

# Package: ows4R (via r-universe)

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**Title** Interface to OGC Web-Services (OWS)

**Maintainer** Emmanuel Blondel <emmanuel.blondel1@gmail.com>

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geometa (>= 0.7-1), sf, terra, parallel, crayon

**Suggests** testthat, knitr, markdown

**Description** Provides an Interface to Web-Services defined as standards by the Open Geospatial Consortium (OGC), including Web Feature Service (WFS) for vector data, Web Coverage Service (WCS), Catalogue Service (CSW) for ISO/OGC metadata, Web Processing Service (WPS) for data processes, and associated standards such as the common web-service specification (OWS) and OGC Filter Encoding. Partial support is provided for the Web Map Service (WMS). The purpose is to add support for additional OGC service standards such as Web Coverage Processing Service (WCPS), the Sensor Observation Service (SOS), or even new standard services emerging such OGC API or SensorThings.

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**URL** <https://github.com/eblondel/ows4R>,  
<https://eblondel.github.io/ows4R/>,  
<https://www.ogc.org/standards/>

**BugReports** <https://github.com/eblondel/ows4R/issues>

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**Author** Emmanuel Blondel [aut, cre]  
 (<<https://orcid.org/0000-0002-5870-5762>>), Alexandre Bennici  
 [ctb] (<<https://orcid.org/0000-0003-2160-3487>>), Norbert Billet  
 [ctb]

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## Contents

|                                    |    |
|------------------------------------|----|
| And . . . . .                      | 4  |
| BBOX . . . . .                     | 5  |
| BinaryComparisonOpType . . . . .   | 6  |
| BinaryLogicOpType . . . . .        | 8  |
| CASClient . . . . .                | 9  |
| CSWCapabilities . . . . .          | 10 |
| CSWClient . . . . .                | 12 |
| CSWConstraint . . . . .            | 17 |
| CSWDescribeRecord . . . . .        | 19 |
| CSWGetRecordById . . . . .         | 20 |
| CSWGetRecords . . . . .            | 22 |
| CSWHarvest . . . . .               | 24 |
| CSWQuery . . . . .                 | 25 |
| CSWRecordProperty . . . . .        | 28 |
| CSWTransaction . . . . .           | 29 |
| getOWSNamespace . . . . .          | 31 |
| getOWSNamespace . . . . .          | 31 |
| Not . . . . .                      | 32 |
| OGCAbstractObject . . . . .        | 33 |
| OGCExpression . . . . .            | 36 |
| OGCFilter . . . . .                | 38 |
| Or . . . . .                       | 39 |
| ows4R . . . . .                    | 40 |
| OWSBoundingBox . . . . .           | 41 |
| OWSCapabilities . . . . .          | 43 |
| OWSClient . . . . .                | 46 |
| OWSCodeType . . . . .              | 49 |
| OWSException . . . . .             | 50 |
| OWSGetCapabilities . . . . .       | 51 |
| OWSHttpRequest . . . . .           | 53 |
| OWSNamespace . . . . .             | 56 |
| OWSOperation . . . . .             | 57 |
| OWSOperationsMetadata . . . . .    | 59 |
| OWSRequest . . . . .               | 60 |
| OWSServiceIdentification . . . . . | 61 |
| OWSServiceProvider . . . . .       | 63 |
| OWSUtils . . . . .                 | 65 |
| OWSWG84BoundingBox . . . . .       | 66 |

|                                |     |
|--------------------------------|-----|
| PropertyIsBetween              | 67  |
| PropertyIsEqualTo              | 68  |
| PropertyIsGreaterThan          | 69  |
| PropertyIsGreaterThanOrEqualTo | 70  |
| PropertyIsLessThan             | 71  |
| PropertyIsLessThanOrEqualTo    | 72  |
| PropertyIsLike                 | 74  |
| PropertyIsNotEqualTo           | 75  |
| PropertyIsNull                 | 76  |
| registerOWSNamespace           | 77  |
| setOWSNamespace                | 78  |
| UnaryLogicOpType               | 78  |
| WCSCapabilities                | 80  |
| WCSClient                      | 81  |
| WCSCoverage                    | 84  |
| WCSCoverageDescription         | 86  |
| WCSCoverageDomain              | 88  |
| WCSCoverageFilenameHandler     | 90  |
| WCSCoverageSpatialDomain       | 90  |
| WCSCoverageSummary             | 92  |
| WCSCoverageTemporalDomain      | 96  |
| WCSDescribeCoverage            | 97  |
| WCSGetCoverage                 | 99  |
| WCSGridCRS                     | 101 |
| WCSGSElevationDomain           | 102 |
| WCSGSTimeDomain                | 103 |
| WFSCapabilities                | 105 |
| WFSClient                      | 106 |
| WFSDescribeFeatureType         | 109 |
| WFSFeatureType                 | 110 |
| WFSFeatureTypeElement          | 114 |
| WFSGetFeature                  | 116 |
| WMSCapabilities                | 117 |
| WMSClient                      | 119 |
| WMSGetFeatureInfo              | 122 |
| WMSLayer                       | 124 |
| WPSBoundingBoxData             | 128 |
| WPSCapabilities                | 129 |
| WPSClient                      | 131 |
| WPSComplexData                 | 134 |
| WPSComplexInputDescription     | 136 |
| WPSComplexOutputDescription    | 137 |
| WPSDescribeProcess             | 138 |
| WPSDescriptionParameter        | 140 |
| WPSException                   | 141 |
| WPSExecute                     | 143 |
| WPSExecuteResponse             | 145 |
| WPSFormat                      | 147 |

|                                       |     |
|---------------------------------------|-----|
| WPSInput . . . . .                    | 149 |
| WPSInputDescription . . . . .         | 150 |
| WPSLiteralData . . . . .              | 152 |
| WPSLiteralInputDescription . . . . .  | 153 |
| WPSLiteralOutputDescription . . . . . | 155 |
| WPSOutput . . . . .                   | 156 |
| WPSOutputDescription . . . . .        | 158 |
| WPSParameter . . . . .                | 159 |
| WPSProcess . . . . .                  | 160 |
| WPSProcessDescription . . . . .       | 162 |
| WPSResponseDocument . . . . .         | 165 |
| WPSStatus . . . . .                   | 166 |

|              |            |
|--------------|------------|
| <b>Index</b> | <b>168</b> |
|--------------|------------|

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|     |            |
|-----|------------|
| And | <i>And</i> |
|-----|------------|

---

## Description

And

And

## Format

[R6Class](#) object.

## Value

Object of [R6Class](#) for modelling an And operator

## Super classes

[ows4R::OGAbstractObject](#) -> [ows4R::OGExpression](#) -> [ows4R::BinaryLogicOpType](#) -> And

## Methods

### Public methods:

- [And\\$new\(\)](#)
- [And\\$clone\(\)](#)

**Method** `new()`: Initializes an [And](#) expression

*Usage:*

`And$new(...)`

*Arguments:*

... list of objects of class [OGCEXpression](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
And$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

### Examples

```
expr1 <- PropertyIsEqualTo$new(PropertyName = "property1", Literal = "value1")
expr2 <- PropertyIsEqualTo$new(PropertyName = "property2", Literal = "value2")
and <- And$new(expr1,expr2)
and_xml <- and$encode() #see how it looks like in XML
```

---

BBOX

*BBOX*

---

### Description

BBOX

BBOX

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an BBOX

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> BBOX

### Public fields

PropertyName property name field for XML encoding

Envelope envelope as object of class [GMLEnvelope](#) from **geometa**

**Methods****Public methods:**

- [BBOX\\$new\(\)](#)
- [BBOX\\$clone\(\)](#)

**Method** `new()`: Initializes a [BBOX](#) expression

*Usage:*

```
BBOX$new(bbox, srsName = NULL)
```

*Arguments:*

`bbox` an object of class `matrix`

`srsName` srs name

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
BBOX$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
bbox <- OWSUtils$toBBOX(-180,-90,180,90)
expr <- BBOX$new(bbox)
expr_xml <- expr$encode() #see how it looks like in XML
```

---

BinaryComparisonOpType

*BinaryComparisonOpType*

---

**Description**

BinaryComparisonOpType

BinaryComparisonOpType

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an BinaryComparisonOpType

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> BinaryComparisonOpType

### Public fields

PropertyName property name field for XML encoding

Literal literal field for XML encoding

attrs attributes for XML encoding

### Methods

#### Public methods:

- [BinaryComparisonOpType\\$new\(\)](#)
- [BinaryComparisonOpType\\$clone\(\)](#)

**Method new():** Initializes an object extending [BinaryComparisonOpType](#)

*Usage:*

```
BinaryComparisonOpType$new(  
  element,  
  namespacePrefix,  
  PropertyName,  
  Literal,  
  matchCase = NA  
)
```

*Arguments:*

element element name

namespacePrefix XML namespace prefix

PropertyName property name

Literal literal

matchCase match case

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
BinaryComparisonOpType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

abstract super class of all the property operation classes

### Author(s)

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>

---

BinaryLogicOpType      *BinaryLogicOpType*

---

### Description

BinaryLogicOpType

BinaryLogicOpType

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an BinaryLogicOpType

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> BinaryLogicOpType

### Public fields

operations a list OGC expressions

### Methods

#### Public methods:

- [BinaryLogicOpType\\$new\(\)](#)
- [BinaryLogicOpType\\$setExprVersion\(\)](#)
- [BinaryLogicOpType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [BinaryLogicOpType](#) expression

*Usage:*

```
BinaryLogicOpType$new(..., element, namespacePrefix, exprVersion = "1.1.0")
```

*Arguments:*

... list of objects of class [OGCEXpression](#)

element element

namespacePrefix namespacePrefix

exprVersion OGC expression version. Default is "1.1.0"

**Method** [setExprVersion\(\)](#): Sets expression version. The methods will control that expression versions are set for each of the operations specified in the expression.

*Usage:*

```
BinaryLogicOpType$setExprVersion(exprVersion)
```

*Arguments:*



exprVersion OGC expression version

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

BinaryLogicOpType\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

abstract super class of all the binary logical operation classes

---

CASClient

*CASClient*

---

### Description

CASClient

CASClient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing a Central Authentication Service (CAS).

### Methods

#### Public methods:

- [CASClient\\$new\(\)](#)
- [CASClient\\$getUrl\(\)](#)
- [CASClient\\$login\(\)](#)
- [CASClient\\$logout\(\)](#)
- [CASClient\\$clone\(\)](#)

**Method new():** Initializes an object of class [CASClient](#)

*Usage:*

CASClient\$new(url)

*Arguments:*

url base URL of the Central Authentication Service (CAS)

**Method getUrl():** Get CAS base URL

*Usage:*

CASClient\$getUrl()

*Returns:* the base URL

**Method login():** Logs in the CAS

*Usage:*

CASClient\$login(user, pwd)

*Arguments:*

user user

pwd password

*Returns:* TRUE if logged in, FALSE otherwise

**Method logout():** Logs out from the CAS

*Usage:*

CASClient\$logout()

*Returns:* TRUE if logged out, FALSE otherwise

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

CASClient\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWCapabilities

*CSWCapabilities*

---

#### Description

CSWCapabilities

CSWCapabilities

#### Format

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Catalogue Service for the Web (CSW) Get Capabilities document.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> CSWCapabilities

**Methods****Public methods:**

- [CSWCapabilities\\$new\(\)](#)
- [CSWCapabilities\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [CSWCapabilities](#) object

*Usage:*

```
CSWCapabilities$new(url, version, client = NULL, logger = NULL, ...)
```

*Arguments:*

url url

version version

client object of class [CSWClient](#)

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
CSWCapabilities$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used to read a [CSWCapabilities](#) document. The use of [CSWClient](#) is recommended instead to benefit from the full set of capabilities associated to a CSW server.

**Author(s)**

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>

CSWClient

*CSWClient*

---

**Description**

CSWClient

CSWClient

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) with methods for interfacing an OGC Catalogue Service for the Web.**Super classes**[ows4R::OGCAbstractObject](#) -> [ows4R::OWSClient](#) -> CSWClient**Methods****Public methods:**

- [CSWClient\\$new\(\)](#)
- [CSWClient\\$getCapabilities\(\)](#)
- [CSWClient\\$reloadCapabilities\(\)](#)
- [CSWClient\\$describeRecord\(\)](#)
- [CSWClient\\$getRecordById\(\)](#)
- [CSWClient\\$getRecords\(\)](#)
- [CSWClient\\$transaction\(\)](#)
- [CSWClient\\$insertRecord\(\)](#)
- [CSWClient\\$updateRecord\(\)](#)
- [CSWClient\\$deleteRecord\(\)](#)
- [CSWClient\\$deleteRecordById\(\)](#)
- [CSWClient\\$harvestRecord\(\)](#)
- [CSWClient\\$harvestNode\(\)](#)
- [CSWClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a CSWClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```

CSWClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)

```

*Arguments:*

url url  
serviceVersion CSW service version  
user user  
pwd password  
token token  
headers headers  
config config  
cas\_url Central Authentication Service (CAS) URL  
logger logger

**Method** getCapabilities(): Get CSW capabilities

*Usage:*

```
CSWClient$getCapabilities()
```

*Returns:* an object of class [CSWCapabilities](#)

**Method** reloadCapabilities(): Reloads CSW capabilities

*Usage:*

```
CSWClient$reloadCapabilities()
```

**Method** describeRecord(): Describe records. Retrieves the XML schema for CSW records. By default, returns the XML schema for the CSW records (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the outputSchema required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 schema

*Usage:*

```
CSWClient$describeRecord(namespace, ...)
```

*Arguments:*

namespace namespace  
... any other parameter to pass to the [CSWDescribeRecord](#) service request

*Returns:* the service record description

**Method** getRecordById(): Get a record by Id. By default, the record will be returned following the CSW schema (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the outputSchema required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 records.

The parameter `elementSetName` should among values "full", "brief", "summary". The default "full" corresponds to the full metadata sheet returned. "brief" and "summary" will contain only a subset of the metadata content.

*Usage:*

```
CSWClient$getRecordById(id, elementSetName = "full", ...)
```

*Arguments:*

`id` record id

`elementSetName` element set name. Default is "full"

... any other parameter to pass to [CSWGetRecordById](#) service request

*Returns:* the fetched record, NULL otherwise

**Method** `getRecords()`: Get records based on a query, object of class `CSWQuery`. The maximum number of records can be set either for the full query (`maxRecords`) or per request (`maxRecordsPerRequest`, default set to 10 records) considering this operation is paginated. By default, the record will be returned following the CSW schema (<http://www.opengis.net/cat/csw/2.0.2>). For other schemas, specify the `outputSchema` required, e.g. <http://www.isotc211.org/2005/gmd> for ISO 19115/19139 records.

*Usage:*

```
CSWClient$getRecords(
  query = CSWQuery$new(),
  maxRecords = NULL,
  maxRecordsPerRequest = 10L,
  ...
)
```

*Arguments:*

`query` an object of class [CSWQuery](#). By default, an empty query is set.

`maxRecords` max number of total records. Default is NULL meaning all records are returned.

`maxRecordsPerRequest` max number of records to return per request. Default set to 10.

... any other parameter to be passed to [CSWGetRecords](#) service request

*Returns:* the list of records. By default each record will be returned as Dublin Core list object. In case ISO 19115/19139 is set as `outputSchema`, each record will be object of class `ISOMetadata` from **geometa**.

**Method** `transaction()`: Generic transaction method. Used for inserting, updating or deleting metadata using the transactional CSW service. The `type` gives the type of transaction (Insert, Update, or Delete). The `record`

*Usage:*

```
CSWClient$transaction(
  type,
  record = NULL,
  recordProperty = NULL,
  constraint = NULL,
  ...
)
```

*Arguments:*

type of transaction either "Insert", "Update" or "Delete"  
 record the record subject of the transaction  
 recordProperty record property, object of class [CSWRecordProperty](#)  
 constraint constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to [CSWTransaction](#) service request  
*Returns:* TRUE if transaction succeeded, FALSE otherwise

**Method** insertRecord(): Inserts a new record

*Usage:*  
 CSWClient\$insertRecord(record, ...)

*Arguments:*  
 record record subject of the Insertion  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if insertion succeeded, FALSE otherwise

**Method** updateRecord(): Updates an existing record

*Usage:*  
 CSWClient\$updateRecord(  
     record = NULL,  
     recordProperty = NULL,  
     constraint = NULL,  
     ...  
 )

*Arguments:*  
 record record subject of the Insertion  
 recordProperty record property, object of class [CSWRecordProperty](#)  
 constraint constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if update succeeded, FALSE otherwise

**Method** deleteRecord(): Deletes an existing (set of) record(s). A constraint (object of class [CSWConstraint](#)) can be specified to limit the deletion to some records.

*Usage:*  
 CSWClient\$deleteRecord(record = NULL, constraint = NULL, ...)

*Arguments:*  
 record record subject of the Insertion  
 constraint constraint, object of class [CSWConstraint](#)  
 ... any other parameter to pass to the transaction

*Returns:* TRUE if deletion succeeded, FALSE otherwise

**Method** deleteRecordById(): Deletes an existing record by identifier (constraint used to identify the record based on its identifier).

*Usage:*

CSWClient\$deleteRecordById(id)

*Arguments:*

id record id

*Returns:* TRUE if deletion succeeded, FALSE otherwise

**Method** harvestRecord(): Harvests a single record from a sourceUrl, given a resourceType (by default "http://www.isotc211.org/2005/gmd").

*Usage:*

```
CSWClient$harvestRecord(
  sourceUrl,
  resourceType = "http://www.isotc211.org/2005/gmd"
)
```

*Arguments:*

sourceUrl source URL

resourceType resource type. Default is "http://www.isotc211.org/2005/gmd"

*Returns:* TRUE if harvesting succeeded, FALSE otherwise

**Method** harvestNode(): Harvests a CSW node (having its endpoint defined by an url). A query (object of class CSWQuery) can be specified if needed to restrain the harvesting to a subset. The resourceType defines the type of resources to be harvested (by default "http://www.isotc211.org/2005/gmd")

*Usage:*

```
CSWClient$harvestNode(
  url,
  query = CSWQuery$new(),
  resourceType = "http://www.isotc211.org/2005/gmd",
  sourceBaseUrl
)
```

*Arguments:*

url CSW node URL

query a CSW query, object of class [CSWQuery](#)

resourceType resource type. Default is "http://www.isotc211.org/2005/gmd"

sourceBaseUrl source base URL

*Returns:* an object of class list giving the number of records found and those actually harvested

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



**Examples**

```
## Not run:
#example based on CSW endpoint responding at http://localhost:8000/csw
csw <- CSWClient$new("http://localhost:8000/csw", serviceVersion = "2.0.2")

#get capabilities
caps <- csw$getCapabilities()

#get records
records <- csw$getRecords()

#get record by id
record <- csw$getRecordById("my-metadata-id")

#Advanced examples at https://github.com/eblondel/ows4R/wiki#csw

## End(Not run)
```

---

CSWConstraint

*CSWConstraint*


---

**Description**

CSWConstraint

CSWConstraint

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an CSW Constraint

**Super class**

[ows4R::OGCAbstractObject](#) -> CSWConstraint

**Public fields**

wrap internal property for object XML encoding

CqlText text to use as CQL filter

filter

## Methods

### Public methods:

- [CSWConstraint\\$new\(\)](#)
- [CSWConstraint\\$setServiceVersion\(\)](#)
- [CSWConstraint\\$clone\(\)](#)

**Method new():** Initializes a [CSWConstraint](#) object to be used to constrain CSW operations.

*Usage:*

```
CSWConstraint$new(cqlText = NULL, filter = NULL, serviceVersion = "2.0.2")
```

*Arguments:*

cqlText cqlText, object of class character

filter filter, object extending [OGCFilter](#)

serviceVersion CSW service version. Default is "2.0.2"

**Method setServiceVersion():** Set service version. This methods ensures that underlying filter property is properly set with the right OGC filter version.

