATURAL LEFT OUTER JOIN rr.res_role NATURAL  
LEFT OUTER JOIN
```

```
(SELECT ivo_id, ivo_string_agg(res_subject, ', ') AS  
res_subjects FROM rr.res_subject GROUP BY ivo_id) AS  
sbj
```

TOPCAT(4): Table Browser

Window Rows Help

Table Browser for 4: TAP_4 rr.resource,rr.interface,rr.capability,rr...

ivo_id	short_name	res_title	reference_url	base_role	role_name	email	intf_index	access_url	standard_id	cap_type	cap_description	std_version	res_subjects
66277	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	comet	solar-system-astronomy, planetary-sci...	...	comet, solar-system-astronomy, planetary-sci...
66278	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	comet	solar-system-astronomy, planetary-sci...	...	comet, solar-system-astronomy, planetary-sci...
66279	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	comet	solar-system-astronomy, planetary-sci...	...	comet, solar-system-astronomy, planetary-sci...
66280	ivo://padc.obspm.planeto/vvex/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	Venus	solar-system-astronomy, planetary-sci...	...	Venus, solar-system-astronomy, planetary-sci...
66281	ivo://padc.obspm.planeto/vvex/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	Venus	solar-system-astronomy, planetary-sci...	...	Venus, solar-system-astronomy, planetary-sci...
66282	ivo://padc.obspm.planeto/vvex/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	Venus	solar-system-astronomy, planetary-sci...	...	Venus, solar-system-astronomy, planetary-sci...
66283	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	solar-system-astronomy	planet, mass, radius...	...	solar-system-astronomy, planet, mass, radius...
66284	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	solar-system-astronomy	planet, mass, radius...	...	solar-system-astronomy, planet, mass, radius...
66285	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	...	...	ivo://ivoa.net/std/tap#aux	...	solar-system-astronomy	planet, mass, radius...	...	solar-system-astronomy, planet, mass, radius...
66286	ivo://cds.vizier/j/a+a/631/a90	...	...	3	...	...	...	ivo://ivoa.net/std/tap#aux	...	Radial velocity	Multiple stars, Exoplanets	...	Radial velocity, Multiple stars, Exoplanets
66287	ivo://cds.vizier/j/a+a/631/a90	...	...	3	...	...	...	ivo://ivoa.net/std/tap#aux	...	Radial velocity	Multiple stars, Exoplanets	...	Radial velocity, Multiple stars, Exoplanets

Total: 1 145 913 Visible: 1 145 913 Selected: 3

```
'contact' OR  
'er' OR base_role IS NULL))  
like 'ivo://ivoa.net/std/tap'  
rd(res_subjects, 'venus'))))
```


Topcat

DaCHS2

Catalog Resource

#aux

```
SELECT ivo_id, short_name, res_title, reference_url,  
base_role, role_name, email, intf_index, access_url,  
standard_id, cap_type, cap_description, std_version,  
res_subjects
```

```
FROM rr.resource AS res
```

```
NATURAL JOIN rr.interface
```

```
NATURAL JOIN rr.capability
```

```
NATURAL LEFT OUTER JOIN rr.res_role NATURAL  
LEFT OUTER JOIN
```

```
(SELECT ivo_id, ivo_string_agg(res_subject, ', ') AS  
res_subjects FROM rr.res_subject GROUP BY ivo_id) AS  
sbj
```

TOPCAT(4): Table Browser

Window Rows Help

Table Browser for 4: TAP_4 rr.resource,rr.interface,rr.capability,rr...

	ivo_id	...	...	intf_in...	...	standard_id	...	...	res_subjects
66277	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	comet, solar-system-astronomy, planetary-sci...
66278	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	comet, solar-system-astronomy, planetary-sci...
66279	ivo://padc.obspm.planeto/iks/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	comet, solar-system-astronomy, planetary-sci...
66280	ivo://padc.obspm.planeto/vex/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	Venus, solar-system-astronomy, planetary-sci...
66281	ivo://padc.obspm.planeto/vex/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	Venus, solar-system-astronomy, planetary-sci...
66282	ivo://padc.obspm.planeto/vex/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	Venus, solar-system-astronomy, planetary-sci...
66283	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	solar-system-astronomy, planet, mass, radius...
66284	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	solar-system-astronomy, planet, mass, radius...
66285	ivo://padc.obspm.planeto/planets/q/epn_core	...	...	1	...	ivo://ivoa.net/std/tap#aux	...	...	solar-system-astronomy, planet, mass, radius...
66286	ivo://cds.vizier/j/a+a/631/a90	...	...	3	...	ivo://ivoa.net/std/tap#aux	...	...	Radial velocity, Multiple stars, Exoplanets
66287	ivo://cds.vizier/j/a+a/631/a90	...	...	3	...	ivo://ivoa.net/std/tap#aux	...	...	Radial velocity, Multiple stars, Exoplanets

Total: 1 145 913 Visible: 1 145 913 Selected: 3

