Service Catalog

The Service Catalog (ServCat) is a simple metadata catalog. It holds capabilities and service access information on mainly OGC web services. It can be filled and searched using a REST API.

For services provided with our spatial data infrastructure an instance of the Servcat is operated at https://marine-data.de/servcat/. For testing we refer to https://marine-data.de/preview/servcat/. ServCat is used as metadata backend for viewers based on our Visual Exploration Framework (VEF). For example you can freely explore services and layers here: https://marine-data.de/?site=viewer.

The source code is accessible on Gitlab. Contact o2a-uspport@awi.de for collaboration.

Searching the catalog

The catalog holds three main types of entities:

- Provider describes an individual or organization providing a service.
- Service is an endpoint identified by an URL to access provided resources and consists of Layers.
- Layer is a view on data provided by a service.

Both Services and Layers can be searched by temporal and geographical extent. It is also possible to search in service and layer metadata. For model structure and semantics habe a look at the models section. Please see also API documentation for interface details.

Example: search for layers providing data beginning with 2010

Set the `start_date` query parameter as UTC time string.

```
https://marine-data.de/servcat/rest/layers?start_date=2010-01-01T00:00:00
```

Optionally use `offset` and `limit` query parameters to scroll through search results.

Example: search for layers providing temperature

Add the `search` query parameter to your constraints. To search for "temperature" in the title of a Layer you can use something like this

```
https://marine-data.de/servcat/rest/layers?start_date=2010-01-01T00:00:
00&search=title==*temperature*&offset=0&limit=10
```

Search operators

All metadata fields can be queried in "`field <operator> value`" syntax. Supported operators are listed in following table. For details see https://github.com/jirutka/rsql-parser.

	Operator	Example	Comment
Logical	AND, OR		Semicolon ; can be used as shorthand AND. Comma can be used as shorthand OR.
Equal to	==	https://marine-data.de/servcat/rest/layers?search=title==*temperature* https://marine-data.de/servcat/rest/layers?search=parent_name==" Maximum Shear Stress"	Compares the whole field value. Use *value* to find value anywhere in the fields content.
Not equal to	!=	https://marine-data.de/servcat/rest/layers?search=title!=*temperature*	
Less than	<	https://marine-data.de/servcat/rest/layers?search=date_time_start<2020-01-01T00:00:00	
Less than or equal to	<=	https://marine-data.de/servcat/rest/layers?search=date_time_start<=2020-01-01T00:00:00	
Greater than	>	https://marine-data.de/servcat/rest/layers?search=date_time_start>2020-01-01T00:00:00	
Greater than or equal to	>=	https://marine-data.de/servcat/rest/layers?search=date_time_start>=2020-01-01T00:00:00	
In	=in=	https://marine-data.de/servcat/rest/layers?search=service.provider.acronym=in=(AWI,HZG)&limit=100	Compares any value (e.g. AWI and HZG) in brackets with field values.
Not in	=out=		

Contains	=contains=	https://marine-data.de/servcat/rest/layers?search=available_crs=contains=(EPSG:3857)	Compares a model array field or geometries.

Registration for service publication

Searching the catalog is open and freely available. To register your services and layers in the catalog, you need to register yourself or organization as a service provider. Simply write an email to o2a-support@awi.de and state your interest to get registered. You will get an API key which enables you to create, update or remove your registered services.

Models

Service

JSON structure holding all the information related to the OGC Web Service itself, and its layers (see Layer section for more details).