*Usage:*

```
CSWConstraint$setServiceVersion(serviceVersion)
```

*Arguments:*

serviceVersion service version

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
CSWConstraint$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

## Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

## Examples

```
filter <- OGCFilter$new( PropertyIsEqualTo$new("apiso:Identifier", "12345") )
cons <- CSWConstraint$new(filter = filter)
cons_xml <- cons$encode() #how it looks like in XML
```

---

|                   |                          |
|-------------------|--------------------------|
| CSWDescribeRecord | <i>CSWDescribeRecord</i> |
|-------------------|--------------------------|

---

**Description**

CSWDescribeRecord  
 CSWDescribeRecord

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a CSW DescribeRecord request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWDescribeRecord

**Methods****Public methods:**

- [CSWDescribeRecord\\$new\(\)](#)
- [CSWDescribeRecord\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWDescribeRecord](#) service request

*Usage:*

```
CSWDescribeRecord$new(
  capabilities,
  op,
  url,
  version,
  namespace = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [CSWCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from capabilities

url url  
 version version  
 namespace namespace  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 logger logger  
 ... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

CSWDescribeRecord\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a CSW DescribeRecord request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWGetRecordById

*CSWGetRecordById*

---

#### Description

CSWGetRecordById

CSWGetRecordById

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a CSW GetRecordById request

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWGetRecordById

**Public fields**

Id record Id property for request XML encoding

ElementSetName element set name property for XML encoding

**Methods****Public methods:**

- [CSWGetRecordById\\$new\(\)](#)
- [CSWGetRecordById\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWGetRecordById](#) service request

*Usage:*

```
CSWGetRecordById$new(
  capabilities,
  op,
  url,
  serviceVersion = "2.0.2",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = headers,
  config = httr::config(),
  id,
  elementSetName = "full",
  logger = NULL,
  ...
)
```

*Arguments:*

capabilities an object of class [CSWCapabilities](#)

op object of class [OWSOperation](#) as retrieved from capabilities

url url

serviceVersion serviceVersion. Default is "2.0.2"

user user

pwd password

token token

headers headers

config config

id record id

elementSetName element set name. Default is "full"

logger logger

... any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

CSWGetRecordById\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **ows4R** to trigger a CSW GetRecordById request

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWGetRecords

*CSWGetRecords*

---

### Description

CSWGetRecords

CSWGetRecords

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a CSW GetRecords request

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWGetRecords

### Public fields

Query query property for request XML encoding

### Methods

#### Public methods:

- [CSWGetRecords\\$new\(\)](#)
- [CSWGetRecords\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [CSWGetRecordById](#) service request

*Usage:*

```
CSWGetRecords$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion = "2.0.2",  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = list(),  
  config = httr::config(),  
  query = NULL,  
  logger = NULL,  
  ...  
)
```

*Arguments:*

capabilities an object of class [CSWCapabilities](#)

op object of class [OWSOperation](#) as retrieved from capabilities

url url

serviceVersion serviceVersion. Default is "2.0.2"

user user

pwd password

token token

headers headers

config config

query object of class [CSWQuery](#)

logger logger

... any parameter to pass to the service request, such as resultType, startPosition, maxRecords, outputFormat, or outputSchema

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWGetRecords$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a CSW GetRecords request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

 CSWHarvest

*CSWHarvest*


---

**Description**

CSWHarvest

CSWHarvest

**Format**[R6Class](#) object.**Value**Object of [R6Class](#) for modelling a CSW Harvest request**Super classes**[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWHarvest**Public fields**

Source source property for request XML encoding

ResourceType resource type property for request XML encoding

ResourceFormat resource format property for request XML encoding

**Methods****Public methods:**

- [CSWHarvest\\$new\(\)](#)
- [CSWHarvest\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWHarvest](#) service request*Usage:*

```
CSWHarvest$new(
  capabilities,
  op,
  url,
  serviceVersion = "2.0.2",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = list(),
  config = httr::config(),
  source = NULL,
  resourceType = "http://www.isotc211.org/schemas/2005/gmd/",
```



```

        resourceFormat = "application/xml",
        logger = NULL,
        ...
    )

```

*Arguments:*

capabilities an object of class [CSWCapabilities](#)  
op object of class [OWSOperation](#) as retrieved from capabilities  
url url  
serviceVersion serviceVersion. Default is "2.0.2"  
user user  
pwd password  
token token  
headers headers  
config config  
source source  
resourceType resource type. Default is "http://www.isotc211.org/schemas/2005/gmd/"  
resourceFormat resource format. Default is "application/xml"  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
CSWHarvest$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a CSW Harvest request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

CSWQuery

*CSWQuery*

---

**Description**

CSWQuery

CSWQuery

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an CSW Query

**Super class**

[ows4R::OGCAbstractObject](#) -> CSWQuery

**Public fields**

`elementSetName` element set name property for request XML encoding  
`constraint` property for request XML encoding

**Methods****Public methods:**

- [CSWQuery\\$new\(\)](#)
- [CSWQuery\\$setServiceVersion\(\)](#)
- [CSWQuery\\$clone\(\)](#)

**Method** `new()`: This method is used to instantiate an CSWQuery object. The `elementSetName` can be either "full" (default), "brief" or "summary". A constraint [CSWConstraint](#) can be defined for the query. The `typeNames` indicates to query (default "csw:Record"). The `serviceVersion` gives the CSW service version (default "2.0.2")

*Usage:*

```
CSWQuery$new(
  elementSetName = "full",
  constraint = NULL,
  typeNames = "csw:Record",
  serviceVersion = "2.0.2"
)
```

*Arguments:*

`elementSetName` element set name. Default is "full"  
`constraint` object of class [CSWConstraint](#)  
`typeNames` type names  
`serviceVersion` CSW service version

**Method** `setServiceVersion()`: Set service version. The methods ensures property naming of `typeNames` depending on the service version

*Usage:*

```
CSWQuery$setServiceVersion(serviceVersion)
```

*Arguments:*

`serviceVersion` service version

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWQuery$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

## Examples

```
#CSWQuery - elementSetName
query_full <- CSWQuery$new()
query_brief <- CSWQuery$new(elementSetName = "brief")
query_summary <- CSWQuery$new(elementSetName = "summary")

#CSWQuery - cqlText with title
cons <- CSWConstraint$new(cqlText = "dc:title like '%ips%')")
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText
filter <- OGCFilter$new( PropertyIsLike$new("csw:AnyText", "%Physio%"))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText Equal
filter <- OGCFilter$new( PropertyIsEqualTo$new("csw:AnyText", "species"))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText And Not
filter <- OGCFilter$new(And$new(
  PropertyIsLike$new("csw:AnyText", "%lorem%"),
  PropertyIsLike$new("csw:AnyText", "%ipsum%"),
  Not$new(
    PropertyIsLike$new("csw:AnyText", "%dolor%")
  )
))
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(constraint = cons)

#CSW 2.0.2 - Query - Filter / AnyText And nested Or
filter <- OGCFilter$new(And$new(
  PropertyIsEqualTo$new("dc:title", "Aliquam fermentum purus quis arcu"),
  PropertyIsEqualTo$new("dc:format", "application/pdf"),
  Or$new(
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Dataset"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Service"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Image"),
    PropertyIsEqualTo$new("dc:type", "http://purl.org/dc/dcmitype/Text")
  )
))
```

```

    )
  ))
  cons <- CSWConstraint$new(filter = filter)
  query <- CSWQuery$new(elementSetName = "brief", constraint = cons)

#CSW 2.0.2 - Query - Filter / BBOX
bbox <- matrix(c(-180,180,-90,90), nrow = 2, ncol = 2, byrow = TRUE,
              dimnames = list(c("x", "y"), c("min","max")))
filter <- OGCFilter$new( BBOX$new(bbox = bbox) )
cons <- CSWConstraint$new(filter = filter)
query <- CSWQuery$new(elementSetName = "brief", constraint = cons)

```

---

|                   |                          |
|-------------------|--------------------------|
| CSWRecordProperty | <i>CSWRecordProperty</i> |
|-------------------|--------------------------|

---

### Description

CSWRecordProperty

CSWRecordProperty

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an CSW RecordProperty

### Super class

[ows4R::OGCAbstractObject](#) -> CSWRecordProperty

### Public fields

wrap internal property for XML encoding

Name name property for request XML encoding

Value property for request XML encoding

### Methods

#### Public methods:

- [CSWRecordProperty\\$new\(\)](#)
- [CSWRecordProperty\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [CSWRecordProperty](#)

*Usage:*

```
CSWRecordProperty$new(name, value, cswVersion = "2.0.2")
```

*Arguments:*

name name

value value

cswVersion CSW service version. Default is "2.0.2"

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWRecordProperty$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
rp <- CSWRecordProperty$new(name = "NAME", value = "VALUE")
rp_xml <- rp$encode() #see how it looks in XML
```

---

CSWTransaction

*CSWTransaction*

---

**Description**

CSWTransaction

CSWTransaction

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a CSW Transaction request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> CSWTransaction

**Methods****Public methods:**

- [CSWTransaction\\$new\(\)](#)
- [CSWTransaction\\$clone\(\)](#)

**Method** `new()`: Initializes a [CSWTransaction](#) service request

*Usage:*

```
CSWTransaction$new(
  capabilities,
  op,
  url,
  serviceVersion,
  type,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = list(),
  record = NULL,
  recordProperty = NULL,
  constraint = NULL,
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [CSWCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from `capabilities`  
`url` url  
`serviceVersion` serviceVersion. Default is "2.0.2"  
`type` type of transaction, either "Insert", "Update", or "Delete"  
`user` user  
`pwd` password  
`token` token  
`headers` headers  
`record` record  
`recordProperty` record property  
`constraint` constraint  
`logger` logger  
`...` any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
CSWTransaction$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a CSW Transaction request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

*getOWSNamespace*      *getOWSNamespace*

---

**Description**

*getOWSNamespace* gets a namespace given its id

**Usage**

*getOWSNamespace*(id)

**Arguments**

id                    namespace prefix

**Author(s)**

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

*getOWSNamespace*("GMD")

---

*getOWSNamespace*s      *getOWSNamespace*s

---

**Description**

*getOWSNamespace*s gets the list of namespaces registered

**Usage**

*getOWSNamespace*s()

**Author(s)**

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

```
getOWSNamespace()
```

---

Not

*Not*

---

**Description**

Not

Not

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an Not

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::UnaryLogicOpType](#) -> Not

**Methods****Public methods:**

- [Not\\$new\(\)](#)
- [Not\\$clone\(\)](#)

**Method** `new()`: Initializes an [Not](#) expression

*Usage:*

```
Not$new(...)
```

*Arguments:*

... list of objects of class [OGCExpression](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
Not$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>



**Examples**

```
expr <- PropertyIsEqualTo$new(PropertyName = "property", Literal = "value")
not <- Not$new(expr)
not_xml <- not$encode() #see how it looks like in XML
```

---

|                   |                          |
|-------------------|--------------------------|
| OGCAbstractObject | <i>OGCAbstractObject</i> |
|-------------------|--------------------------|

---

**Description**

OGCAbstractObject  
OGCAbstractObject

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGCAbstractObject

**Public fields**

verbose.info logical property to indicate whether INFO logs have to be displayed  
verbose.debug logical property to indicate whether DEBUG logs have to be displayed  
loggerType logger type, either NULL, "INFO", or "DEBUG"  
wrap internal property for XML encoding  
element element used for XML encoding  
namespace namespace used for XML encoding  
defaults default values to be used for XML encoding  
attrs attributes to be used for XML encoding

**Methods****Public methods:**

- [OGCAbstractObject\\$logger\(\)](#)
- [OGCAbstractObject\\$INFO\(\)](#)
- [OGCAbstractObject\\$WARN\(\)](#)
- [OGCAbstractObject\\$ERROR\(\)](#)
- [OGCAbstractObject\\$new\(\)](#)
- [OGCAbstractObject\\$getClassName\(\)](#)
- [OGCAbstractObject\\$getClass\(\)](#)

- [OGCAbstractObject\\$isFieldInheritedFrom\(\)](#)
- [OGCAbstractObject\\$getNamespaceDefinition\(\)](#)
- [OGCAbstractObject\\$encode\(\)](#)
- [OGCAbstractObject\\$print\(\)](#)
- [OGCAbstractObject\\$clone\(\)](#)

**Method** `logger()`: A basic logger function

*Usage:*

```
OGCAbstractObject$logger(type, text)
```

*Arguments:*

type type of logs message.

text log message text to be displayed

**Method** `INFO()`: a basic INFO logger function

*Usage:*

```
OGCAbstractObject$INFO(text)
```

*Arguments:*

text log message text to be displayed

**Method** `WARN()`: a basic WARN logger function

*Usage:*

```
OGCAbstractObject$WARN(text)
```

*Arguments:*

text log message text to be displayed

**Method** `ERROR()`: a basic ERROR logger function

*Usage:*

```
OGCAbstractObject$ERROR(text)
```

*Arguments:*

text log message text to be displayed

**Method** `new()`: Initializes an object extending [OGCAbstractObject](#)

*Usage:*

```
OGCAbstractObject$new(  
  xml = NULL,  
  element = NULL,  
  namespacePrefix = NULL,  
  attrs = list(),  
  defaults = list(),  
  wrap = FALSE,  
  logger = NULL  
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
 element element name  
 namespacePrefix namespace prefix for XML encoding  
 attrs list of attributes  
 defaults list of default values  
 wrap whether XML element has to be wrapped during XML encoding  
 logger logger

**Method** `getClassName()`: Get class name

*Usage:*

```
OGCAbstractObject$getClassName()
```

*Returns:* an object of class character

**Method** `getClass()`: Get class

*Usage:*

```
OGCAbstractObject$getClass()
```

*Returns:* an object of class R6Class

**Method** `isFieldInheritedFrom()`: Utility to return the parent class in which field is defined

*Usage:*

```
OGCAbstractObject$isFieldInheritedFrom(field)
```

*Arguments:*

field field name

*Returns:* object of class R6Class

**Method** `getNamespaceDefinition()`: Gets the namespace definition

*Usage:*

```
OGCAbstractObject$getNamespaceDefinition(recursive = FALSE)
```

*Arguments:*

recursive Get all namespace recursively

*Returns:* the namespace definitions as named list

**Method** `encode()`: Encodes as XML. The `addNS` . Extra parameters related to **geometa** objects: `geometa_validate` (TRUE by default) and `geometa_inspire` (FALSE by default) can be used to perform ISO and INSPIRE validation respectively. In that case an object of class `geometa::INSPIREMetadataValidator`, with a proper user API key, should be specified as `geometa_inspireValidator` argument.

*Usage:*

```
OGCAbstractObject$encode(  
  addNS = TRUE,  
  geometa_validate = TRUE,  
  geometa_inspire = FALSE,  
  geometa_inspireValidator = NULL  
)
```

*Arguments:*

addNS addNS controls the addition of XML namespaces

geometa\_validate Relates to **geometa** object ISO validation. Default is TRUE

geometa\_inspire Relates to **geometa** object INSPIRE validation. Default is FALSE

geometa\_inspireValidator Relates to **geometa** object INSPIRE validation. Default is NULL

*Returns:* an object of class [XMLInternalNode-class](#) from **XML**

**Method** print(): Provides a custom print output (as tree) of the current class

*Usage:*

```
OGCAbstractObject$print(..., depth = 1)
```

*Arguments:*

... args

depth class nesting depth

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
OGCAbstractObject$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

abstract class used by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OGCEXpression

*OGCEXpression*

---

**Description**

OGCEXpression

OGCEXpression

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Expression

**Super class**

`ows4R:OGCAbstractObject` -> OGCExpression

**Methods****Public methods:**

- `OGCExpression$new()`
- `OGCExpression$setExprVersion()`
- `OGCExpression$getExprVersion()`
- `OGCExpression$clone()`

**Method** `new()`: Initializes an object of class `OGCExpression`

*Usage:*

```
OGCExpression$new(  
  element,  
  namespacePrefix,  
  attrs = NULL,  
  defaults = NULL,  
  exprVersion = "1.1.0"  
)
```

*Arguments:*

`element` element name  
`namespacePrefix` XML namespace prefix  
`attrs` attributes  
`defaults` default values  
`exprVersion` OGC version for the expression

**Method** `setExprVersion()`: Sets expression version. The methods will control proper XML namespace prefix setting

*Usage:*

```
OGCExpression$setExprVersion(exprVersion)
```

*Arguments:*

`exprVersion` OGC expression version

**Method** `getExprVersion()`: Gets expression version

*Usage:*

```
OGCExpression$getExprVersion()
```

*Returns:* object of class character

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OGCExpression$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

abstract class

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OGCFilter

*OGCFilter*

---

**Description**

OGCFilter

OGCFilter

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Filter

**Super class**

[ows4R::OGCAbstractObject](#) -> OGCFilter

**Public fields**

expr OGC expression

**Methods****Public methods:**

- [OGCFilter\\$new\(\)](#)
- [OGCFilter\\$setFilterVersion\(\)](#)
- [OGCFilter\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OGCFilter](#).

*Usage:*

```
OGCFilter$new(expr, filterVersion = "1.1.0")
```

*Arguments:*

expr object of class [OGCExpression](#)

filterVersion OGC filter version. Default is "1.1.0"

**Method** [setFilterVersion\(\)](#): Sets the OGC filter version

*Usage:*

```
OGCFilter$setFilterVersion(filterVersion)
```

*Arguments:*

```
filterVersion OGC filter version
```

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OGCFilter$clone(deep = FALSE)
```

*Arguments:*

```
deep Whether to make a deep clone.
```

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
expr <- PropertyIsEqualTo$new(PropertyName = "property", Literal = "value")
not <- Not$new(expr)
not_xml <- not$encode() #see how it looks like in XML
```

---

Or

*Or*

---

**Description**

Or

Or

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an Or operator

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryLogicOpType](#) -> Or

## Methods

### Public methods:

- [Or\\$new\(\)](#)
- [Or\\$clone\(\)](#)

**Method** `new()`: Initializes an [Or](#) expression

*Usage:*

```
Or$new(...)
```

*Arguments:*

... list of objects of class [OGCExpression](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
Or$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

## Examples

```
expr1 <- PropertyIsEqualTo$new(PropertyName = "property1", Literal = "value1")
expr2 <- PropertyIsEqualTo$new(PropertyName = "property2", Literal = "value2")
or <- Or$new(expr1,expr2)
or_xml <- or$encode() #see how it looks like in XML
```

## Description

Provides an Interface to Web-Services defined as standards by the Open Geospatial Consortium (OGC), including Web Feature Service (WFS) for vector data, Web Coverage Service (WCS), Catalogue Service (CSW) for ISO/OGC metadata, and associated standards such as the common web-service specification (OWS) and OGC Filter Encoding. Partial support is provided for the Web Map Service (WMS) and Web Processing Service (WPS). The purpose is to add support for additional OGC service standards such as Web Coverage Processing Service (WCPS) or OGC API.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



**See Also**

Useful links:

- <https://github.com/eblondel/ows4R>
- <https://eblondel.github.io/ows4R/>
- <https://www.ogc.org/standards/>
- Report bugs at <https://github.com/eblondel/ows4R/issues>

---

OWSBoundingBox

*OWSBoundingBox*

---

**Description**

OWSBoundingBox

OWSBoundingBox

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC Bounding Box

**Super class**

[ows4R::OGCAbstractObject](#) -> OWSBoundingBox

**Public fields**

attrs attributes to be associated to XML

LowerCorner lower corner coordinates

UpperCorner upper corner coordinates

**Methods****Public methods:**

- [OWSBoundingBox\\$new\(\)](#)
- [OWSBoundingBox\\$decode\(\)](#)
- [OWSBoundingBox\\$getBBOX\(\)](#)
- [OWSBoundingBox\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSBoundingBox](#)

*Usage:*

```
OWSBoundingBox$new(  
  xml = NULL,  
  element = NULL,  
  namespacePrefix = NULL,  
  owsVersion,  
  serviceVersion,  
  logger = NULL  
)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

element element name

namespacePrefix namespace prefix

owsVersion OWS version

serviceVersion service version

logger logger

**Method** decode(): Decodes an object of class [OWSBoundingBox](#) from XML

*Usage:*

```
OWSBoundingBox$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from XML

**Method** getBBOX(): Get BBOX as object of class bbox from **sf** package

*Usage:*

```
OWSBoundingBox$getBBOX()
```

*Returns:* a numeric vector of length four, with xmin, ymin, xmax and ymax values

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
OWSBoundingBox$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

|                 |                           |
|-----------------|---------------------------|
| OWSCapabilities | <i>OWSGetCapabilities</i> |
|-----------------|---------------------------|

---

**Description**

OWSGetCapabilities

OWSGetCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an abstract OWS Get Capabilities document.