```
'contact' OR  
' OR base_role IS NULL)
```

```
like 'ivo://ivoa.net/std/tap'
```

```
rd(res_subjects, 'venus'))
```

```
SELECT ivo_id, short_name, res_title, reference_url,  
base_role, role_name, email, intf_index, access_url,  
standard_id, cap_type, cap_description, std_version,  
res_subjects
```

```
FROM rr.resource AS res
```

```
NATURAL JOIN rr.interface
```

```
NATURAL JOIN rr.capability
```

```
NATURAL LEFT OUTER JOIN rr.res_role NATURAL  
LEFT OUTER JOIN
```

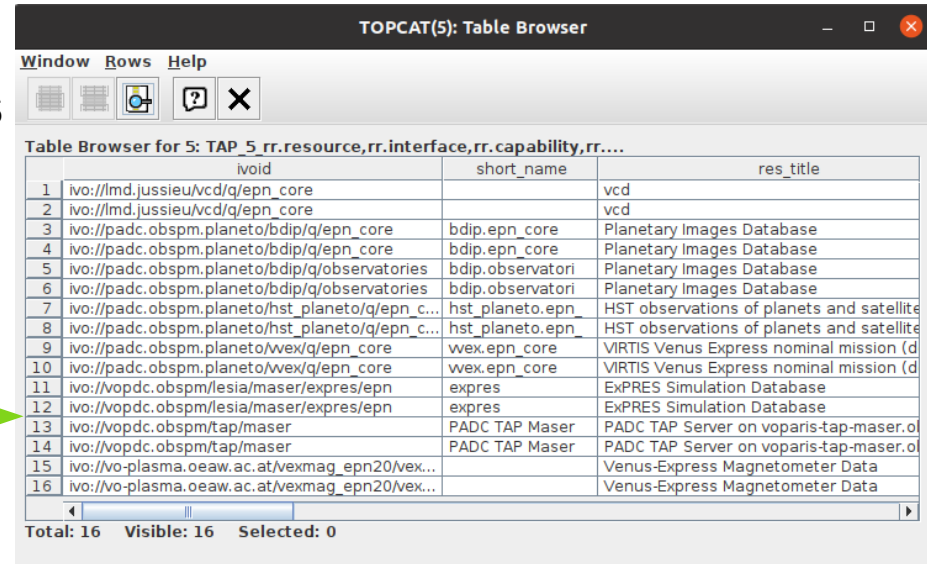
```
(SELECT ivo_id, ivo_string_agg(res_subject, ', ') AS  
res_subjects FROM rr.res_subject GROUP BY ivo_id) AS  
sbj
```

```
WHERE (base_role='contact' OR  
base_role='publisher' OR base_role IS NULL)
```

```
AND standard_id like 'ivo://ivoa.net/std/tap%'
```

```
AND intf_role='std'
```

```
AND ((1=ivo_hasword(res_subjects, 'venus')))
```



TOPCAT(5): Table Browser

Window Rows Help

Table Browser for 5: TAP_5_rr.resource,rr.interface,rr.capability,rr...

	ivo_id	short_name	res_title
1	ivo://lmd.jussieu/vcd/q/epn_core		vcd
2	ivo://lmd.jussieu/vcd/q/epn_core		vcd
3	ivo://padc.obspm.planeto/bdip/q/epn_core	bdip.epn_core	Planetary Images Database
4	ivo://padc.obspm.planeto/bdip/q/epn_core	bdip.epn_core	Planetary Images Database
5	ivo://padc.obspm.planeto/bdip/q/observatories	bdip.observatori	Planetary Images Database
6	ivo://padc.obspm.planeto/bdip/q/observatories	bdip.observatori	Planetary Images Database
7	ivo://padc.obspm.planeto/hst_planeto/q/epn_c...	hst_planeto.epn_	HST observations of planets and satellite
8	ivo://padc.obspm.planeto/hst_planeto/q/epn_c...	hst_planeto.epn_	HST observations of planets and satellite
9	ivo://padc.obspm.planeto/wex/q/epn_core	wex.epn_core	VIRTIS Venus Express nominal mission (d
10	ivo://padc.obspm.planeto/wex/q/epn_core	wex.epn_core	VIRTIS Venus Express nominal mission (d
11	ivo://nopdc.obspm/lesia/maser/expres/epn	expres	ExPRES Simulation Database
12	ivo://nopdc.obspm/lesia/maser/expres/epn	expres	ExPRES Simulation Database
13	ivo://nopdc.obspm/tap/maser	PADC TAP Maser	PADC TAP Server on voparis-tap-maser.o
14	ivo://nopdc.obspm/tap/maser	PADC TAP Maser	PADC TAP Server on voparis-tap-maser.o
15	ivo://vo-plasma.oew.ac.at/vexmag_epn20/vex...		Venus-Express Magnetometer Data
16	ivo://vo-plasma.oew.ac.at/vexmag_epn20/vex...		Venus-Express Magnetometer Data

Total: 16 Visible: 16 Selected: 0

Registering EPN-TAP services with DACHS

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