Service JSON Example

```
{
    "abstract": "",
    "version": "1.3.0",
    "url": "https://maps.awi.de/services/test/marehub/wms",
    "name": "TEST WMS",
    "title": "TEST Web Map Services at Alfred Wegener Institute",
    "software": "GeoServer",
    "type": "WMS",
    "capabilities": "<WMS_Capabilities version=\"1.3.0\">...</WMS_Capabilities>",
    "available_crs": [
        "EPSG:3857",
        "EPSG:4326"
    ],
    "contact": {
        "name": "Andreas Walter",
        "email": "maps@awi.de"
    },
    "date_time_start": "1987-06-22T10:00:00.000Z",
    "date_time_end": "2020-03-17T23:58:00.000Z",
    "filter_type": "OGC",
    "keywords": [
        "WFS",
        "WMS"
    ],
    "license": "CC-BY 4.0",
    "maxX": 180.0,
    "maxY": 90.0,
    "minX": -180.0,
    "minY": -90.0,
    "layers": [
        {
            "name": "test_salinity",
            "title": "Salinity",
            "parent_name": "TEST NAME",
            "abstract": "",
            "attribute_fields": [],
            "available_crs": [
                "EPSG:3995",
                "EPSG:3857",
                "EPSG:3031",
                "EPSG:4326",
                "EPSG:3411",
                "EPSG:3412"
            ],
            "available_styles": [
                "marehubSalinity1"
            ],
            "axis_names": [],
            "data_type": "",
            "date_time_start": "1987-06-22T10:00:00.000Z",
            "date_time_end": "2020-03-17T23:58:00.000Z",
            "esri_id": null,
            "legend_url": "http://maps.awi.de/services/test/marehub/wms?request=GetLegendGraphic&format=image
/png&width=20&height=20&layer=test_salinity",
            "processing_level": "",
            "metadata_urls": [
                "https://maps.awi.de/data/projects/marehub/test_salinity/metadata.json"
            ],
            "source_urls": [
                "https://maps.awi.de/data/projects/marehub/test_salinity/data.json"
            ],
            "output_formats": [],
            "maxX": 180.0,
            "maxY": 90.0,
            "minX": -180.0,
            "minY": -90.0
        }
    ]
}
```

key	value type	comment	example
url	string	Domain path to OGC Web Service.	"http://maps.awi.de/services/common/marehub/wms"
version	string	Version of the OGC Web Service.	"1.3.0"
type	string	Type of the OGC Web Service.	"WMS" or "WFS" or "WCS"
software	string	Name of the application used to provide the OGC Web Service. Only one of the following are supported (yet): • GeoServer • ESRI • rasdaman	"GeoServer"
name	string	Name of OGC Web Service.	"Web Map Services at Alfred Wegener Institute"
title	string	Title of the OGC Web Service.	"Web Map Services at Alfred Wegener Institute"
abstract	string	Short description of the content of the OGC Web Service.	"This WMS provides different layers in the context of the MareHub project"
capabilities	string	Full string response from GetCapabilities request of the OGC Web Services.	"<WMS_Capabilities version="1.3.0">...< /WMS_Capabilities>"
contact	JSON Object	See "Contact" for details.	See Contact section for more details
available_crs	JSON Array	List of available coordinate reference systems. First in the array will used as default. Must be a valid EPSG Code.	["EPSG:3857", "EPSG:4326", "EPSG:3995", "EPSG:3031"]
date_time_start	string	Minimal temporal extent of all layers provided by the OGC Web Service in ISO 8601.	"1987-06-22 10:00:00.000Z"
date_time_end	string	Minimal temporal extent of all layers provided by the OGC Web Service in ISO 8601.	"2020-03-17 23:58:00.000Z"
filter_type	string	Type of possible filter syntax to use. Yet, one of the following is supported: • OGC • CQL	"OGC"
keywords	JSON Array	List of listed keywords helping to find this OGC Web Service.	["WMS", "WFS", "Salinity"]
license	string	License / AccessConstraints of the OGC Web Service.	"CC-BY 4.0"
maxX	float	Maximum Longitude/X/East in decimal degree	180
maxY	float	Maximum Latitude/Y/North in decimal degree	90
minX	float	Minimum Longitude/X/East in decimal degree	-180
minY	float	Maximum Latitude/Y/South in decimal degree	90
layers	JSON Array	List of ServCat Layer JSON Objects. See "Layer" for more details.	See Layer section for more details

Layer

JSON structure holding all information related to one layer of one OGC Web Service.