**Super class**

[ows4R::OGCAbstractObject](#) -> OWSCapabilities

**Methods****Public methods:**

- [OWSCapabilities\\$new\(\)](#)
- [OWSCapabilities\\$setClient\(\)](#)
- [OWSCapabilities\\$getClient\(\)](#)
- [OWSCapabilities\\$getUrl\(\)](#)
- [OWSCapabilities\\$getService\(\)](#)
- [OWSCapabilities\\$getServiceVersion\(\)](#)
- [OWSCapabilities\\$getOWSVersion\(\)](#)
- [OWSCapabilities\\$getRequest\(\)](#)
- [OWSCapabilities\\$getServiceIdentification\(\)](#)
- [OWSCapabilities\\$getServiceProvider\(\)](#)
- [OWSCapabilities\\$getOperationsMetadata\(\)](#)
- [OWSCapabilities\\$clone\(\)](#)

**Method new():** Initializes a [OWSCapabilities](#) object

*Usage:*

```
OWSCapabilities$new(  
  element = NULL,  
  namespacePrefix = NULL,  
  url,  
  service,  
  owsVersion,  
  serviceVersion,
```

```

    logger = NULL,
    ...
)

```

*Arguments:*

element element

namespacePrefix namespace prefix

url url

service service

owsVersion OWS version

serviceVersion service version

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method setClient():** Sets the OGC client

*Usage:*

```
OWSCapabilities$setClient(client)
```

*Arguments:*

client an object extending [OWSClient](#)

**Method getClient():** Get client

*Usage:*

```
OWSCapabilities$getClient()
```

*Arguments:*

an object extending [OWSClient](#)

**Method getUrl():** Get URL

*Usage:*

```
OWSCapabilities$getUrl()
```

*Returns:* an object of class character

**Method getService():** Get service

*Usage:*

```
OWSCapabilities$getService()
```

*Returns:* an object of class character

**Method getServiceVersion():** Get service version

*Usage:*

```
OWSCapabilities$getServiceVersion()
```

*Returns:* an object of class character

**Method getOWSVersion():** Get OWS version

*Usage:*

```
OWSCapabilities$getOWSVersion()
```

*Returns:* an object of class character

**Method** getRequest(): Get request

*Usage:*

OWSCapabilities\$request()

*Returns:* an object of class [OWSGetCapabilities](#)

**Method** getServiceIdentification(): Get service identification

*Usage:*

OWSCapabilities\$getServiceIdentification()

*Returns:* an object of class [OWSServiceIdentification](#)

**Method** getServiceProvider(): Get service provider

*Usage:*

OWSCapabilities\$getServiceProvider()

*Returns:* an object of class [OWSServiceProvider](#)

**Method** getOperationsMetadata(): Get service operations metadata

*Usage:*

OWSCapabilities\$getOperationsMetadata()

*Returns:* an object of class [OWSOperationsMetadata](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSCapabilities\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

abstract class used by **ows4R**

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSClient

*OWSClient*


---

### Description

OWSClient

OWSClient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing a Common OGC web-service.

### Super class

[ows4R::OGCAbstractObject](#) -> OWSClient

### Public fields

url Base url of the OWS service

version version of the OWS service

capabilities object giving the OWS service capabilities

### Methods

#### Public methods:

- [OWSClient\\$new\(\)](#)
- [OWSClient\\$getUrl\(\)](#)
- [OWSClient\\$getVersion\(\)](#)
- [OWSClient\\$getCapabilities\(\)](#)
- [OWSClient\\$getUser\(\)](#)
- [OWSClient\\$getPwd\(\)](#)
- [OWSClient\\$getToken\(\)](#)
- [OWSClient\\$getHeaders\(\)](#)
- [OWSClient\\$getConfig\(\)](#)
- [OWSClient\\$getCASUrl\(\)](#)
- [OWSClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a OWSClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
OWSClient$new(  
  url,  
  service,  
  serviceVersion,  
  user = NULL,  
  pwd = NULL,  
  token = NULL,  
  headers = c(),  
  config = httr::config(),  
  cas_url = NULL,  
  logger = NULL  
)
```

*Arguments:*

url url  
service service name  
serviceVersion CSW service version  
user user  
pwd password  
token token  
headers headers  
config config  
cas\_url Central Authentication Service (CAS) URL  
logger logger

**Method getUrl():** Get URL*Usage:*

```
OWSClient$getUrl()
```

*Returns:* the url of the service, object of class character

**Method getVersion():** Get version*Usage:*

```
OWSClient$getVersion()
```

*Returns:* the version of the service, object of class character

**Method getCapabilities():** Get capabilities*Usage:*

```
OWSClient$getCapabilities()
```

*Returns:* the capabilities, object of class [OWSCapabilities](#)

**Method getUser():** Get user*Usage:*

```
OWSClient$getUser()
```

*Returns:* the user, object of class character

**Method** getPwd(): Get password

*Usage:*

OWSClient\$getPwd()

*Returns:* the password, object of class character

**Method** getToken(): Get token

*Usage:*

OWSClient\$getToken()

*Returns:* the token, object of class character

**Method** getHeaders(): Get headers

*Usage:*

OWSClient\$getHeaders()

*Returns:* the headers, object of class character

**Method** getConfig(): Get **httr** config

*Usage:*

OWSClient\$config()

*Returns:* the **httr** config, if any

**Method** getCASUrl(): Get CAS URL

*Usage:*

OWSClient\$CASUrl()

*Returns:* a CAS URL

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSClient\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

Abstract class used internally by **ows4R**

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



---

OWSCodeType

*OWSCodeType*

---

**Description**

OWSCodeType

OWSCodeType

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OWS CodeType

**Super class**

[ows4R::OGCAbstractObject](#) -> OWSCodeType

**Public fields**

value code type

**Methods****Public methods:**

- [OWSCodeType\\$new\(\)](#)
- [OWSCodeType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSCodeType](#)

*Usage:*

```
OWSCodeType$new(xml = NULL, owsVersion = "1.1", value)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version. Default is "1.1"

value the code type

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
OWSCodeType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSEException

*OWSEException*

---

### Description

OWSEException

OWSEException

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a OWS Service exception

### Super class

[ows4R:OGCAbstractObject](#) -> OWSEException

### Public fields

ExceptionText exception text

### Methods

#### Public methods:

- [OWSEException\\$new\(\)](#)
- [OWSEException\\$getLocator\(\)](#)
- [OWSEException\\$getCode\(\)](#)
- [OWSEException\\$getText\(\)](#)
- [OWSEException\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSEException](#)

*Usage:*

`OWSEException$new(xmlObj, logger = NULL)`

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

logger logger

**Method** [getLocator\(\)](#): Get exception locator

*Usage:*

`OWSEException$getLocator()`

*Returns:* the exception locator, object of class character

**Method** getCode(): Get exception code

*Usage:*

OWSException\$getCode()

*Returns:* the exception code, object of class character

**Method** getText(): Get exception text explanation

*Usage:*

OWSException\$getText()

*Returns:* the exception text, object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSException\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSGetCapabilities      *OWSGetCapabilities*

---

#### Description

OWSGetCapabilities

OWSGetCapabilities

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a GetCapabilities request

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> OWSGetCapabilities

**Methods****Public methods:**

- [OWSGetCapabilities\\$new\(\)](#)
- [OWSGetCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes an [OWSGetCapabilities](#) service request

*Usage:*

```
OWSGetCapabilities$new(
  element = NULL,
  namespacePrefix = NULL,
  url,
  service,
  version,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  ...
)
```

*Arguments:*

element element  
 namespacePrefix namespace prefix  
 url url  
 service service name  
 version service version  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 ... any other parameter to pass to the request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSGetCapabilities$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a OWS GetCapabilities request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSHttpRequest

*OWSHttpRequest*

---

### Description

OWSHttpRequest

OWSHttpRequest

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a generic OWS http request

### Super class

[ows4R::OGCAbstractObject](#) -> OWSHttpRequest

### Methods

#### Public methods:

- [OWSHttpRequest\\$new\(\)](#)
- [OWSHttpRequest\\$execute\(\)](#)
- [OWSHttpRequest\\$getCapabilities\(\)](#)
- [OWSHttpRequest\\$getRequest\(\)](#)
- [OWSHttpRequest\\$getRequestHeaders\(\)](#)
- [OWSHttpRequest\\$status\(\)](#)
- [OWSHttpRequest\\$response\(\)](#)
- [OWSHttpRequest\\$exception\(\)](#)
- [OWSHttpRequest\\$hasException\(\)](#)
- [OWSHttpRequest\\$result\(\)](#)
- [OWSHttpRequest\\$setResult\(\)](#)
- [OWSHttpRequest\\$clone\(\)](#)

**Method new():** Initializes an OWS HTTP request

*Usage:*

```
OWSHttpRequest$new(  
  element,  
  namespacePrefix,  
  capabilities,  
  op,  
  type,  
  url,
```

```

    request,
    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    namedParams = NULL,
    attrs = NULL,
    contentType = "text/xml",
    mimeType = "text/xml",
    skipXmlComments = TRUE,
    logger = NULL,
    ...
)

```

*Arguments:*

element element  
 namespacePrefix namespace prefix  
 capabilities object of class or extending [OWSCapabilities](#)  
 op object of class [OWSOperation](#)  
 type type of request, eg. GET, POST  
 url url  
 request request name  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 namedParams a named list  
 attrs attributes  
 contentType content type. Default value is "text/xml"  
 mimeType mime type. Default value is "text/xml"  
 skipXmlComments Skip XML comments from response  
 logger logger  
 ... any other parameter

**Method** `execute()`: Executes the request

*Usage:*

```
OWSHttpRequest$execute()
```

**Method** `getCapabilities()`: Get capabilities

*Usage:*

```
OWSHttpRequest$getCapabilities()
```

*Returns:* an object of class or extending [OWSCapabilities](#)

**Method** `getRequest()`: Get request

*Usage:*

`OWSHttpRequest$request()`

*Returns:* the request

**Method** `getRequestHeaders():` Get request headers

*Usage:*

`OWSHttpRequest$requestHeaders()`

*Returns:* the request headers

**Method** `getStatus():` get status code

*Usage:*

`OWSHttpRequest$status()`

*Returns:* the request status code

**Method** `getResponse():` get request response

*Usage:*

`OWSHttpRequest$response()`

*Returns:* the request response

**Method** `getException():` get request exception

*Usage:*

`OWSHttpRequest$exception()`

*Returns:* the request exception

**Method** `hasException():` Indicates if it has an exception

*Usage:*

`OWSHttpRequest$hasException()`

*Returns:* TRUE if it has an exception, FALSE otherwise

**Method** `getResult():` Get the result TRUE if the request is successful, FALSE otherwise

*Usage:*

`OWSHttpRequest$result()`

*Returns:* the result, object of class logical

**Method** `setResult():` Set the result

*Usage:*

`OWSHttpRequest$result(result)`

*Arguments:*

result object of class logical

**Method** `clone():` The objects of this class are cloneable with this method.

*Usage:*

`OWSHttpRequest$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

**Note**

Abstract class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OwsNamespace

*OwsNamespace*

---

**Description**

OwsNamespace

OwsNamespace

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OWS Namespace

**Public fields**

id namespace id

uri namespace uri

**Methods****Public methods:**

- [OwsNamespace\\$new\(\)](#)
- [OwsNamespace\\$getDefinition\(\)](#)
- [OwsNamespace\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an [OwsNamespace](#)

*Usage:*

[OwsNamespace\\$new](#)(id, uri)

*Arguments:*

id id

uri uri

**Method** [getDefinition\(\)](#): Get namespace definition

*Usage:*

[OwsNamespace\\$getDefinition](#)()



*Returns:* a named list with id and uri

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
OWSNamespace$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

### Note

class used internally by ows4R for specifying XML namespaces

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSOperation

*OWSOperation*

---

### Description

OWSOperation

OWSOperation

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC Operation

### Methods

#### Public methods:

- [OWSOperation\\$new\(\)](#)
- [OWSOperation\\$getName\(\)](#)
- [OWSOperation\\$getParameters\(\)](#)
- [OWSOperation\\$getParameter\(\)](#)
- [OWSOperation\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [OWSOperation](#).

*Usage:*

```
OWSOperation$new(xmlObj, owsVersion, serviceVersion)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**  
owsVersion OWS version  
serviceVersion service version

**Method** getName(): Get operation name

*Usage:*

OWSOperation\$getName()

*Returns:* an object of class character

**Method** getParameters(): Get parameters

*Usage:*

OWSOperation\$getParameters()

*Returns:* the parameters

**Method** getParameter(): Get parameter

*Usage:*

OWSOperation\$getParameter(name)

*Arguments:*

name name

*Returns:* the parameter

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSOperation\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### **Note**

Internal class used internally by **ows4R** when reading capabilities documents

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSOperationsMetadata *OWSOperationsMetadata*

---

### Description

OWSOperationsMetadata

OWSOperationsMetadata

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC Operations Metadata

### Methods

#### Public methods:

- [OWSOperationsMetadata\\$new\(\)](#)
- [OWSOperationsMetadata\\$getOperations\(\)](#)
- [OWSOperationsMetadata\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an [OWSOperationsMetadata](#) object

*Usage:*

```
OWSOperationsMetadata$new(xmlObj, owsVersion, serviceVersion)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method** [getOperations\(\)](#): Get operations

*Usage:*

```
OWSOperationsMetadata$getOperations()
```

*Returns:* a list of [OWSOperation](#)

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
OWSOperationsMetadata$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Abstract class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSRequest

*OWSRequest*

---

**Description**

OWSRequest

OWSRequest

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a OWS Service Capability Request

**Super class**

[ows4R: :OGCAbstractObject](#) -> OWSRequest

**Methods****Public methods:**

- [OWSRequest\\$new\(\)](#)
- [OWSRequest\\$getName\(\)](#)
- [OWSRequest\\$getFormats\(\)](#)
- [OWSRequest\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSRequest](#)

*Usage:*

[OWSRequest\\$new\(xmlObj, capabilities, version, logger = NULL\)](#)

*Arguments:*

[xmlObj](#) object of class [XMLInternalNode-class](#) from **XML**  
[capabilities](#) an object of class or extending [OWSCapabilities](#)  
[version](#) version  
[logger](#) logger

**Method** [getName\(\)](#): Get request name

*Usage:*

[OWSRequest\\$getName\(\)](#)

*Returns:* the name, object of class character

**Method** getFormats(): Get request formats

*Usage:*

OwsRequest\$getFormats()

*Returns:* the formats, object (vector) of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OwsRequest\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

Abstract class used by **ows4R**

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

OWSServiceIdentification

*OWSServiceIdentification*

---

### Description

OWSServiceIdentification

OWSServiceIdentification

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC Service Identification

### Methods

#### Public methods:

- [OWSServiceIdentification\\$new\(\)](#)
- [OWSServiceIdentification\\$name\(\)](#)
- [OWSServiceIdentification\\$title\(\)](#)
- [OWSServiceIdentification\\$abstract\(\)](#)
- [OWSServiceIdentification\\$keywords\(\)](#)
- [OWSServiceIdentification\\$onlineResource\(\)](#)

- [OWSServiceIdentification\\$getServiceType\(\)](#)
- [OWSServiceIdentification\\$getServiceTypeVersion\(\)](#)
- [OWSServiceIdentification\\$getFees\(\)](#)
- [OWSServiceIdentification\\$getAccessConstraints\(\)](#)
- [OWSServiceIdentification\\$clone\(\)](#)

**Method new():** Initializes an object of class [OWSServiceIdentification](#)

*Usage:*

```
OWSServiceIdentification$new(xmlObj, owsVersion, serviceVersion)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from **XML**

owsVersion OWS version

serviceVersion service version

**Method getName():** Get service identification - name

*Usage:*

```
OWSServiceIdentification$getName()
```

*Returns:* the name, object of class character

**Method getTitle():** Get service identification - title

*Usage:*

```
OWSServiceIdentification$getTitle()
```

*Returns:* the title, object of class character

**Method getAbstract():** Get service identification - abstract

*Usage:*

```
OWSServiceIdentification$getAbstract()
```

*Returns:* the abstract, object of class character

**Method getKeywords():** Get service identification - keywords

*Usage:*

```
OWSServiceIdentification$getKeywords()
```

*Returns:* the keywords, object of class character

**Method getOnlineResource():** Get service identification - online resource

*Usage:*

```
OWSServiceIdentification$getOnlineResource()
```

*Returns:* the online resource, object of class character

**Method getServiceType():** Get service identification - service type

*Usage:*

```
OWSServiceIdentification$getServiceType()
```

*Returns:* the service type, object of class character

**Method** getServiceTypeVersion(): Get service identification - service type version

*Usage:*

OWSServiceIdentification\$getServiceTypeVersion()

*Returns:* the service type version, object of class character

**Method** getFees(): Get service identification - fees

*Usage:*

OWSServiceIdentification\$getFees()

*Returns:* the fees, object of class character

**Method** getAccessConstraints(): Get service identification - access constraints

*Usage:*

OWSServiceIdentification\$getAccessConstraints()

*Returns:* the access constraints, object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

OWSServiceIdentification\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

OWSServiceProvider      *OWSServiceProvider*

---

#### Description

OWSServiceProvider

OWSServiceProvider

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling an OGC Service Provider

## Methods

### Public methods:

- [OWSServiceProvider\\$new\(\)](#)
- [OWSServiceProvider\\$getProviderName\(\)](#)
- [OWSServiceProvider\\$getProviderSite\(\)](#)
- [OWSServiceProvider\\$getServiceContact\(\)](#)
- [OWSServiceProvider\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSServiceProvider](#)

*Usage:*

`OWSServiceProvider$new(xmlObj, owsVersion, serviceVersion)`

*Arguments:*

`xmlObj` object of class [XMLInternalNode-class](#) from **XML**

`owsVersion` OWS version

`serviceVersion` service version

**Method** [getProviderName\(\)](#): Get provider name

*Usage:*

`OWSServiceProvider$getProviderName()`

*Arguments:*

the provider name, object of class character

**Method** [getProviderSite\(\)](#): Get provider site

*Usage:*

`OWSServiceProvider$getProviderSite()`

*Arguments:*

the provider site, object of class character

**Method** [getServiceContact\(\)](#): Get provider contact

*Usage:*

`OWSServiceProvider$getServiceContact()`

*Arguments:*

the provider contact, object of class [ISOResponsibleParty](#) from **geometa**

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

`OWSServiceProvider$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

## Note

Abstract class used internally by **ows4R**

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>



---

OWSUtils

*OWSUtils*

---

**Description**

OWSUtils

**Usage**

OWSUtils

**Format**

[R6Class](#) object.

**Value**

set of OWS Utilities

**Static methods**

`getNamespaces()` Get the namespaces associated to a given XML object  
`findNamespace(namespaces, id, uri)` Finds a namespace by id or by URI  
`toBBOX(xmin, xmax, ymin, ymax)` Creates a bbox matrix from min/max x/y coordinates  
`findP4s(srsName, morphToESRI)` Finds the PROJ4 string definition for a given srsName  
`toCRS(srsName)` Converts a srsName into a CRS object  
`toEPSG(crs)` Get the EPSG code from a CRS object  
`getAspectRatio(bbox)` Get the aspect ratio for a given bbox

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
#toBBOX
bbox <- OWSUtils$toBBOX(-180,-90,180,90)

#toCRS
crs <- OWSUtils$toCRS("EPSG:4326")
```

---

OWSWG84BoundingBox    *OWSWG84BoundingBox*

---

### Description

OWSWG84BoundingBox

OWSWG84BoundingBox

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC WS84 BoundingBox

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSBoundingBox](#) -> OWSWG84BoundingBox

### Methods

#### Public methods:

- [OWSWG84BoundingBox\\$new\(\)](#)
- [OWSWG84BoundingBox\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [OWSBoundingBox](#)

*Usage:*

```
OWSWG84BoundingBox$new(xml = NULL, owsVersion, serviceVersion, logger = NULL)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

owsVersion OWS version

serviceVersion service version

logger logger

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
OWSWG84BoundingBox$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **geometa**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

PropertyIsBetween      *PropertyIsBetween*

---

**Description**

PropertyIsBetween

PropertyIsBetween

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsBetween

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> PropertyIsBetween

**Public fields**

PropertyName property name field for XML encoding

lower lower value

upper upper value

**Methods****Public methods:**

- [PropertyIsBetween\\$new\(\)](#)
- [PropertyIsBetween\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsLike](#)

*Usage:*

`PropertyIsBetween$new(PropertyName, lower, upper)`

*Arguments:*

PropertyName property name

lower lower value

upper upper value

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`PropertyIsBetween$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsBetween$new(PropertyName = "property", lower = 1, upper = 10)
expr_xml <- expr$encode() #see how it looks like in XML
```

---

|                   |                          |
|-------------------|--------------------------|
| PropertyIsEqualTo | <i>PropertyIsEqualTo</i> |
|-------------------|--------------------------|

---

**Description**

PropertyIsEqualTo

PropertyIsEqualTo

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsEqualTo

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCExpression](#) -> [ows4R::BinaryComparisonOpType](#)  
-> PropertyIsEqualTo

**Methods****Public methods:**

- [PropertyIsEqualTo\\$new\(\)](#)
- [PropertyIsEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsEqualTo](#)

*Usage:*

```
PropertyIsEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$new(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsGreaterThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsGreaterThanOrEqualTo *PropertyIsGreaterThanOrEqualTo*

---

**Description**

PropertyIsGreaterThanOrEqualTo

PropertyIsGreaterThanOrEqualTo

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsGreaterThanOrEqualTo

**Super classes**

```
ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType
-> PropertyIsGreaterThanOrEqualTo
```

**Methods****Public methods:**

- [PropertyIsGreaterThanOrEqualTo\\$new\(\)](#)
- [PropertyIsGreaterThanOrEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsGreaterThanOrEqualTo](#)

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name  
 Literal literal  
 matchCase match case

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
expr <- PropertyIsGreaterThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsGreaterThanOrEqualTo  
*PropertyIsGreaterThanOrEqualTo*

---

### Description

PropertyIsGreaterThanOrEqualTo  
 PropertyIsGreaterThanOrEqualTo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an PropertyIsGreaterThanOrEqualTo

### Super classes

```
ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType
-> PropertyIsGreaterThanOrEqualTo
```

**Methods****Public methods:**

- [PropertyIsGreaterThanOrEqualTo\\$new\(\)](#)
- [PropertyIsGreaterThanOrEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsGreaterThanOrEqualTo](#)

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsGreaterThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsGreaterThanOrEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsLessThan      *PropertyIsLessThan*

---

**Description**

PropertyIsLessThan

PropertyIsLessThan

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsLessThan

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OGCEXpression -> ows4R::BinaryComparisonOpType  
 -> PropertyIsLessThan

**Methods****Public methods:**

- [PropertyIsLessThan\\$new\(\)](#)
- [PropertyIsLessThan\\$clone\(\)](#)

**Method new():** Initializes an object extending [PropertyIsLessThan](#)

*Usage:*

```
PropertyIsLessThan$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsLessThan$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsLessThan$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsLessThanOrEqualTo

*PropertyIsLesserThanOrEqualTo*

---

**Description**

PropertyIsLesserThanOrEqualTo

PropertyIsLesserThanOrEqualTo



**Format**

R6Class object.

**Value**

Object of R6Class for modelling an PropertyIsLesserThanOrEqualTo

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType  
-> PropertyIsLessThanOrEqualTo

**Methods****Public methods:**

- PropertyIsLessThanOrEqualTo\$new()
- PropertyIsLessThanOrEqualTo\$clone()

**Method** new(): Initializes an object extending PropertyIsLessThanOrEqualTo

*Usage:*

```
PropertyIsLessThanOrEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsLessThanOrEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsLessThanOrEqualTo$new(PropertyName = "property", Literal = "value")  
expr_xml <- expr$encode() #see how it looks like in XML
```

---

 PropertyIsLike

*PropertyIsLike*


---

**Description**

PropertyIsLike

PropertyIsLike

**Format**

R6Class object.

**Value**

Object of R6Class for modelling an PropertyIsLike

**Super classes**

ows4R::OGCAbstractObject -&gt; ows4R::OGCExpression -&gt; PropertyIsLike

**Public fields**

PropertyName property name field for XML encoding

Literal literal field for XML encoding

attrs attributes for XML encoding

**Methods****Public methods:**

- [PropertyIsLike\\$new\(\)](#)
- [PropertyIsLike\\$clone\(\)](#)

**Method** new(): Initializes an object extending [PropertyIsLike](#)*Usage:*

```
PropertyIsLike$new(
  PropertyName,
  Literal,
  escapeChar = "\\\"",
  singleChar = "_",
  wildCard = "%",
  matchCase = NA
)
```

*Arguments:*

PropertyName property name

Literal literal

escapeChar escape character. Default is "\"  
 singleChar single character. Default is "\_"  
 wildCard wildcard  
 matchCase match case

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsLike$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

### Examples

```
expr <- PropertyIsLike$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsNotEqualTo *PropertyIsNotEqualTo*

---

### Description

PropertyIsNotEqualTo

PropertyIsNotEqualTo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an PropertyIsNotEqualTo

### Super classes

```
ows4R::OGCAbstractObject -> ows4R::OGCExpression -> ows4R::BinaryComparisonOpType
-> PropertyIsNotEqualTo
```

**Methods****Public methods:**

- [PropertyIsNotEqualTo\\$new\(\)](#)
- [PropertyIsNotEqualTo\\$clone\(\)](#)

**Method** `new()`: Initializes an object extending [PropertyIsNotEqualTo](#)

*Usage:*

```
PropertyIsNotEqualTo$new(PropertyName, Literal, matchCase = NA)
```

*Arguments:*

PropertyName property name

Literal literal

matchCase match case

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsNotEqualTo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
expr <- PropertyIsNotEqualTo$new(PropertyName = "property", Literal = "value")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

PropertyIsNull

*PropertyIsNull*

---

**Description**

PropertyIsNull

PropertyIsNull

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an PropertyIsNull

**Super classes**

`ows4R::OGCAbstractObject` -> `ows4R::OGCExpression` -> `PropertyIsNull`

**Public fields**

`PropertyName` property name field for XML encoding

**Methods****Public methods:**

- `PropertyIsNull$new()`
- `PropertyIsNull$clone()`

**Method** `new()`: Initializes an object extending `PropertyIsLike`

*Usage:*

```
PropertyIsNull$new(PropertyName)
```

*Arguments:*

`PropertyName` property name

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
PropertyIsNull$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

**Examples**

```
expr <- PropertyIsNull$new(PropertyName = "property")
expr_xml <- expr$encode() #see how it looks like in XML
```

---

`registerOWSNamespace` *registerOWSNamespace*

---

**Description**

`registerOWSNamespace` allows to register a new namespace in **ows4R**

**Usage**

```
registerOWSNamespace(id, uri, force)
```

**Arguments**

|                    |   |
|--------------------|---|
| <code>id</code>    | prefix of the namespace   |
| <code>uri</code>   | URI of the namespace  |
| <code>force</code> | logical parameter indicating if registration has be to be forced in case the identified namespace is already registered |

**Author(s)**

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

**Examples**

```
registerOWSNamespace(id = "myprefix", uri = "http://someuri")
```

---

|                              |                        |
|------------------------------|------------------------|
| <code>setOWSNamespace</code> | <i>setOWSNamespace</i> |
|------------------------------|------------------------|

---

**Description**

`setOWSNamespace`

**Usage**

`setOWSNamespace()`

---

|                               |                         |
|-------------------------------|-------------------------|
| <code>UnaryLogicOpType</code> | <i>UnaryLogicOpType</i> |
|-------------------------------|-------------------------|

---

**Description**

`UnaryLogicOpType`

`UnaryLogicOpType`

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an `UnaryLogicOpType`

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OGCEXpression](#) -> `UnaryLogicOpType`

**Public fields**

operations a list OGC expressions

**Methods****Public methods:**

- [UnaryLogicOpType\\$new\(\)](#)
- [UnaryLogicOpType\\$setExprVersion\(\)](#)
- [UnaryLogicOpType\\$clone\(\)](#)

**Method** `new()`: Initializes a [UnaryLogicOpType](#) expression

*Usage:*

```
UnaryLogicOpType$new(..., element, namespacePrefix, exprVersion = "1.1.0")
```

*Arguments:*

... list of objects of class [OGCExpression](#)

element element

namespacePrefix namespacePrefix

exprVersion OGC expression version. Default is "1.1.0"

**Method** `setExprVersion()`: Sets expression version. The methods will control that expression versions are set for each of the operations specified in the expression.

*Usage:*

```
UnaryLogicOpType$setExprVersion(exprVersion)
```

*Arguments:*

exprVersion OGC expression version

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
UnaryLogicOpType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

abstract super class of all the unary logical operation classes

---

|                 |                        |
|-----------------|------------------------|
| WCSCapabilities | <i>WCSCapabilities</i> |
|-----------------|------------------------|

---

**Description**

WCSCapabilities

WCSCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Coverage Service Get Capabilities document.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WCSCapabilities

**Methods****Public methods:**

- [WCSCapabilities\\$new\(\)](#)
- [WCSCapabilities\\$getCoverageSummaries\(\)](#)
- [WCSCapabilities\\$findCoverageSummaryById\(\)](#)
- [WCSCapabilities\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WCSCapabilities](#) object

*Usage:*

```
WCSCapabilities$new(url, version, client = NULL, logger = NULL, ...)
```

*Arguments:*

url url

version version

client an object of class [WCSCClient](#)

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** [getCoverageSummaries\(\)](#): Get coverage summaries

*Usage:*

```
WCSCapabilities$getCoverageSummaries()
```

*Returns:* a list of [WCSCoverageSummary](#) objects



**Method** findCoverageSummaryById(): Finds a coverage by name

*Usage:*

```
WCSCapabilities$findCoverageSummaryById(expr, exact = FALSE)
```

*Arguments:*

expr expr

exact exact matching? Default is TRUE

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WCSCapabilities$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

### Examples

```
## Not run:
  WCSCapabilities$new("http://localhost:8080/geoserver/wcs", serviceVersion = "2.0.1")

## End(Not run)
```

---

WCSCient

*WCSCient*

---

### Description

WCSCient

WCSCient

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Coverage Service.

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCient](#) -> WCSCient

## Methods

### Public methods:

- [WCSClient\\$new\(\)](#)
- [WCSClient\\$getCapabilities\(\)](#)
- [WCSClient\\$reloadCapabilities\(\)](#)
- [WCSClient\\$describeCoverage\(\)](#)
- [WCSClient\\$getCoverage\(\)](#)
- [WCSClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a [WCSClient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

#### Usage:

```
WCSClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

#### Arguments:

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
config config
cas_url Central Authentication Service (CAS) URL
logger logger
```

**Method getCapabilities():** Get WCS capabilities

#### Usage:

```
WCSClient$getCapabilities()
```

*Returns:* an object of class [WCSCapabilities](#)

**Method reloadCapabilities():** Reloads WCS capabilities

#### Usage:

WCSClient\$reloadCapabilities()

**Method describeCoverage():** Describes coverage

*Usage:*

WCSClient\$describeCoverage(identifier)

*Arguments:*

identifier identifier

*Returns:* an object of class [WCSCoverageDescription](#)

**Method getCoverage():** Get coverage

*Usage:*

```
WCSClient$getCoverage(
  identifier,
  bbox = NULL,
  crs = NULL,
  time = NULL,
  format = NULL,
  rangesubset = NULL,
  gridbaseCRS = NULL,
  gridtype = NULL,
  gridCS = NULL,
  gridorigin = NULL,
  gridoffsets = NULL,
  method = "GET",
  filename = NULL,
  ...
)
```

*Arguments:*

identifier Coverage identifier. Object of class character

bbox bbox. Object of class matrix. Default is NULL. eg. `OWSUtils$toBBOX(-180,180,-90,90)`

crs crs. Object of class character giving the CRS identifier (EPSG prefixed code, or URI/URN). Default is NULL.

time time. Object of class character representing time instant/period. Default is NULL

format format. Object of class character Default will be GeoTIFF, coded differently depending on the WCS version.

rangesubset rangesubset. Default is NULL

gridbaseCRS grid base CRS. Default is NULL

gridtype grid type. Default is NULL

gridCS grid CS. Default is NULL

gridorigin grid origin. Default is NULL

gridoffsets grid offsets. Default is NULL

method method to get coverage, either 'GET' or 'POST' (experimental - under development). Object of class character.

filename filename. Object of class character. Optional filename to download the coverage

... any other argument to [WCSGetCoverage](#)  
 elevation elevation. Object of class character or numeric. Default is NULL

*Returns:* an object of class SpatRaster from **terra**

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WCSClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

### Examples

```
## Not run:
  wcs <- WCSClient$new("http://localhost:8080/geoserver/wcs", serviceVersion = "2.0.1")

## End(Not run)
```

---

WCSCoverage

*WCSCoverage*

---

### Description

WCSCoverage

WCSCoverage

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage

### Super class

[ows4R::OGCAbstractObject](#) -> WCSCoverage

### Public fields

description description

**Methods****Public methods:**

- [WCSCoverage\\$new\(\)](#)
- [WCSCoverage\\$getIdentifier\(\)](#)
- [WCSCoverage\\$getTitle\(\)](#)
- [WCSCoverage\\$getAbstract\(\)](#)
- [WCSCoverage\\$getReference\(\)](#)
- [WCSCoverage\\$getData\(\)](#)
- [WCSCoverage\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverage](#)

*Usage:*

```
WCSCoverage$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#)

serviceVersion WCS service version

owsVersion OWS version

logger logger

**Method** [getIdentifier\(\)](#): Get identifier

*Usage:*

```
WCSCoverage$getIdentifier()
```

*Returns:* an object of class character

**Method** [getTitle\(\)](#): Get title

*Usage:*

```
WCSCoverage$getTitle()
```

*Returns:* an object of class character

**Method** [getAbstract\(\)](#): Get abstract

*Usage:*

```
WCSCoverage$getAbstract()
```

*Returns:* an object of class character

**Method** [getReference\(\)](#): Get reference

*Usage:*

```
WCSCoverage$getReference()
```

*Returns:* an object of class character

**Method** [getData\(\)](#): Get data

*Usage:*

```
WCSCoverage$getData(filename = NULL)
```

*Arguments:*

filename filename. Optional file name where to download the coverage

*Returns:* an object of class SpatRaster from **terra**

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WCSCoverage$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by ows4R.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageDescription

*WCSCoverageDescription*

---

**Description**

WCSCoverageDescription

WCSCoverageDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS coverage summary

**Super classes**

```
geometa::geometaLogger -> geometa::ISOAbstractObject -> geometa::GMLAbstractObject  
-> geometa::GMLAbstractFeature -> geometa::GMLAbstractCoverage -> geometa::GMLCOVAbstractCoverage  
-> WCSCoverageDescription
```

**Public fields**

CoverageId coverage ID  
SupportedCRS supported CRS  
SupportedFormat supported Format  
Domain domain  
Range range  
ServiceParameters service parameters

**Methods****Public methods:**

- [WCSCoverageDescription\\$new\(\)](#)
- [WCSCoverageDescription\\$getId\(\)](#)
- [WCSCoverageDescription\\$getSupportedCRS\(\)](#)
- [WCSCoverageDescription\\$getSupportedFormats\(\)](#)
- [WCSCoverageDescription\\$getDomain\(\)](#)
- [WCSCoverageDescription\\$getRange\(\)](#)
- [WCSCoverageDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageDescription](#)

*Usage:*

`WCSCoverageDescription$new(xmlObj, serviceVersion, owsVersion, logger = NULL)`

*Arguments:*

`xmlObj` an object of class [XMLInternalNode-class](#) to initialize from XML

`serviceVersion` service version

`owsVersion` OWS version

`logger` logger

**Method** [getId\(\)](#): `getId`

*Usage:*

`WCSCoverageDescription$getId()`

*Returns:* the coverage id, object of class character

**Method** [getSupportedCRS\(\)](#): `getSupported CRS`. Applies to WCS 1 coverage descriptions

*Usage:*

`WCSCoverageDescription$getSupportedCRS()`

**Method** [getSupportedFormats\(\)](#): `get supported formats`. Applies to WCS 1 coverage descriptions

*Usage:*

`WCSCoverageDescription$getSupportedFormats()`

**Method** [getDomain\(\)](#): `get domain`. Applies to WCS 1 coverage descriptions

*Usage:*

WCSCoverageDescription\$getDomain()

**Method** getRange(): get range. Applies to WCS 1.0 coverage descriptions

*Usage:*

WCSCoverageDescription\$getRange()

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WCSCoverageDescription\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by ows4R.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WCSCoverageDomain

*WCSCoverageDomain*

---

### Description

WCSCoverageDomain

WCSCoverageDomain

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage domain

### Super class

[ows4R::OGCAbstractObject](#) -> WCSCoverageDomain

### Public fields

spatialDomain spatial domain

temporalDomain temporal domain



**Methods****Public methods:**

- [WCSCoverageDomain\\$new\(\)](#)
- [WCSCoverageDomain\\$getSpatialDomain\(\)](#)
- [WCSCoverageDomain\\$getTemporalDomain\(\)](#)
- [WCSCoverageDomain\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageDomain](#)

*Usage:*

```
WCSCoverageDomain$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML

serviceVersion service version

owsVersion OWS version

logger logger

**Method** [getSpatialDomain\(\)](#): Get spatial domain

*Usage:*

```
WCSCoverageDomain$getSpatialDomain()
```

*Returns:* object of class [WCSCoverageSpatialDomain](#)

**Method** [getTemporalDomain\(\)](#): Get spatial domain

*Usage:*

```
WCSCoverageDomain$getTemporalDomain()
```

*Returns:* object of class [WCSCoverageTemporalDomain](#)

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WCSCoverageDomain$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by ows4R.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageFilenameHandler

*WCSCoverageFilenameHandler*

---

### Description

WCSCoverageFilenameHandler provides a coverage filename handler for coverage download

### Usage

WCSCoverageFilenameHandler(identifier, time, elevation, bbox, format)

### Arguments

|            |                     |
|------------|---------------------|
| identifier | coverage identifier |
| time       | time                |
| elevation  | elevation           |
| bbox       | bbox                |
| format     | format              |

### Value

the filename to use for coverage download

### Author(s)

Emmanuel Blondel, <emmanuel.blondel1@gmail.com>

---

WCSCoverageSpatialDomain

*WCSCoverageSpatialDomain*

---

### Description

WCSCoverageSpatialDomain

WCSCoverageSpatialDomain

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage spatial domain

**Super class**

[ows4R::OGCAbstractObject](#) -> WCSCoverageSpatialDomain

**Public fields**

envelopes envelopes. For WCS 1.0  
 BoundingBox bounding box. For WCS 1.1  
 grids For WCS 1.0  
 GridCRS grid CRS. For WCS 1.1

**Methods****Public methods:**

- [WCSCoverageSpatialDomain\\$new\(\)](#)
- [WCSCoverageSpatialDomain\\$getEnvelopes\(\)](#)
- [WCSCoverageSpatialDomain\\$getBoundingBox\(\)](#)
- [WCSCoverageSpatialDomain\\$getGrids\(\)](#)
- [WCSCoverageSpatialDomain\\$getGridCRS\(\)](#)
- [WCSCoverageSpatialDomain\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageDomain](#)

*Usage:*

[WCSCoverageSpatialDomain\\$new\(xmlObj, serviceVersion, owsVersion, logger = NULL\)](#)

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
 serviceVersion service version  
 owsVersion OWS version  
 logger logger

**Method** [getEnvelopes\(\)](#): Get envelopes. Method that applies to WCS 1.0 only

*Usage:*

[WCSCoverageSpatialDomain\\$getEnvelopes\(\)](#)

*Returns:* a list of objects of class [GMLEnvelope](#) or [GMLEnvelopeWithTimePeriod](#)

**Method** [getBoundingBox\(\)](#): Get bounding boxes. Method that applies to WCS 1.1 only

*Usage:*

[WCSCoverageSpatialDomain\\$getBoundingBox\(\)](#)

*Returns:* a list of objects of class [OWSBoundingBox](#)

**Method** [getGrids\(\)](#): Get grids. Method that applies to WCS 1.0 only

*Usage:*

[WCSCoverageSpatialDomain\\$getGrids\(\)](#)

*Returns:* a list of objects of class [GMLGrid](#) or [GMLRectifiedGrid](#)

**Method** `getGridCRS()`: Get Grid CRS. Method that applies to WCS 1.1 only

*Usage:*

`WCSCoverageSpatialDomain$getGridCRS()`

*Returns:* a list of objects of class [WCSGridCRS](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WCSCoverageSpatialDomain$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

### Note

Class used internally by ows4R.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WCSCoverageSummary      *WCSCoverageSummary*

---

### Description

WCSCoverageSummary

WCSCoverageSummary

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) modelling a WCS coverage summary

### Super class

[ows4R::OGCAbstractObject](#) -> WCSCoverageSummary

### Public fields

CoverageId coverage id

CoverageSubtype coverage subtype

CoverageSubtypeParent coverage subtype parent

WGS84BoundingBox WGS84 bounding box

BoundingBox bounding box

**Methods****Public methods:**

- [WCSCoverageSummary\\$new\(\)](#)
- [WCSCoverageSummary\\$getId\(\)](#)
- [WCSCoverageSummary\\$getSubtype\(\)](#)
- [WCSCoverageSummary\\$getSubtypeParent\(\)](#)
- [WCSCoverageSummary\\$getWGS84BoundingBox\(\)](#)
- [WCSCoverageSummary\\$getBoundingBox\(\)](#)
- [WCSCoverageSummary\\$getDescription\(\)](#)
- [WCSCoverageSummary\\$getDimensions\(\)](#)
- [WCSCoverageSummary\\$getCoverage\(\)](#)
- [WCSCoverageSummary\\$getCoverageStack\(\)](#)
- [WCSCoverageSummary\\$clone\(\)](#)

**Method new():** Initializes a [WCSCoverageSummary](#) object

*Usage:*