Layer JSON Example


```
{
    "name": "test_salinity",
    "title": "Salinity",
    "parent_name": "TEST NAME",
    "abstract": "",
    "attribute_fields": [],
    "available_crs": [
        "EPSG:3995",
        "EPSG:3857",
        "EPSG:3031",
        "EPSG:4326",
        "EPSG:3411",
        "EPSG:3412"
    ],
    "available_styles": [
        "marehubSalinity1"
    ],
    "axis_names": [],
    "data_type": "",
    "date_time_start": "1987-06-22T10:00:00.000Z",
    "date_time_end": "2020-03-17T23:58:00.000Z",
    "esri_id": null,
    "legend_url": "http://maps.awi.de/services/test/marehub/wms?request=GetLegendGraphic&format=image
/png&width=20&height=20&layer=test_salinity",
    "processing_level": "",
    "metadata_urls": [
        "https://maps.awi.de/data/projects/marehub/test_salinity/metadata.json"
    ],
    "source_urls": [
        "https://maps.awi.de/data/projects/marehub/test_salinity/data.json"
    ],
    "output_formats": [],
    "maxX": 180.0,
    "maxY": 90.0,
    "minX": -180.0,
    "minY": -90.0
}
```


key	value type	comment	example
name	string	Name of the OGC Web Service Layer.	"measurements_salinity"
title	string	Title of the OGC Web Service Layer.	"Salinity"
parent_name	string	Name of this Layers parent Layer.	"Web Map Services at Alfred Wegener Institute"
abstract	string	Short description of this layers content.	"This Layer provides salinity measurements in the context of the MareHub project"
attribute_fields	JSON Array	List of ServCat AttributeField JSON Objects. See "AttributeFields" for more details.	See AttributeField section for more details
available_crs	JSON Array	List of available coordinate reference systems. First in the array will used as default. Must be a valid EPSG Code.	["EPSG:3857", "EPSG:4326", "EPSG:3995", "EPSG:3031"]
available_styles	JSON Array	List of available style names. First is used as default.	["marehubSalinity1"]
axis_names	JSON Array	List of axis names. Only used in "WCS".	["longitude", "latitude"]
date_time_start	string	Minimal temporal extent of all layers provided by the OGC Web Service in ISO 8601.	"1987-06-22 10:00:00.000Z"
date_time_end	string	Minimal temporal extent of all layers provided by the OGC Web Service in ISO 8601.	"2020-03-17 23:58:00.000Z"
esri_id	string	ESRI is using integer values to identify there layers.	0

legend_url	string	URL of either one of following, a GetLegend request or a URL to an image, to provide a legend image to this layer.	"http://maps.awi.de/services/common/marehub/wms?request=GetLegendGraphic&format=image/png&width=20&height=20&layer=measurements_salinity"
metadata_urls			
source_urls			
output_formats			
maxX	float	Maximum Longitude/X/East in decimal degree	180
maxY	float	Maximum Latitude/Y/North in decimal degree	90
minX	float	Minimum Longitude/X/East in decimal degree	-180
minY	float	Maximum Latitude/Y/South in decimal degree	90

AttributeField

JSON structure holding one attribute column / field description.

AttributeField JSON Example

```
{
        "name": "event_name",
        "attribute_type": "string"
}
```

key	value type	comment	example
name	string	Name of the attribute fields / columns	"event_name"
attribute_type	string	Data type	"string"

Contact

JSON structure holding one contact name and email

Contact JSON Example

```
{
        "name": "Andreas Walter",
        "email": "maps@awi.de"
}
```

key	value type	comment	example
name	string	Name of Contact Person.	"Andreas Walter"
email	string	E-Mail address of the contact.	"maps@awi.de"