```
WCSCoverageSummary$new(  
  xmlObj,  
  capabilities,  
  serviceVersion,  
  owsVersion,  
  logger = NULL  
)
```

*Arguments:*

xmlObj object of class [XMLInternalNode-class](#) from [XML](#)  
capabilities object of class [WCSCapabilities](#)  
serviceVersion WCS service version  
owsVersion version  
logger logger type NULL, "INFO" or "DEBUG"

**Method getId():** Get coverage ID

*Usage:*

```
WCSCoverageSummary$getId()
```

*Returns:* an object of class character

**Method getSubtype():** Get sub type

*Usage:*

```
WCSCoverageSummary$getSubtype()
```

*Returns:* an object of class character

**Method getSubtypeParent():** Get sub type parent

*Usage:*

```
WCSCoverageSummary$getSubtypeParent()
```

*Returns:* an object of class character

**Method** `getWGS84BoundingBox()`: Get bounding box

*Usage:*

```
WCSCoverageSummary$getWGS84BoundingBox()
```

*Returns:* an object of class [OWSWGS84BoundingBox](#)

**Method** `getBoundingBox()`: Get WGS84 bounding box

*Usage:*

```
WCSCoverageSummary$getBoundingBox()
```

*Returns:* an object of class [OWSBoundingBox](#)

**Method** `getDescription()`: Get description

*Usage:*

```
WCSCoverageSummary$getDescription()
```

*Returns:* an object of class [WCSCoverageDescription](#)

**Method** `getDimensions()`: Get dimensions

*Usage:*

```
WCSCoverageSummary$getDimensions()
```

*Returns:* the list of dimensions

**Method** `getCoverage()`: Get coverage data

*Usage:*

```
WCSCoverageSummary$getCoverage(
  bbox = NULL,
  crs = NULL,
  time = NULL,
  elevation = NULL,
  format = NULL,
  rangesubset = NULL,
  gridbaseCRS = NULL,
  gridtype = NULL,
  gridCS = NULL,
  gridorigin = NULL,
  gridoffsets = NULL,
  method = "GET",
  filename = NULL,
  ...
)
```

*Arguments:*

`bbox` `bbox`. Object of class matrix. Default is NULL. eg. `OWSUtils$toBBOX(-180,180,-90,90)`

`crs` `crs`. Object of class character giving the CRS identifier (EPSG prefixed code, or URI/URN). Default is NULL.

`time` `time`. Object of class character representing time instant/period. Default is NULL

elevation elevation. Object of class character or numeric. Default is NULL  
 format format. Object of class character Default will be GeoTIFF, coded differently depending on the WCS version.  
 rangesubset rangesubset. Default is NULL  
 gridbaseCRS grid base CRS. Default is NULL  
 gridtype grid type. Default is NULL  
 gridCS grid CS. Default is NULL  
 gridorigin grid origin. Default is NULL  
 gridoffsets grid offsets. Default is NULL  
 method method to get coverage, either 'GET' or 'POST' (experimental - under development).  
 Object of class character.  
 filename filename. Object of class character. Optional filename to download the coverage  
 ... any other argument to [WCSGetCoverage](#)  
*Returns:* an object of class SpatRaster from **terra**

**Method** `getCoverageStack()`: Get a spatio-temporal coverage data cubes as coverage [stack](#)

*Usage:*

```
WCSCoverageSummary$getCoverageStack(
  time = NULL,
  elevation = NULL,
  bbox = NULL,
  filename_handler = NULL,
  ...
)
```

*Arguments:*

time time  
 elevation elevation  
 bbox bbox  
 filename\_handler Optional filename handling function with arguments 'identifier', 'time', 'elevation', 'bbox', 'format' See [WCSCoverageFilenameHandler](#) as generic filename handler that can be used.  
 ... any other parameter to pass to `getCoverage`  
*Returns:* an object of class [stack](#) from **raster**

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSCoverageSummary$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

## Note

Class used internally by ows4R.

## Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSCoverageTemporalDomain  
*WCSCoverageTemporalDomain*

---

**Description**

WCSCoverageTemporalDomain  
WCSCoverageTemporalDomain

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS coverage temporal domain

**Super class**

[ows4R::OGCAbstractObject](#) -> WCSCoverageTemporalDomain

**Public fields**

instants instants  
periods periods

**Methods****Public methods:**

- [WCSCoverageTemporalDomain\\$new\(\)](#)
- [WCSCoverageTemporalDomain\\$getInstants\(\)](#)
- [WCSCoverageTemporalDomain\\$getPeriods\(\)](#)
- [WCSCoverageTemporalDomain\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WCSCoverageTemporalDomain](#)

*Usage:*

```
WCSCoverageTemporalDomain$new(  
  xmlObj,  
  serviceVersion,  
  owsVersion,  
  logger = NULL  
)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
serviceVersion service version



owsVersion OWS version  
logger logger

**Method** getInstants(): Get time instants

*Usage:*

WCSCoverageTemporalDomain\$getInstants()

*Returns:* a list of objects of class POSIXct

**Method** getPeriods(): Get time periods

*Usage:*

WCSCoverageTemporalDomain\$getPeriods()

*Returns:* a list of objects of class [GMLTimePeriod](#)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WCSCoverageTemporalDomain\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by ows4R.

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WCSDescribeCoverage    *WCSDescribeCoverage*

---

#### Description

WCSDescribeCoverage

WCSDescribeCoverage

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a WCS DescribeCoverage request

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WCSDescribeCoverage

**Methods****Public methods:**

- [WCSDescribeCoverage\\$new\(\)](#)
- [WCSDescribeCoverage\\$clone\(\)](#)

**Method** `new()`: Initializes a [WCSDescribeCoverage](#) service request

*Usage:*

```
WCSDescribeCoverage$new(
  capabilities,
  op,
  url,
  serviceVersion,
  coverageId,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [WCSCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from `capabilities`  
`url` url  
`serviceVersion` serviceVersion  
`coverageId` coverage ID  
`user` user  
`pwd` password  
`token` token  
`headers` headers  
`config` config  
`logger` logger  
`...` any parameter to pass to the service request

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSDescribeCoverage$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WCS DescribeCoverage request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSGetCoverage

*WCSGetCoverage*

---

**Description**

WCSGetCoverage

WCSGetCoverage

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WCS GetCoverage request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WCSGetCoverage

**Public fields**

CoverageId coverage identifier

format coverage format

**Methods****Public methods:**

- [WCSGetCoverage\\$new\(\)](#)
- [WCSGetCoverage\\$clone\(\)](#)

**Method new():** Initializes a [WCSGetCoverage](#) service request

*Usage:*

```
WCSGetCoverage$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion,  
  coverage,  
  envelope = NULL,  
  crs = NULL,  
  time = NULL,  
  elevation = NULL,
```

```

format = NULL,
rangesubset = NULL,
gridbaseCRS = NULL,
gridtype = NULL,
gridCS = NULL,
gridorigin = NULL,
gridoffsets = NULL,
user = NULL,
pwd = NULL,
token = NULL,
headers = c(),
config = htr::config(),
method = "GET",
logger = NULL,
...
)

```

*Arguments:*

capabilities an object of class [WCSCapabilities](#)  
op object of class [OWSOperation](#) as retrieved from capabilities  
url url  
serviceVersion serviceVersion  
coverage coverage, object of class [WCSCoverageSummary](#)  
envelope envelope  
crs crs  
time time  
elevation elevation  
format format  
rangesubset range subset  
gridbaseCRS grid base CRS  
gridtype grid type  
gridCS grid CS  
gridorigin grid origin  
gridoffsets grid offsets  
user user  
pwd password  
token token  
headers headers  
config config  
method method  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WCSGetCoverage$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WCS GetCoverage request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSGridCRS

*WCSGridCRS*

---

**Description**

WCSGridCRS

WCSGridCRS

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS grid CRS

**Super class**

[ows4R::OGCAbstractObject](#) -> WCSGridCRS

**Public fields**

GridBaseCRS grid base CRS

GridType grid type

GridOrigin grid origin

GridOffsets grid offsets

GridCS grid CS

**Methods****Public methods:**

- [WCSGridCRS\\$new\(\)](#)
- [WCSGridCRS\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [WCSGridCRS](#)

*Usage:*

```
WCSGridCRS$new(xmlObj, serviceVersion, owsVersion, logger = NULL)
```

*Arguments:*

`xmlObj` an object of class [XMLInternalNode-class](#) to initialize from XML  
`serviceVersion` service version  
`owsVersion` OWS version  
`logger` logger

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WCSGridCRS$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by ows4R.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WCSGSElevationDomain *WCSGSElevationDomain*

---

**Description**

WCSGSElevationDomain

WCSGSElevationDomain

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS geoserver elevation domain object

**Super classes**

[geometa::geometalLogger](#) -> [geometa::ISOAbstractObject](#) -> [WCSGSElevationDomain](#)

**Public fields**

SingleValue single values

**Methods****Public methods:**

- [WCSGSElevationDomain\\$decode\(\)](#)
- [WCSGSElevationDomain\\$clone\(\)](#)

**Method** [decode\(\)](#): Decodes from XML

*Usage:*

[WCSGSElevationDomain\\$decode\(xml\)](#)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

[WCSGSElevationDomain\\$clone\(deep = FALSE\)](#)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Experimental

**Author(s)**

Emmanuel Blondel <[emmanuel.blondell@gmail.com](mailto:emmanuel.blondell@gmail.com)>

---

WCSGSTimeDomain

*WCSGSTimeDomain*

---

**Description**

WCSGSTimeDomain

WCSGSTimeDomain

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WCS geoserver time domain object

**Super classes**

[geometa::geometaLogger](#) -> [geometa::ISOAbstractObject](#) -> [WCSGSTimeDomain](#)

**Public fields**

TimeInstant time instants

**Methods****Public methods:**

- [WCSGSTimeDomain\\$decode\(\)](#)
- [WCSGSTimeDomain\\$clone\(\)](#)

**Method** [decode\(\)](#): Decodes from XML

*Usage:*

[WCSGSTimeDomain\\$decode\(xml\)](#)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

[WCSGSTimeDomain\\$clone\(deep = FALSE\)](#)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Experimental

**Author(s)**

Emmanuel Blondel <[emmanuel.blondel1@gmail.com](mailto:emmanuel.blondel1@gmail.com)>



---

|                 |                        |
|-----------------|------------------------|
| WFSCapabilities | <i>WFSCapabilities</i> |
|-----------------|------------------------|

---

**Description**

WFSCapabilities

WFSCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Feature Service Get Capabilities document.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WFSCapabilities

**Methods****Public methods:**

- [WFSCapabilities\\$new\(\)](#)
- [WFSCapabilities\\$getFeatureTypes\(\)](#)
- [WFSCapabilities\\$findFeatureTypeByName\(\)](#)
- [WFSCapabilities\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WFSCapabilities](#) object

*Usage:*

```
WFSCapabilities$new(url, version, logger = NULL, ...)
```

*Arguments:*

url url

version version

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** [getFeatureTypes\(\)](#): List the feature types available. If pretty is TRUE, the output will be an object of class `data.frame`

*Usage:*

```
WFSCapabilities$getFeatureTypes(pretty = FALSE)
```

*Arguments:*

pretty whether the output should be summarized as `data.frame`

*Returns:* a list of [WFSFeatureType](#) or a `data.frame`

**Method** `findFeatureTypeByName()`: Finds a feature type by name

*Usage:*

```
WFSCapabilities$findFeatureTypeByName(expr, exact = TRUE)
```

*Arguments:*

`expr` `expr`

`exact` exact matching? Default is TRUE

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WFSCapabilities$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

#### Note

Class used to read a `WFSCapabilities` document. The use of `WFSClient` is recommended instead to benefit from the full set of capabilities associated to a WFS server.

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSClient

*WFSClient*

---

#### Description

WFSClient

WFSClient

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Feature Service.

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSClient](#) -> `WFSClient`

**Methods****Public methods:**

- [WFSCClient\\$new\(\)](#)
- [WFSCClient\\$getCapabilities\(\)](#)
- [WFSCClient\\$reloadCapabilities\(\)](#)
- [WFSCClient\\$describeFeatureType\(\)](#)
- [WFSCClient\\$getFeatures\(\)](#)
- [WFSCClient\\$getFeatureTypes\(\)](#)
- [WFSCClient\\$clone\(\)](#)

**Method** `new()`: This method is used to instantiate a [WFSCClient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WFSCClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

*Arguments:*

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
config config
cas_url Central Authentication Service (CAS) URL
logger logger
```

**Method** `getCapabilities()`: Get WFS capabilities

*Usage:*

```
WFSCClient$getCapabilities()
```

*Returns:* an object of class [WFSCapabilities](#)

**Method** `reloadCapabilities()`: Reloads WFS capabilities

*Usage:*

```
WFSCClient$reloadCapabilities()
```

**Method** describeFeatureType(): Describes a feature type

*Usage:*

```
WFSCClient$describeFeatureType(typeName)
```

*Arguments:*

typeName the name of the feature type

*Returns:* a list of [WFSFeatureTypeElement](#)

**Method** getFeatures(): Get features

*Usage:*

```
WFSCClient$getFeatures(typeName, ...)
```

*Arguments:*

typeName the name of the feature type

... any other parameter to pass to the [WFSGetFeature](#) request

*Returns:* features as object of class sf

**Method** getFeatureTypes(): List the feature types available. If pretty is TRUE, the output will be an object of class data.frame

*Usage:*

```
WFSCClient$getFeatureTypes(pretty = FALSE)
```

*Arguments:*

pretty whether the output should be summarized as data.frame

*Returns:* a list of [WFSFeatureType](#) or a data.frame

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WFSCClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
## Not run:
#example based on a WFS endpoint responding at http://localhost:8080/geoserver/wfs
wfs <- WFSCClient$new("http://localhost:8080/geoserver/wfs", serviceVersion = "1.1.1")

#get capabilities
caps <- wfs$getCapabilities()
```

```
#find feature type
ft <- caps$findFeatureTypeByName("mylayer")
if(length(ft)>0){
  data <- ft$getFeatures()
  data_with_filter <- ft$getFeatures(cql_filter = "somefilter")
}

#Advanced examples at https://github.com/eblondel/ows4R/wiki#wfs

## End(Not run)
```

---

WFSDescribeFeatureType

*WFSDescribeFeatureType*

---

## Description

WFSDescribeFeatureType

WFSDescribeFeatureType

## Format

[R6Class](#) object.

## Value

Object of [R6Class](#) for modelling a WFS DescribeFeatureType request

## Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WFSDescribeFeatureType

## Methods

### Public methods:

- [WFSDescribeFeatureType\\$new\(\)](#)
- [WFSDescribeFeatureType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WFSDescribeFeatureType](#) service request

*Usage:*

```
WFSDescribeFeatureType$new(
  capabilities,
  op,
  url,
  version,
  typeName,
```

```

    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    logger = NULL,
    ...
)

```

**Arguments:**

capabilities an object of class [WFSCapabilities](#)  
op object of class [OWSOperation](#) as retrieved from capabilities  
url url  
version service version  
typeName typeName  
user user  
pwd pwd  
token token  
headers headers  
config config  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WFSDescribeFeatureType$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Abstract class used by **ows4R** to trigger a WFS DescribeFeatureType request

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSFeatureType

*WFSFeatureType*

---

**Description**

WFSFeatureType

WFSFeatureType

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WFS feature type

**Super class**

[ows4R::OGCAbstractObject](#) -> WFSFeatureType

**Public fields**

description description

features features

**Methods****Public methods:**

- [WFSFeatureType\\$new\(\)](#)
- [WFSFeatureType\\$name\(\)](#)
- [WFSFeatureType\\$title\(\)](#)
- [WFSFeatureType\\$abstract\(\)](#)
- [WFSFeatureType\\$keywords\(\)](#)
- [WFSFeatureType\\$defaultCRS\(\)](#)
- [WFSFeatureType\\$boundingBox\(\)](#)
- [WFSFeatureType\\$description\(\)](#)
- [WFSFeatureType\\$hasGeometry\(\)](#)
- [WFSFeatureType\\$geometryType\(\)](#)
- [WFSFeatureType\\$featuresCRS\(\)](#)
- [WFSFeatureType\\$features\(\)](#)
- [WFSFeatureType\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WFSFeatureType](#)

*Usage:*

```
WFSFeatureType$new(xmlObj, capabilities, version, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML

capabilities object of class [WFSCapabilities](#)

version service version

logger logger

**Method** [getName\(\)](#): Get feature type name

*Usage:*

```
WFSFeatureType$name()
```

*Arguments:*

object of class character

**Method getTitle():** Get feature type title

*Usage:*

WFSFeatureType\$title()

*Arguments:*

object of class character

**Method getAbstract():** Get feature type abstract

*Usage:*

WFSFeatureType\$getAbstract()

*Arguments:*

object of class character

**Method getKeywords():** Get feature type keywords

*Usage:*

WFSFeatureType\$getKeywords()

*Arguments:*

object of class character

**Method getDefaultCRS():** Get feature type default CRS

*Usage:*

WFSFeatureType\$getDefaultCRS()

*Arguments:*

object of class character

**Method getBoundingBox():** Get feature type bounding box

*Usage:*

WFSFeatureType\$getBoundingBox()

*Arguments:*

object of class matrix

**Method getDescription():** Describes a feature type

*Usage:*

WFSFeatureType\$getDescription(pretty = FALSE)

*Arguments:*

pretty pretty whether to return a prettified data.frame. Default is FALSE

*Returns:* a list of [WFSFeatureTypeElement](#) or data.frame

**Method hasGeometry():** Indicates with feature type has a geometry

*Usage:*



WFSFeatureType\$hasGeometry()

Returns: object of class [logical](#)

**Method** getGeometryType(): Get geometry type

Usage:

WFSFeatureType\$getGeometryType()

Returns: object of class [character](#) representing the geometry tpe

**Method** getFeaturesCRS(): Inherits features CRS

Usage:

WFSFeatureType\$getFeaturesCRS(obj)

Arguments:

obj features object

Returns: object of class [integer](#)

**Method** getFeatures(): Get features

Usage:

```
WFSFeatureType$getFeatures(
  ...,
  validate = TRUE,
  outputFormat = NULL,
  paging = FALSE,
  paging_length = 1000,
  parallel = FALSE,
  parallel_handler = NULL,
  cl = NULL
)
```

Arguments:

... any other parameter to pass to the [WFSGetFeature](#) request

validate Whether features have to be validated vs. the feature type description. Default is TRUE

outputFormat output format

paging paging. Default is FALSE

paging\_length number of features to request per page. Default is 1000

parallel whether to get features using parallel multicore strategy. Default is FALSE

parallel\_handler Handler function to parallelize the code. eg [mclapply](#)

cl optional cluster object for parallel cluster approaches using eg. `parallel::makeCluster`  
 typeName the name of the feature type

Returns: features as object of class `sf`

**Method** clone(): The objects of this class are cloneable with this method.

Usage:

WFSFeatureType\$clone(deep = FALSE)

Arguments:

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WFS DescribeFeatureType request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WFSFeatureTypeElement *WFSFeatureTypeElement*

---

**Description**

WFSFeatureTypeElement

WFSFeatureTypeElement

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WFS feature type element

**Methods****Public methods:**

- [WFSFeatureTypeElement\\$new\(\)](#)
- [WFSFeatureTypeElement\\$getMinOccurs\(\)](#)
- [WFSFeatureTypeElement\\$getMaxOccurs\(\)](#)
- [WFSFeatureTypeElement\\$isNilable\(\)](#)
- [WFSFeatureTypeElement\\$name\(\)](#)
- [WFSFeatureTypeElement\\$type\(\)](#)
- [WFSFeatureTypeElement\\$isGeometry\(\)](#)
- [WFSFeatureTypeElement\\$clone\(\)](#)

**Method** `new()`: Initializes a [WFSFeatureTypeElement](#)

*Usage:*

`WFSFeatureTypeElement$new(xmlObj, namespaces)`

*Arguments:*

`xmlObj` object of class [XMLInternalNode-class](#) from **XML**

`namespaces` namespaces definitions inherited from parent XML, as `data.frame`

**Method** `getMinOccurs()`: get min occurs

*Usage:*

WFSFeatureTypeElement\$getMinOccurs()

*Returns:* an object of class character

**Method** getMaxOccurs(): get max occurs

*Usage:*

WFSFeatureTypeElement\$getMaxOccurs()

*Returns:* an object of class character

**Method** isNillable(): get if nillable

*Usage:*

WFSFeatureTypeElement\$isNillable()

*Returns:* an object of class logical

**Method** getName(): get name

*Usage:*

WFSFeatureTypeElement\$getName()

*Returns:* an object of class character

**Method** getType(): get type

*Usage:*

WFSFeatureTypeElement\$getType()

*Returns:* an object of class character

**Method** isGeometry(): Is geometry

*Usage:*

WFSFeatureTypeElement\$isGeometry()

*Arguments:*

return object of class logical

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WFSFeatureTypeElement\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WFSGetFeature

*WFSGetFeature*


---

### Description

WFSGetFeature

WFSGetFeature

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WFS GetFeature request

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WFSGetFeature

### Methods

#### Public methods:

- [WFSGetFeature\\$new\(\)](#)
- [WFSGetFeature\\$clone\(\)](#)

**Method** `new()`: Initializes a [WFSGetFeature](#) service request

*Usage:*

```
WFSGetFeature$new(
  capabilities,
  op,
  url,
  version,
  typeName,
  outputFormat = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [WFSCapabilities](#)

`op` object of class [OWSOperation](#) as retrieved from capabilities

url url  
 version service version  
 typeName typeName  
 outputFormat output format  
 user user  
 pwd password  
 token token  
 headers headers  
 config config  
 logger logger  
 . . . any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WFSGetFeature\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a WFS GetFeature request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WMSCapabilities

*WMSCapabilities*

---

#### Description

WMSCapabilities

WMSCapabilities

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) with methods for interfacing an OGC Web Map Service Get Capabilities document.

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WMSCapabilities

## Methods

### Public methods:

- [WMSCapabilities\\$new\(\)](#)
- [WMSCapabilities\\$getRequests\(\)](#)
- [WMSCapabilities\\$getRequestNames\(\)](#)
- [WMSCapabilities\\$getLayers\(\)](#)
- [WMSCapabilities\\$findLayerByName\(\)](#)
- [WMSCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes a [WMSCapabilities](#) object

*Usage:*

```
WMSCapabilities$new(url, version, logger = NULL, ...)
```

*Arguments:*

`url` url

`version` version

`logger` logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `getRequests()`: List the requests available. If `pretty` is TRUE, the output will be an object of class `data.frame`

*Usage:*

```
WMSCapabilities$getRequests(pretty = FALSE)
```

*Arguments:*

`pretty` pretty

*Returns:* a list of [OWSRequest](#) available, or a `data.frame`

**Method** `getRequestNames()`: List the names of requests available.

*Usage:*

```
WMSCapabilities$getRequestNames()
```

*Returns:* object of class `character`

**Method** `getLayers()`: List the layers available. If `pretty` is TRUE, the output will be an object of class `data.frame`

*Usage:*

```
WMSCapabilities$getLayers(pretty = FALSE)
```

*Arguments:*

`pretty` pretty

*Returns:* a list of [WMSLayer](#) available, or a `data.frame`

**Method** `findLayerByName()`: Finds a layer by name

*Usage:*

```
WMSCapabilities$findLayerByName(expr, exact = TRUE)
```

*Arguments:*`expr expr``exact exact matching? Default is TRUE`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*`WMSCapabilities$clone(deep = FALSE)`*Arguments:*`deep` Whether to make a deep clone.**Note**

Class used to read a `WMSCapabilities` document. The use of `WMSClient` is recommended instead to benefit from the full set of capabilities associated to a WMS server.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

`WMSClient`*WMSClient*

---

**Description**`WMSClient``WMSClient`**Format**`R6Class` object.**Value**

Object of `R6Class` with methods for interfacing an OGC Web Map Service.

**Super classes**`ows4R::OGCAbstractObject -> ows4R::OWSClient -> WMSClient`

## Methods

### Public methods:

- [WMSClient\\$new\(\)](#)
- [WMSClient\\$getCapabilities\(\)](#)
- [WMSClient\\$reloadCapabilities\(\)](#)
- [WMSClient\\$getLayers\(\)](#)
- [WMSClient\\$getMap\(\)](#)
- [WMSClient\\$getFeatureInfo\(\)](#)
- [WMSClient\\$getLegendGraphic\(\)](#)
- [WMSClient\\$clone\(\)](#)

**Method new():** This method is used to instantiate a [WMSClient](#) with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

#### Usage:

```
WMSClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

#### Arguments:

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
config config
cas_url Central Authentication Service (CAS) URL
logger logger
```

**Method getCapabilities():** Get WMS capabilities

#### Usage:

```
WMSClient$getCapabilities()
```

**Returns:** an object of class [WMSCapabilities](#)



**Method** reloadCapabilities(): Reloads WFS capabilities

*Usage:*

```
WMSClient$reloadCapabilities()
```

**Method** getLayers(): List the layers available. If pretty is TRUE, the output will be an object of class data.frame

*Usage:*

```
WMSClient$getLayers(pretty = FALSE)
```

*Arguments:*

pretty pretty

*Returns:* a list of [WMSLayer](#) available, or a data.frame

**Method** getMap(): Get map. NOT YET IMPLEMENTED

*Usage:*

```
WMSClient$getMap()
```

**Method** getFeatureInfo(): Get feature info

*Usage:*

```
WMSClient$getFeatureInfo(
  layer,
  srs = NULL,
  styles = NULL,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "application/vnd.ogc.gml",
  ...
)
```

*Arguments:*

layer layer name

srs srs

styles styles

feature\_count feature count. Default is 1

x x

y y

width width

height height

bbox bbox

info\_format info format. Default is "application/vnd.ogc.gml"

... any other parameter to pass to a [WMSGetFeatureInfo](#) request

*Returns:* an object of class sf given the feature(s)

**Method** getLegendGraphic(): Get legend graphic. NOT YET IMPLEMENTED

*Usage:*

```
WMSClient$getLegendGraphic()
```

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

### Examples

```
## Not run:
#example based on a WMS endpoint responding at http://localhost:8080/geoserver/wms
wms <- WMSClient$new("http://localhost:8080/geoserver/wms", serviceVersion = "1.1.1")

#get capabilities
caps <- wms$getCapabilities()

#get feature info

#Advanced examples at https://github.com/eblondel/ows4R/wiki#wms

## End(Not run)
```

---

WMSGetFeatureInfo

*WMSGetFeatureInfo*

---

### Description

WMSGetFeatureInfo

WMSGetFeatureInfo

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WMS GetFeatureInfo request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WMSGetFeatureInfo

**Methods****Public methods:**

- [WMSGetFeatureInfo\\$new\(\)](#)
- [WMSGetFeatureInfo\\$clone\(\)](#)

**Method** `new()`: Initializes a [WMSGetFeatureInfo](#) service request

*Usage:*

```
WMSGetFeatureInfo$new(
  capabilities,
  op,
  url,
  version,
  layers,
  srs,
  styles,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "text/xml",
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

`capabilities` an object of class [WMSCapabilities](#)  
`op` object of class [OWSOperation](#) as retrieved from `capabilities`  
`url` url  
`version` version  
`layers` layers  
`srs` srs  
`styles` styles  
`feature_count` feature count  
`x` x  
`y` y

width width  
height height  
bbox bbox  
info\_format info format  
user user  
pwd pwd  
token token  
headers headers  
config config  
logger logger  
... any parameter to pass to the service request

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSGetFeatureInfo$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R** to trigger a WMS GetFeatureInfo request

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WMSLayer

*WMSLayer*

---

#### Description

WMSLayer

WMSLayer

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WMS layer

#### Super class

[ows4R::OGCAbstractObject](#) -> WMSLayer

**Public fields**

description description  
features features

**Methods****Public methods:**

- [WMSLayer\\$new\(\)](#)
- [WMSLayer\\$getName\(\)](#)
- [WMSLayer\\$getTitle\(\)](#)
- [WMSLayer\\$getAbstract\(\)](#)
- [WMSLayer\\$getKeywords\(\)](#)
- [WMSLayer\\$getDefaultCRS\(\)](#)
- [WMSLayer\\$getBoundingBox\(\)](#)
- [WMSLayer\\$getBoundingBoxSRS\(\)](#)
- [WMSLayer\\$getBoundingBoxCRS\(\)](#)
- [WMSLayer\\$getStyle\(\)](#)
- [WMSLayer\\$getStyleNames\(\)](#)
- [WMSLayer\\$getDimensions\(\)](#)
- [WMSLayer\\$getTimeDimension\(\)](#)
- [WMSLayer\\$getElevationDimension\(\)](#)
- [WMSLayer\\$getFeatureInfo\(\)](#)
- [WMSLayer\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WMSLayer](#)

*Usage:*

```
WMSLayer$new(xmlObj, capabilities, version, logger = NULL)
```

*Arguments:*

xmlObj an object of class [XMLInternalNode-class](#) to initialize from XML  
capabilities object of class [WMSCapabilities](#)  
version service version  
logger logger

**Method** [getName\(\)](#): Get layer name

*Usage:*

```
WMSLayer$getName()
```

*Returns:* object of class character

**Method** [getTitle\(\)](#): Get layer title

*Usage:*

```
WMSLayer$getTitle()
```

*Returns:* object of class character

**Method** getAbstract(): Get layer abstract

*Usage:*

WMSLayer\$getAbstract()

*Returns:* object of class character

**Method** getKeywords(): Get layer keywords

*Usage:*

WMSLayer\$getKeywords()

*Returns:* object of class character

**Method** getDefaultCRS(): Get layer default CRS

*Usage:*

WMSLayer\$getDefaultCRS()

*Returns:* object of class character

**Method** getBoundingBox(): Get layer bounding box

*Usage:*

WMSLayer\$getBoundingBox()

*Returns:* object of class matrix

**Method** getBoundingBoxSRS(): Get layer bounding box SRS

*Usage:*

WMSLayer\$getBoundingBoxSRS()

*Returns:* object of class character

**Method** getBoundingBoxCRS(): Get layer bounding box CRS

*Usage:*

WMSLayer\$getBoundingBoxCRS()

*Returns:* object of class character

**Method** getStyles(): Get layer styles

*Usage:*

WMSLayer\$getStyles()

*Returns:* an object of class list

**Method** getStylenames(): Get layer style names

*Usage:*

WMSLayer\$getStylenames()

*Returns:* list of object of class character

**Method** getDimensions(): Get layer dimensions

*Usage:*

WMSLayer\$getDimensions(time\_format = "character")

*Arguments:*

time\_format time format. Default is character

*Returns:* a list including default value and listed possible values

**Method** getTimeDimension(): Get layer TIME dimensions

*Usage:*

```
WMSLayer$getTimeDimension(time_format = "character")
```

*Arguments:*

time\_format time format. Default is character

*Returns:* a list including default value and listed possible values

**Method** getElevationDimension(): Get layer ELEVATION dimensions

*Usage:*

```
WMSLayer$getElevationDimension()
```

*Returns:* a list including default value and listed possible values

**Method** getFeatureInfo(): Get feature info

*Usage:*

```
WMSLayer$getFeatureInfo(
  srs = NULL,
  styles = NULL,
  feature_count = 1,
  x,
  y,
  width,
  height,
  bbox,
  info_format = "text/xml",
  ...
)
```

*Arguments:*

srs srs

styles styles

feature\_count feature count. Default is 1

x x

y y

width width

height height

bbox bbox

info\_format info format. Default is "text/xml"

... any other parameter to pass to a [WMSGetFeatureInfo](#) request

*Returns:* an object of class sf given the feature(s)

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WMSLayer$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Abstract class used by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSBoundingBoxData     *WPSBoundingBoxData*

---

**Description**

WPSBoundingBoxData

WPSBoundingBoxData

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling an OGC WPS BoundingBox data

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSBoundingBox](#) -> WPSBoundingBoxData

**Methods****Public methods:**

- [WPSBoundingBoxData\\$new\(\)](#)
- [WPSBoundingBoxData\\$clone\(\)](#)

**Method** `new()`: Initializes an object of class [WPSBoundingBoxData](#)

*Usage:*

```
WPSBoundingBoxData$new(  
  xml = NULL,  
  owsVersion,  
  serviceVersion = "1.0.0",  
  logger = NULL,  
  ...  
)
```



*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML  
owsVersion OWS version  
serviceVersion WPS service version  
logger logger  
... any other parameter

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSBoundingBoxData\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSCapabilities

*WPSCapabilities*

---

**Description**

WPSCapabilities

WPSCapabilities

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) with methods for interfacing an OGC Web Processing Service (WPS) Get Capabilities document.

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSCapabilities](#) -> WPSCapabilities

**Methods****Public methods:**

- [WPSCapabilities\\$new\(\)](#)
- [WPSCapabilities\\$getProcesses\(\)](#)
- [WPSCapabilities\\$describeProcess\(\)](#)
- [WPSCapabilities\\$execute\(\)](#)
- [WPSCapabilities\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSCapabilities](#) object

*Usage:*

```
WPSCapabilities$new(url, version, client = NULL, logger = NULL, ...)
```

*Arguments:*

url url

version version

client an object of class [WPSClient](#)

logger logger type NULL, "INFO" or "DEBUG"

... any other parameter to pass to [OWSGetCapabilities](#) service request

**Method** `getProcesses()`: Get the list of processes offered by the service capabilities. `pretty` allows to control the type output. If `TRUE`, a `data.frame` will be returned. When prettified output, it is also possible to get a 'full' description of the process by setting `full = TRUE` in which case a the WPS client will request a process description (with more information about the process) for each process listed in the capabilities.

*Usage:*

```
WPSCapabilities$getProcesses(pretty = FALSE, full = FALSE)
```

*Arguments:*

pretty pretty

full full

*Returns:* a list of [WPSProcessDescription](#) or a `data.frame`

**Method** `describeProcess()`: Get the description of a process, given its identifier, returning an object of class `WPSProcessDescription`

*Usage:*

```
WPSCapabilities$describeProcess(identifier)
```

*Arguments:*

identifier process identifier

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `execute()`: Execute a process, given its identifier

*Usage:*

```

WPSCapabilities$execute(
  identifier,
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)

```

*Arguments:*

*identifier* process identifier

*dataInputs* a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#) or [WPSBoundingBoxData](#)

*responseForm* response form, object of class [WPSResponseDocument](#)

*storeExecuteResponse* store execute response? object of class logical. FALSE by default

*lineage* lineage, object of class logical

*status* status, object of class logical

*update* update, object of class logical. For asynchronous requests

*updateInterval* update interval, object of class integer. For asynchronous requests

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSCapabilities$clone(deep = FALSE)
```

*Arguments:*

*deep* Whether to make a deep clone.

**Note**

Class used to read a `WPSCapabilities` document. The use of `WPSClient` is recommended instead to benefit from the full set of capabilities associated to a WPS server.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSClient

*WPSClient*

---

**Description**

WPSClient

WPSClient

**Format**

R6Class object.

**Value**

Object of R6Class with methods for interfacing an OGC Web Processing Service.

**Super classes**

ows4R::OGCAbstractObject -> ows4R::OWSClient -> WPSClient

**Methods****Public methods:**

- WPSClient\$new()
- WPSClient\$getCapabilities()
- WPSClient\$reloadCapabilities()
- WPSClient\$getProcesses()
- WPSClient\$describeProcess()
- WPSClient\$execute()
- WPSClient\$clone()

**Method new():** This method is used to instantiate a WPSClient with the url of the OGC service. Authentication is supported using basic auth (using user/pwd arguments), bearer token (using token argument), or custom (using headers argument). By default, the logger argument will be set to NULL (no logger). This argument accepts two possible values: INFO: to print only **ows4R** logs, DEBUG: to print more verbose logs

*Usage:*

```
WPSClient$new(
  url,
  serviceVersion = NULL,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  cas_url = NULL,
  logger = NULL
)
```

*Arguments:*

```
url url
serviceVersion WFS service version
user user
pwd password
token token
headers headers
```

```
config config
cas_url Central Authentication Service (CAS) URL
logger logger
```

**Method** `getCapabilities()`: Get WPS capabilities

*Usage:*

```
WPSClient$getCapabilities()
```

*Returns:* an object of class [WPSCapabilities](#)

**Method** `reloadCapabilities()`: Reloads WPS capabilities

*Usage:*

```
WPSClient$reloadCapabilities()
```

**Method** `getProcesses()`: Get the list of processes offered by the service capabilities. `pretty` allows to control the type output. If `TRUE`, a `data.frame` will be returned. When prettified output, it is also possible to get a 'full' description of the process by setting `full = TRUE` in which case the WPS client will request a process description (with more information about the process) for each process listed in the capabilities.

*Usage:*

```
WPSClient$getProcesses(pretty = FALSE, full = FALSE)
```

*Arguments:*

```
pretty pretty
```

```
full full
```

*Returns:* a list of [WPSProcessDescription](#) or a `data.frame`

**Method** `describeProcess()`: Get the description of a process, given its identifier, returning an object of class `WPSProcessDescription`

*Usage:*

```
WPSClient$describeProcess(identifier)
```

*Arguments:*

```
identifier process identifier
```

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `execute()`: Execute a process, given its identifier

*Usage:*

```
WPSClient$execute(
  identifier,
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)
```

*Arguments:*

identifier process identifier  
 dataInputs a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#)  
 or [WPSBoundingBoxData](#)  
 responseForm response form, object of class [WPSResponseDocument](#)  
 storeExecuteResponse store execute response? object of class logical. FALSE by default  
 lineage lineage, object of class logical  
 status status, object of class logical  
 update update, object of class logical. For asynchronous requests  
 updateInterval update interval, object of class integer. For asynchronous requests

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WPSClient$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

**Examples**

```
## Not run:
#example based on a WPS endpoint responding at http://localhost:8080/geoserver/wps
wps <- WPSClient$new("http://localhost:8080/geoserver/wps", serviceVersion = "1.0.0")

#get capabilities
caps <- wps$getCapabilities()

## End(Not run)
```

---

WPSComplexData

*WPSComplexData*

---

**Description**

WPSComplexData

WPSComplexData

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Complex Data

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSComplexData

**Public fields**

value value

**Methods****Public methods:**

- [WPSComplexData\\$new\(\)](#)
- [WPSComplexData\\$decode\(\)](#)
- [WPSComplexData\\$checkValidity\(\)](#)
- [WPSComplexData\\$getFeatures\(\)](#)
- [WPSComplexData\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSComplexData](#)

*Usage:*

```
WPSComplexData$new(  
  xml = NULL,  
  value = NULL,  
  schema = NULL,  
  mimeType = NULL,  
  serviceVersion = "1.0.0",  
  cdata = TRUE  
)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML  
value value  
schema schema  
mimeType mime type  
serviceVersion WPS service version  
cdata whether value has to be wrapped in a XML CDATA. Default is TRUE

**Method** [decode\(\)](#): Decodes an object of class [WPSComplexData](#) from XML

*Usage:*

```
WPSComplexData$decode(xml)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

**Method** `checkValidity()`: Check the object against a parameter description inherited from a WPS process description, object of class `WPSComplexInputDescription`. If not valid, the function will raise an error.

*Usage:*

`WPSComplexData$checkValidity(parameterDescription)`

*Arguments:*

`parameterDescription` object of class [WPSComplexInputDescription](#)

*Returns:* an error if not valid

**Method** `getFeatures()`: Get features

*Usage:*

`WPSComplexData$getFeatures()`

*Returns:* object of class `sf`

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WPSComplexData$clone(deep = FALSE)`

*Arguments:*

`deep` Whether to make a deep clone.

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSComplexInputDescription

*WPSComplexInputDescription*

---

#### Description

WPSComplexInputDescription

WPSComplexInputDescription

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process complex input description

#### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [ows4R::WPSInputDescription](#) -> `WPSComplexInputDescription`



**Methods****Public methods:**

- [WPSComplexInputDescription\\$new\(\)](#)
- [WPSComplexInputDescription\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSComplexInputDescription](#)

*Usage:*

```
WPSComplexInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from **XML**

`version` WPS service version

`logger` logger

... any other parameter

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSComplexInputDescription$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSComplexOutputDescription

*WPSComplexOutputDescription*

---

**Description**

WPSComplexOutputDescription

WPSComplexOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process complex input description

**Super classes**

ows4R::OGCAbstractObject -> ows4R::WPSParameter -> ows4R::WPSDescriptionParameter  
 -> ows4R::WPSOutputDescription -> WPSComplexOutputDescription

**Methods****Public methods:**

- [WPSComplexOutputDescription\\$new\(\)](#)
- [WPSComplexOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSComplexOutputDescription](#)

*Usage:*

`WPSComplexOutputDescription$new(xml = NULL, version, logger = NULL, ...)`

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

`WPSComplexOutputDescription$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSDescribeProcess      *WPSDescribeProcess*

---

**Description**

WPSDescribeProcess

WPSDescribeProcess

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS DescribeProcess request

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WPSDescribeProcess

**Methods****Public methods:**

- [WPSDescribeProcess\\$new\(\)](#)
- [WPSDescribeProcess\\$clone\(\)](#)

**Method new():** Initializes a [WPSDescribeProcess](#) service request

*Usage:*

```
WPSDescribeProcess$new(
  capabilities,
  op,
  url,
  serviceVersion,
  identifier,
  user = NULL,
  pwd = NULL,
  token = NULL,
  headers = c(),
  config = httr::config(),
  logger = NULL,
  ...
)
```

*Arguments:*

capabilities object of class [WPSCapabilities](#)

op object of class [OWSOperation](#)

url url

serviceVersion WPS service version

identifier process identifier

user user

pwd password

token token

headers headers

config config

logger logger

... any other parameter to pass to the request

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
WPSDescribeProcess$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WPS DescribeProcess request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSDescriptionParameter

*WPSDescriptionParameter*

---

**Description**

WPSDescriptionParameter

WPSDescriptionParameter

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description parameter

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WSPParameter](#) -> WPSDescriptionParameter

**Methods****Public methods:**

- [WPSDescriptionParameter\\$new\(\)](#)
- [WPSDescriptionParameter\\$getDataType\(\)](#)
- [WPSDescriptionParameter\\$getFormats\(\)](#)
- [WPSDescriptionParameter\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSDescriptionParameter](#)

*Usage:*

```
WPSDescriptionParameter$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from XML  
 version WPS service version  
 logger logger  
 ... any other parameter

**Method** `getDataType()`: Get data type

*Usage:*

`WPSDescriptionParameter$getDataType()`

*Returns:* object of class character

**Method** `getFormats()`: get formats

*Usage:*

`WPSDescriptionParameter$getFormats()`

*Returns:* the formats

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

`WPSDescriptionParameter$clone(deep = FALSE)`

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSException

*WPSException*

---

#### Description

WPSException

WPSException

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) for modelling a WPS Exception

**Super class**

[ows4R: :OGCAbstractObject](#) -> WPSEException

**Public fields**

value value

percentCompleted percent of completion

**Methods****Public methods:**

- [WPSEException\\$new\(\)](#)
- [WPSEException\\$decode\(\)](#)
- [WPSEException\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSEException](#)

*Usage:*

```
WPSEException$new(xml = NULL, serviceVersion = "1.0.0")
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
serviceVersion service version. Default "1.0.0"

**Method** [decode\(\)](#): Decodes an object of class [WPSEException](#) from XML

*Usage:*

```
WPSEException$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WPSEException$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSExecute

*WPSExecute*

---

### Description

WPSExecute

WPSExecute

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WPS Execute request

### Super classes

[ows4R::OGCAbstractObject](#) -> [ows4R::OWSHttpRequest](#) -> WPSExecute

### Public fields

Identifier process identifier

DataInputs list of [WPSInput](#)

ResponseForm response form

### Methods

#### Public methods:

- [WPSExecute\\$new\(\)](#)
- [WPSExecute\\$getProcessDescription\(\)](#)
- [WPSExecute\\$clone\(\)](#)

**Method new():** Initializes a [WPSExecute](#) service request

*Usage:*

```
WPSExecute$new(  
  capabilities,  
  op,  
  url,  
  serviceVersion,  
  identifier,  
  dataInputs = list(),  
  responseForm = NULL,  
  storeExecuteResponse = FALSE,  
  lineage = NULL,  
  status = NULL,
```

```

    user = NULL,
    pwd = NULL,
    token = NULL,
    headers = c(),
    config = httr::config(),
    logger = NULL,
    ...
)

```

*Arguments:*

**capabilities** object of class [WPSCapabilities](#)  
**op** object of class [OWSOperation](#)  
**url** url  
**serviceVersion** WPS service version  
**identifier** process identifier  
**dataInputs** a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#)  
 or [WPSBoundingBoxData](#)  
**responseForm** response form, object of class [WPSResponseDocument](#)  
**storeExecuteResponse** store execute response? object of class logical. FALSE by default  
**lineage** lineage, object of class logical  
**status** status, object of class logical  
**user** user  
**pwd** password  
**token** token  
**headers** headers  
**config** config  
**logger** logger  
 ... any other parameter to pass to the request

**Method** `getProcessDescription()`: Get process description

*Usage:*

```
WPSExecute$getProcessDescription()
```

*Returns:* an object of class [WPSProcessDescription](#)

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSExecute$clone(deep = FALSE)
```

*Arguments:*

**deep** Whether to make a deep clone.

**Note**

Class used internally by **ows4R** to trigger a WPS Execute request

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>



---

WPSExecuteResponse      *WPSExecuteResponse*

---

**Description**

WPSExecuteResponse

WPSExecuteResponse

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Execute response

**Super class**

[ows4R: :OGCAbstractObject](#) -> WPSExecuteResponse

**Public fields**

process process

status status

statusLocation status location

statusHistory status history

processOutputs process outputs

exception exception

**Methods****Public methods:**

- [WPSExecuteResponse\\$new\(\)](#)
- [WPSExecuteResponse\\$getProcess\(\)](#)
- [WPSExecuteResponse\\$getStatus\(\)](#)
- [WPSExecuteResponse\\$getStatusLocation\(\)](#)
- [WPSExecuteResponse\\$getStatusHistory\(\)](#)
- [WPSExecuteResponse\\$getProcessOutputs\(\)](#)
- [WPSExecuteResponse\\$getException\(\)](#)
- [WPSExecuteResponse\\$decode\(\)](#)
- [WPSExecuteResponse\\$update\(\)](#)
- [WPSExecuteResponse\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSExecuteResponse](#)

*Usage:*

```
WPSExecuteResponse$new(  
  xml,  
  capabilities,  
  processDescription = NULL,  
  logger = NULL  
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
capabilities object of class [WPSCapabilities](#)  
processDescription process description  
logger logger

**Method** `getProcess()`: Get process

*Usage:*

```
WPSExecuteResponse$getProcess()
```

*Returns:* an object of class [WPSProcess](#)

**Method** `getStatus()`: Get status

*Usage:*

```
WPSExecuteResponse$getStatus()
```

*Returns:* an object of class [WPSStatus](#)

**Method** `getStatusLocation()`: Get status location

*Usage:*

```
WPSExecuteResponse$getStatusLocation()
```

*Returns:* an object of class character

**Method** `getStatusHistory()`: Get status history

*Usage:*

```
WPSExecuteResponse$getStatusHistory()
```

*Returns:* an object of class character

**Method** `getProcessOutputs()`: Get list of process outputs

*Usage:*

```
WPSExecuteResponse$getProcessOutputs()
```

*Returns:* a list of outputs

**Method** `getException()`: Get exception

*Usage:*

```
WPSExecuteResponse$getException()
```

*Returns:* an object of class [WPSException](#)

**Method** `decode()`: Decodes an object of class [WPSExecuteResponse](#) from XML

*Usage:*

WPSExecuteResponse\$decode(xml, capabilities, processDescription, logger)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
capabilities object of class [WPSCapabilities](#)  
processDescription process description  
logger logger

**Method** update(): Updates status history

*Usage:*

WPSExecuteResponse\$update(verbose = FALSE)

*Arguments:*

verbose verbose. Default is FALSE

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSExecuteResponse\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSFormat

*WPSFormat*

---

**Description**

WPSFormat

WPSFormat

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSFormat

**Methods****Public methods:**

- [WPSFormat\\$new\(\)](#)
- [WPSFormat\\$getMimeType\(\)](#)
- [WPSFormat\\$getEncoding\(\)](#)
- [WPSFormat\\$getSchema\(\)](#)
- [WPSFormat\\$setIsDefault\(\)](#)
- [WPSFormat\\$isDefault\(\)](#)
- [WPSFormat\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSFormat](#)

*Usage:*

```
WPSFormat$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

version WPS service version

logger logger

... any additional parameter

**Method** [getMimeType\(\)](#): Get mime type

*Usage:*

```
WPSFormat$getMimeType()
```

*Returns:* object of class character

**Method** [getEncoding\(\)](#): Get encoding

*Usage:*

```
WPSFormat$getEncoding()
```

*Returns:* object of class character

**Method** [getSchema\(\)](#): Get schema

*Usage:*

```
WPSFormat$getSchema()
```

*Returns:* object of class character

**Method** [setIsDefault\(\)](#): set is default

*Usage:*

```
WPSFormat$setIsDefault(default)
```

*Arguments:*

default object of class logical

**Method** [isDefault\(\)](#): is default

*Usage:*

WPSFormat\$isDefault()

*Returns:* TRUE if default, FALSE otherwise

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSFormat\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Note

Class used internally by **ows4R**

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSInput

*WPSInput*

---

### Description

WPSInput

WPSInput

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WPS Input

### Super class

[ows4R::OGCAbstractObject](#) -> WPSInput

### Public fields

Identifier identifier

Data data

**Methods****Public methods:**

- [WPSInput\\$new\(\)](#)
- [WPSInput\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSInput](#)

*Usage:*

```
WPSInput$new(xml = NULL, identifier, data, serviceVersion = "1.0.0")
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from **XML**

`identifier` identifier

`data` data

`serviceVersion` service version. Default "1.0.0"

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSInput$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSInputDescription    *WPSInputDescription*

---

**Description**

WPSInputDescription

WPSInputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [WPSInputDescription](#)

**Methods****Public methods:**

- [WPSInputDescription\\$new\(\)](#)
- [WPSInputDescription\\$getMinOccurs\(\)](#)
- [WPSInputDescription\\$getMaxOccurs\(\)](#)
- [WPSInputDescription\\$asDataFrame\(\)](#)
- [WPSInputDescription\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSInputDescription](#)

*Usage:*

```
WPSInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from [XML](#)

`version` WPS service version

`logger` logger

... any other parameter

**Method** `getMinOccurs()`: Get min occurs

*Usage:*

```
WPSInputDescription$getMinOccurs()
```

*Returns:* the min occurs

**Method** `getMaxOccurs()`: Get max occurs

*Usage:*

```
WPSInputDescription$getMaxOccurs()
```

*Returns:* the max occurs

**Method** `asDataFrame()`: Get input description as data.frame

*Usage:*

```
WPSInputDescription$asDataFrame()
```

*Returns:* object of class character

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSInputDescription$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralData

*WPSLiteralData*


---

**Description**

WPSLiteralData

WPSLiteralData

**Format**

R6Class object.

**Value**Object of [R6Class](#) for modelling a WPS Literal Data**Super class**[ows4R::OGCAbstractObject](#) -> WPSLiteralData**Public fields**

value value

**Methods****Public methods:**

- [WPSLiteralData\\$new\(\)](#)
- [WPSLiteralData\\$decode\(\)](#)
- [WPSLiteralData\\$checkValidity\(\)](#)
- [WPSLiteralData\\$clone\(\)](#)

**Method new():** Initializes an object of class [WPSLiteralData](#)*Usage:*

WPSLiteralData\$new(xml = NULL, value = NULL, serviceVersion = "1.0.0")

*Arguments:*xml an object of class [XMLInternalNode-class](#) to initialize from XML

value value

serviceVersion WPS service version

**Method decode():** Decodes an object of class [WPSLiteralData](#) from XML*Usage:*

WPSLiteralData\$decode(xml)

*Arguments:*xml an object of class [XMLInternalNode-class](#) to initialize from XML



**Method** checkValidity(): Check the object against a parameter description inherited from a WPS process description, object of class WPSLiteralInputDescription. If not valid, the function will raise an error.

*Usage:*

```
WPSLiteralData$checkValidity(parameterDescription)
```

*Arguments:*

parameterDescription object of class [WPSLiteralInputDescription](#)

*Returns:* an error if not valid

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WPSLiteralData$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralInputDescription

*WPSLiteralInputDescription*

---

#### Description

WPSLiteralInputDescription

WPSLiteralInputDescription

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process input description

#### Super classes

```
ows4R::OGCAbstractObject -> ows4R::WPSParameter -> ows4R::WPSDescriptionParameter  
-> ows4R::WPSInputDescription -> WPSLiteralInputDescription
```

**Methods****Public methods:**

- [WPSLiteralInputDescription\\$new\(\)](#)
- [WPSLiteralInputDescription\\$getDataType\(\)](#)
- [WPSLiteralInputDescription\\$getDefaultValue\(\)](#)
- [WPSLiteralInputDescription\\$getAllowedValues\(\)](#)
- [WPSLiteralInputDescription\\$clone\(\)](#)

**Method** `new()`: Initializes a [WPSLiteralInputDescription](#)

*Usage:*

```
WPSLiteralInputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from [XML](#)

`version` WPS service version

`logger` logger

... any other parameter

**Method** `getDataType()`: Get data type

*Usage:*

```
WPSLiteralInputDescription$getDataType()
```

*Returns:* the data type, object of class character

**Method** `getDefaultValue()`: Get default value

*Usage:*

```
WPSLiteralInputDescription$getDefaultValue()
```

*Returns:* the default value, object of class character

**Method** `getAllowedValues()`: Get allowed values

*Usage:*

```
WPSLiteralInputDescription$getAllowedValues()
```

*Returns:* the allowed values

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSLiteralInputDescription$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSLiteralOutputDescription  
*WPSLiteralOutputDescription*

---

**Description**

WPSLiteralOutputDescription

WPSLiteralOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process literal output description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [ows4R::WPSOutputDescription](#) -> WPSLiteralOutputDescription

**Methods****Public methods:**

- [WPSLiteralOutputDescription\\$new\(\)](#)
- [WPSLiteralOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSLiteralOutputDescription](#)

*Usage:*

```
WPSLiteralOutputDescription$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

```
WPSLiteralOutputDescription$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSOutput

*WPSOutput*

---

**Description**

WPSOutput

WPSOutput

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) for modelling a WPS Input

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSOutput

**Public fields**

Identifier identifier

Title tile

Data data

**Methods****Public methods:**

- [WPSOutput\\$new\(\)](#)
- [WPSOutput\\$decode\(\)](#)
- [WPSOutput\\$getData\(\)](#)
- [WPSOutput\\$getDataValue\(\)](#)
- [WPSOutput\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSOutput](#)

*Usage:*

```
WPSOutput$new(  
  xml = NULL,  
  identifier = NULL,  
  title = NULL,  
  data = NULL,  
  dataType = NULL,  
  serviceVersion = "1.0.0"  
)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**  
identifier identifier  
title title  
data data  
dataType data type  
serviceVersion WPS service version

**Method** decode(): Decodes an object of class [WPSOutput](#) from **XML**

*Usage:*

```
WPSOutput$decode(xml)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from **XML**

**Method** getData(): Get data

*Usage:*

```
WPSOutput$getData()
```

*Returns:* data

**Method** getDataValue(): Get data value

*Usage:*

```
WPSOutput$getDataValue()
```

*Returns:* data value

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

```
WPSOutput$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

**Author(s)**

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSOutputDescription *WPSOutputDescription*

---

**Description**

WPSOutputDescription

WPSOutputDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process input description

**Super classes**

[ows4R::OGCAbstractObject](#) -> [ows4R::WPSParameter](#) -> [ows4R::WPSDescriptionParameter](#)  
-> [WPSOutputDescription](#)

**Methods****Public methods:**

- [WPSOutputDescription\\$new\(\)](#)
- [WPSOutputDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSOutputDescription](#)

*Usage:*

[WPSOutputDescription\\$new](#)(xml = NULL, version, logger = NULL, ...)

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

version WPS service version

logger logger

... any other parameter

**Method** [clone\(\)](#): The objects of this class are cloneable with this method.

*Usage:*

[WPSOutputDescription\\$clone](#)(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSParameter

*WPSParameter*

---

**Description**

WPSParameter

WPSParameter

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS parameter

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSParameter

**Methods****Public methods:**

- [WPSParameter\\$new\(\)](#)
- [WPSParameter\\$getIdentifier\(\)](#)
- [WPSParameter\\$getTitle\(\)](#)
- [WPSParameter\\$getAbstract\(\)](#)
- [WPSParameter\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSParameter](#)

*Usage:*

```
WPSParameter$new(xml = NULL, version, logger = NULL, ...)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) to initialize from XML

version WPS service version

logger logger

... any additional parameter

**Method** [getIdentifier\(\)](#): Get identifier

*Usage:*

```
WPSParameter$getIdentifier()
```

*Returns:* object of class character

**Method** getTitle(): Get title

*Usage:*

WSPParameter\$title()

*Returns:* object of class character

**Method** getAbstract(): Get abstract

*Usage:*

WSPParameter\$getAbstract()

*Returns:* object of class character

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WSPParameter\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Abstract class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSProcess

*WPSProcess*

---

#### Description

WPSProcess

WPSProcess

#### Format

[R6Class](#) object.

#### Value

Object of [R6Class](#) modelling a WPS process

#### Super class

[ows4R::OGCAbstractObject](#) -> WPSProcess



**Methods****Public methods:**

- [WPSProcess\\$new\(\)](#)
- [WPSProcess\\$getIdentifier\(\)](#)
- [WPSProcess\\$getTitle\(\)](#)
- [WPSProcess\\$getVersion\(\)](#)
- [WPSProcess\\$getDescription\(\)](#)
- [WPSProcess\\$execute\(\)](#)
- [WPSProcess\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSProcess](#)

*Usage:*

`WPSProcess$new(xml, capabilities = NULL, version, logger = NULL, ...)`

*Arguments:*

`xml` object of class [XMLInternalNode-class](#) from **XML**

`capabilities` object of class [WPSCapabilities](#)

`version` service version

`logger` logger

`...` any additional parameter

**Method** [getIdentifier\(\)](#): Get identifier

*Usage:*

`WPSProcess$getIdentifier()`

*Returns:* object of class character

**Method** [getTitle\(\)](#): Get title

*Usage:*

`WPSProcess$getTitle()`

*Returns:* object of class character

**Method** [getVersion\(\)](#): Get version

*Usage:*

`WPSProcess$getVersion()`

*Returns:* object of class character

**Method** [getDescription\(\)](#): Get description

*Usage:*

`WPSProcess$getDescription()`

*Returns:* object of class [WPSProcessDescription](#)

**Method** [execute\(\)](#): Execute process

*Usage:*

```

WPSProcess$execute(
  dataInputs = list(),
  responseForm = NULL,
  storeExecuteResponse = FALSE,
  lineage = NULL,
  status = NULL,
  update = FALSE,
  updateInterval = 1
)

```

*Arguments:*

`dataInputs` a named list of data inputs, objects of class [WPSLiteralData](#), [WPSComplexData](#) or [WPSBoundingBoxData](#)

`responseForm` response form, object of class [WPSResponseDocument](#)

`storeExecuteResponse` store execute response? object of class logical. FALSE by default

`lineage` lineage, object of class logical

`status` status, object of class logical

`update` update, object of class logical. For asynchronous requests

`updateInterval` update interval, object of class integer. For asynchronous requests

**Method** `clone()`: The objects of this class are cloneable with this method.

*Usage:*

```
WPSProcess$clone(deep = FALSE)
```

*Arguments:*

`deep` Whether to make a deep clone.

**Note**

Class used internally by **ows4R**

**Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSProcessDescription *WPSProcessDescription*

---

**Description**

WPSProcessDescription

WPSProcessDescription

**Format**

[R6Class](#) object.

**Value**

Object of [R6Class](#) modelling a WPS process description

**Super class**

[ows4R::OGCAbstractObject](#) -> WPSProcessDescription

**Methods****Public methods:**

- [WPSProcessDescription\\$new\(\)](#)
- [WPSProcessDescription\\$getIdentifier\(\)](#)
- [WPSProcessDescription\\$getTitle\(\)](#)
- [WPSProcessDescription\\$getAbstract\(\)](#)
- [WPSProcessDescription\\$getVersion\(\)](#)
- [WPSProcessDescription\\$isStatusSupported\(\)](#)
- [WPSProcessDescription\\$isStoreSupported\(\)](#)
- [WPSProcessDescription\\$getDataInputs\(\)](#)
- [WPSProcessDescription\\$getProcessOutputs\(\)](#)
- [WPSProcessDescription\\$asDataFrame\(\)](#)
- [WPSProcessDescription\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes an object of class [WPSProcessDescription](#)

*Usage:*

```
WPSProcessDescription$new(xml, version, logger = NULL, ...)
```

*Arguments:*

xml object of class [XMLInternalNode-class](#) from [XML](#)

version version

logger logger

... any other parameter

**Method** [getIdentifier\(\)](#): Get process identifier

*Usage:*

```
WPSProcessDescription$getIdentifier()
```

*Returns:* the identifier, object of class character

**Method** [getTitle\(\)](#): Get process title

*Usage:*

```
WPSProcessDescription$getTitle()
```

*Returns:* the title, object of class character

**Method** [getAbstract\(\)](#): Get process abstract

*Usage:*

```
WPSProcessDescription$getAbstract()
```

*Returns:* the abstract, object of class character

**Method** getVersion(): Get process version

*Usage:*

WSPProcessDescription\$getVersion()

*Arguments:*

the version, object of class character

**Method** isStatusSupported(): Indicates if the status is supported

*Usage:*

WSPProcessDescription\$isStatusSupported()

*Returns:* TRUE if supported, FALSE otherwise

**Method** isStoreSupported(): Indicates if the store is supported

*Usage:*

WSPProcessDescription\$isStoreSupported()

*Returns:* TRUE if supported, FALSE otherwise

**Method** getDataInputs(): Get data inputs

*Usage:*

WSPProcessDescription\$getDataInputs()

*Returns:* a list of objects extending [WPSInputDescription](#)

**Method** getProcessOutputs(): Get process outputs

*Usage:*

WSPProcessDescription\$getProcessOutputs()

*Returns:* a list of objects extending [WPSOutputDescription](#)

**Method** asDataFrame(): Convenience method to export a process description as data.frame

*Usage:*

WSPProcessDescription\$asDataFrame()

*Returns:* a data.frame giving the process description

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WSPProcessDescription\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

#### Note

Class used internally by **ows4R**

#### Author(s)

Emmanuel Blondel <emmanuel.blondell@gmail.com>

---

WPSResponseDocument    *WPSResponseDocument*

---

### Description

WPSResponseDocument

WPSResponseDocument

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling an OGC WPS response document

### Super class

[ows4R: :OGCAbstractObject](#) -> WPSResponseDocument

### Public fields

Output    output property

### Methods

#### Public methods:

- [WPSResponseDocument\\$new\(\)](#)
- [WPSResponseDocument\\$clone\(\)](#)

**Method** [new\(\)](#): Initializes a [WPSResponseDocument](#)

*Usage:*

```
WPSResponseDocument$new(  
  xml = NULL,  
  storeExecuteResponse = FALSE,  
  lineage = NULL,  
  status = NULL,  
  output = NULL,  
  serviceVersion = "1.0.0"  
)
```

*Arguments:*

xml    object of class [XMLInternalNode-class](#) from **XML**  
storeExecuteResponse    store execute response, object of class logical  
lineage    lineage, object of class logical  
status    status, object of class logical

output output  
 serviceVersion WPS service version

**Method** clone(): The objects of this class are cloneable with this method.

*Usage:*

WPSResponseDocument\$clone(deep = FALSE)

*Arguments:*

deep Whether to make a deep clone.

### Author(s)

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

---

WPSStatus

*WPSStatus*

---

### Description

WPSStatus

WPSStatus

### Format

[R6Class](#) object.

### Value

Object of [R6Class](#) for modelling a WPS Status

### Super class

[ows4R::OGCAbstractObject](#) -> WPSStatus

### Public fields

value status value

percentCompleted status percentage of completion

### Methods

#### Public methods:

- [WPSStatus\\$new\(\)](#)
- [WPSStatus\\$decode\(\)](#)
- [WPSStatus\\$getValue\(\)](#)
- [WPSStatus\\$getPercentCompleted\(\)](#)
- [WPSStatus\\$getCreationTime\(\)](#)

- [WPSStatus\\$clone\(\)](#)

**Method new():** Initializes a [WPSStatus](#) object

*Usage:*

```
WPSStatus$new(xml = NULL, serviceVersion = "1.0.0")
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) from **XML**  
serviceVersion WPS service version. Default is "1.0.0"

**Method decode():** Decodes WPS status from XML

*Usage:*

```
WPSStatus$decode(xml)
```

*Arguments:*

xml an object of class [XMLInternalNode-class](#) from **XML**

**Method getValue():** Get status value, among accepted WPS status values defined in the WPS standard: ProcessAccepted, ProcessStarted, ProcessPaused, ProcessSucceeded, ProcessFailed.

*Usage:*

```
WPSStatus$getValue()
```

*Returns:* value, object of class character

**Method getPercentCompleted():** Get percentage of completion

*Usage:*

```
WPSStatus$getPercentCompleted()
```

*Returns:* the percentage of completion, object of class integer

**Method getCreationTime():** Get creation time

*Usage:*

```
WPSStatus$getCreationTime()
```

*Returns:* the creation time, object of class POSIXct

**Method clone():** The objects of this class are cloneable with this method.

*Usage:*

```
WPSStatus$clone(deep = FALSE)
```

*Arguments:*

deep Whether to make a deep clone.

#### **Author(s)**

Emmanuel Blondel <emmanuel.blondel1@gmail.com>

# Index

- \* **Abstract**
  - OGCAbstractObject, 33
- \* **And**
  - And, 4
- \* **Authentication**
  - CASClient, 9
- \* **BBOX**
  - BBOX, 5
- \* **BinaryComparisonOpType**
  - BinaryComparisonOpType, 6
  - PropertyIsEqualTo, 68
  - PropertyIsGreaterThan, 69
  - PropertyIsGreaterThanOrEqualTo, 70
  - PropertyIsLessThan, 71
  - PropertyIsLessThanOrEqualTo, 72
  - PropertyIsNotEqualTo, 75
- \* **BinaryLogicOpType**
  - And, 4
  - BinaryLogicOpType, 8
  - Or, 39
- \* **Bounding**
  - WPSBoundingBoxData, 128
- \* **Box**
  - WPSBoundingBoxData, 128
- \* **CAS**
  - CASClient, 9
- \* **CSW**
  - CSWCapabilities, 10
  - CSWClient, 12
  - CSWDescribeRecord, 19
  - CSWGetRecordById, 20
  - CSWGetRecords, 22
  - CSWHarvest, 24
  - CSWRecordProperty, 28
  - CSWTransaction, 29
- \* **Capabilities**
  - CSWCapabilities, 10
  - WPSCapabilities, 129
- \* **Central**
  - CASClient, 9
- \* **CodeType**
  - OWSCodeType, 49
- \* **Common**
  - OWSClient, 46
- \* **ComplexData**
  - WPSComplexData, 134
- \* **Coverage**
  - WCSCoverage, 81
  - WCSCoverage, 84
  - WCSCoverageDescription, 86
  - WCSCoverageDomain, 88
  - WCSCoverageSpatialDomain, 90
  - WCSCoverageSummary, 92
  - WCSCoverageTemporalDomain, 96
  - WCSGridCRS, 101
- \* **DescribeCoverage**
  - WCSDescribeCoverage, 97
- \* **DescribeFeatureType**
  - WFSDescribeFeatureType, 109
- \* **DescribeProcess**
  - WPSDescribeProcess, 138
- \* **DescribeRecord**
  - CSWDescribeRecord, 19
- \* **Exception**
  - WPSException, 141
- \* **ExecuteResponse**
  - WPSExecuteResponse, 145
- \* **Execute**
  - WPSExecute, 143
- \* **Expression**
  - And, 4
  - BBOX, 5
  - BinaryComparisonOpType, 6
  - BinaryLogicOpType, 8
  - Not, 32
  - OGCExpression, 36
  - Or, 39
  - PropertyIsBetween, 67



- PropertyIsEqualTo, 68
- PropertyIsGreaterThan, 69
- PropertyIsGreaterThanOrEqualTo, 70
- PropertyIsLessThan, 71
- PropertyIsLessThanOrEqualTo, 72
- PropertyIsLike, 74
- PropertyIsNotEqualTo, 75
- PropertyIsNull, 76
- UnaryLogicOpType, 78
- \* **FeatureType**
  - WFSFeatureType, 110
  - WFSFeatureTypeElement, 114
- \* **Feature**
  - WFSCClient, 106
- \* **Filter**
  - CSWConstraint, 17
  - OGCFilter, 38
- \* **GeoServer**
  - WCSGSElevationDomain, 102
  - WCSGSTimeDomain, 103
- \* **GetCapabilities**
  - OWSCapabilities, 43
  - OWSGetCapabilities, 51
  - WCSCapabilities, 80
  - WFSCapabilities, 105
  - WMSCapabilities, 117
- \* **GetCoverage**
  - WCSGetCoverage, 99
- \* **GetFeatureInfo**
  - WMSClient, 119
  - WMSGetFeatureInfo, 122
- \* **GetFeature**
  - WFSGetFeature, 116
- \* **GetRecordById**
  - CSWGetRecordById, 20
- \* **GetRecords**
  - CSWGetRecords, 22
- \* **HTTP**
  - OWSHttpRequest, 53
- \* **Harvest**
  - CSWHarvest, 24
- \* **Identification**
  - OWSServiceIdentification, 61
- \* **Input**
  - WPSInput, 149
  - WPSOutput, 156
- \* **Layer**
  - WMSLayer, 124
- \* **LiteralData**
  - WPSLiteralData, 152
- \* **Map**
  - WMSClient, 119
- \* **Not**
  - Not, 32
- \* **OGC**
  - And, 4
  - BBOX, 5
  - BinaryComparisonOpType, 6
  - BinaryLogicOpType, 8
  - CSWCapabilities, 10
  - CSWClient, 12
  - CSWConstraint, 17
  - CSWDescribeRecord, 19
  - CSWGetRecordById, 20
  - CSWGetRecords, 22
  - CSWHarvest, 24
  - CSWQuery, 25
  - CSWTransaction, 29
  - Not, 32
  - OGCAbstractObject, 33
  - OGCExpression, 36
  - OGCFilter, 38
  - Or, 39
  - OWSBoundingBox, 41
  - OWSCapabilities, 43
  - OWSClient, 46
  - OWSException, 50
  - OWSGetCapabilities, 51
  - OWSHttpRequest, 53
  - OWSOperation, 57
  - OWSOperationsMetadata, 59
  - OWSRequest, 60
  - OWSServiceIdentification, 61
  - OWSServiceProvider, 63
  - OWSUtils, 65
  - OWSWG84BoundingBox, 66
  - PropertyIsBetween, 67
  - PropertyIsEqualTo, 68
  - PropertyIsGreaterThan, 69
  - PropertyIsGreaterThanOrEqualTo, 70
  - PropertyIsLessThan, 71
  - PropertyIsLessThanOrEqualTo, 72
  - PropertyIsLike, 74
  - PropertyIsNotEqualTo, 75
  - PropertyIsNull, 76
  - UnaryLogicOpType, 78

- WCSCapabilities, 80
- WCSClient, 81
- WCSCoverage, 84
- WCSCoverageDescription, 86
- WCSCoverageDomain, 88
- WCSCoverageSpatialDomain, 90
- WCSCoverageSummary, 92
- WCSCoverageTemporalDomain, 96
- WCSDescribeCoverage, 97
- WCSGetCoverage, 99
- WCSGridCRS, 101
- WFSCapabilities, 105
- WFSClient, 106
- WFSDescribeFeatureType, 109
- WFSFeatureType, 110
- WFSFeatureTypeElement, 114
- WFSGetFeature, 116
- WMSCapabilities, 117
- WMSClient, 119
- WMSGetFeatureInfo, 122
- WMSLayer, 124
- WPSBoundingBoxData, 128
- WPSCapabilities, 129
- WPSClient, 131
- WPSComplexData, 134
- WPSComplexInputDescription, 136
- WPSComplexOutputDescription, 137
- WPSDescribeProcess, 138
- WPSDescriptionParameter, 140
- WPSException, 141
- WPSExecute, 143
- WPSExecuteResponse, 145
- WPSFormat, 147
- WPSInput, 149
- WPSInputDescription, 150
- WPSLiteralData, 152
- WPSLiteralInputDescription, 153
- WPSLiteralOutputDescription, 155
- WPSOutput, 156
- WPSOutputDescription, 158
- WPSParameter, 159
- WPSProcess, 160
- WPSProcessDescription, 162
- WPSResponseDocument, 165
- WPSStatus, 166
- \* **OWS**
  - OWSBoundingBox, 41
  - OWSCapabilities, 43
  - OWSClient, 46
  - OWSCodeType, 49
  - OWSHttpRequest, 53
  - OWSNamespace, 56
  - OWSOperation, 57
  - OWSOperationsMetadata, 59
  - OWSServiceIdentification, 61
  - OWSServiceProvider, 63
  - OWSUtils, 65
  - OWSWG84BoundingBox, 66
- \* **Object**
  - OGCAbstractObject, 33
- \* **Or**
  - Or, 39
- \* **Parameter**
  - WPSParameter, 159
- \* **ProcessDescription**
  - WPSProcessDescription, 162
- \* **Processing**
  - WPSClient, 131
- \* **Process**
  - WPSClient, 131
  - WPSComplexInputDescription, 136
  - WPSComplexOutputDescription, 137
  - WPSDescriptionParameter, 140
  - WPSFormat, 147
  - WPSInputDescription, 150
  - WPSLiteralInputDescription, 153
  - WPSLiteralOutputDescription, 155
  - WPSOutputDescription, 158
  - WPSProcess, 160
  - WPSProcessDescription, 162
- \* **PropertyIsBetween**
  - PropertyIsBetween, 67
- \* **PropertyIsEqualTo**
  - PropertyIsEqualTo, 68
- \* **PropertyIsGreaterThanOrEqualTo**
  - PropertyIsGreaterThanOrEqualTo, 70
- \* **PropertyIsGreaterThan**
  - PropertyIsGreaterThan, 69
- \* **PropertyIsLessThan**
  - PropertyIsLessThan, 71
- \* **PropertyIsLesserThanOrEqualTo**
  - PropertyIsLessThanOrEqualTo, 72
- \* **PropertyIsLike**
  - PropertyIsLike, 74
- \* **PropertyIsNotEqualTo**
  - PropertyIsNotEqualTo, 75

- \* **PropertyIsNull**
  - PropertyIsNull, 76
- \* **Provider**
  - OWSServiceProvider, 63
- \* **Query**
  - CSWQuery, 25
- \* **RecordProperty**
  - CSWRecordProperty, 28
- \* **Request**
  - OWSHttpRequest, 53
  - OWSRequest, 60
- \* **ResponseDocument**
  - WPSResponseDocument, 165
- \* **Service**
  - CASClient, 9
  - OWSRequest, 60
  - OWSServiceIdentification, 61
  - OWSServiceProvider, 63
- \* **Status**
  - WPSStatus, 166
- \* **Transaction**
  - CSWTransaction, 29
- \* **UnaryLogicOpType**
  - Not, 32
  - UnaryLogicOpType, 78
- \* **Utils**
  - OWSUtils, 65
- \* **WCS**
  - WCSCapabilities, 80
  - WCSClient, 81
  - WCSCoverage, 84
  - WCSCoverageDescription, 86
  - WCSCoverageDomain, 88
  - WCSCoverageSpatialDomain, 90
  - WCSCoverageSummary, 92
  - WCSCoverageTemporalDomain, 96
  - WCSDescribeCoverage, 97
  - WCSGetCoverage, 99
  - WCSGridCRS, 101
  - WCSGSElevationDomain, 102
  - WCSGSTimeDomain, 103
- \* **WFS**
  - WFSCapabilities, 105
  - WFSClient, 106
  - WFSDescribeFeatureType, 109
  - WFSFeatureType, 110
  - WFSFeatureTypeElement, 114
  - WFSGetFeature, 116
- \* **WMS**
  - WMSCapabilities, 117
  - WMSClient, 119
  - WMSGetFeatureInfo, 122
  - WMSLayer, 124
- \* **WPS**
  - WPSBoundingBoxData, 128
  - WPSCapabilities, 129
  - WPSClient, 131
  - WPSComplexData, 134
  - WPSComplexInputDescription, 136
  - WPSComplexOutputDescription, 137
  - WPSDescribeProcess, 138
  - WPSDescriptionParameter, 140
  - WPSException, 141
  - WPSExecute, 143
  - WPSExecuteResponse, 145
  - WPSFormat, 147
  - WPSInput, 149
  - WPSInputDescription, 150
  - WPSLiteralData, 152
  - WPSLiteralInputDescription, 153
  - WPSLiteralOutputDescription, 155
  - WPSOutput, 156
  - WPSOutputDescription, 158
  - WPSParameter, 159
  - WPSProcess, 160
  - WPSProcessDescription, 162
  - WPSResponseDocument, 165
  - WPSStatus, 166
- \* **boundingbox**
  - OWSBoundingBox, 41
  - OWSWG84BoundingBox, 66
- \* **catalogue**
  - CSWClient, 12
- \* **complex**
  - WPSComplexInputDescription, 136
  - WPSComplexOutputDescription, 137
- \* **crs**
  - WCSGridCRS, 101
- \* **data**
  - WPSBoundingBoxData, 128
- \* **description**
  - WPSComplexInputDescription, 136
  - WPSComplexOutputDescription, 137
  - WPSDescriptionParameter, 140
  - WPSFormat, 147
  - WPSInputDescription, 150

- WPSLiteralInputDescription, [153](#)
- WPSLiteralOutputDescription, [155](#)
- WPSOutputDescription, [158](#)
- \* **domain**
  - WCSCoverageDomain, [88](#)
  - WCSCoverageSpatialDomain, [90](#)
  - WCSCoverageTemporalDomain, [96](#)
  - WCSGSElevationDomain, [102](#)
  - WCSGSTimeDomain, [103](#)
- \* **elevation**
  - WCSGSElevationDomain, [102](#)
- \* **exception**
  - OWSException, [50](#)
- \* **grid**
  - WCSGridCRS, [101](#)
- \* **input**
  - WPSComplexInputDescription, [136](#)
  - WPSDescriptionParameter, [140](#)
  - WPSFormat, [147](#)
  - WPSInputDescription, [150](#)
  - WPSLiteralInputDescription, [153](#)
- \* **literal**
  - WPSLiteralOutputDescription, [155](#)
- \* **metadata**
  - OWSOperationsMetadata, [59](#)
- \* **namespace**
  - OWSNamespace, [56](#)
- \* **operation**
  - OWSOperation, [57](#)
  - OWSOperationsMetadata, [59](#)
- \* **output**
  - WPSComplexOutputDescription, [137](#)
  - WPSLiteralOutputDescription, [155](#)
  - WPSOutputDescription, [158](#)
- \* **parameter**
  - WPSDescriptionParameter, [140](#)
- \* **service**
  - CSWClient, [12](#)
- \* **spatial**
  - WCSCoverageSpatialDomain, [90](#)
- \* **temporal**
  - WCSCoverageTemporalDomain, [96](#)
- \* **time**
  - WCSGSTimeDomain, [103](#)
- \* **web**
  - CSWClient, [12](#)
- \* **wgs84**
  - OWSWGSS84BoundingBox, [66](#)
- And, [4, 4](#)
- BBOX, [5, 6](#)
- BinaryComparisonOpType, [6, 7](#)
- BinaryLogicOpType, [8, 8](#)
- CASClient, [9, 9](#)
- character, [113](#)
- CSWCapabilities, [10, 11, 13, 19, 21, 23, 25, 30](#)
- CSWClient, [11, 12](#)
- CSWConstraint, [15, 17, 18, 26](#)
- CSWDescribeRecord, [13, 19, 19](#)
- CSWGetRecordById, [14, 20, 21, 22](#)
- CSWGetRecords, [14, 22](#)
- CSWHarvest, [24, 24](#)
- CSWQuery, [14, 16, 23, 25](#)
- CSWRecordProperty, [15, 28, 28](#)
- CSWTransaction, [15, 29, 30](#)
- geometa::geometaLogger, [86, 103, 104](#)
- geometa::GMLAbstractCoverage, [86](#)
- geometa::GMLAbstractFeature, [86](#)
- geometa::GMLAbstractObject, [86](#)
- geometa::GMLCOVAbstractCoverage, [86](#)
- geometa::ISOAbstractObject, [86, 103, 104](#)
- getOWSNamespace, [31](#)
- getOWSNamespace, [31](#)
- GMLEnvelope, [5, 91](#)
- GMLEnvelopeWithTimePeriod, [91](#)
- GMLGrid, [91](#)
- GMLRectifiedGrid, [91](#)
- GMLTimePeriod, [97](#)
- integer, [113](#)
- ISOResponsibleParty, [64](#)
- logical, [113](#)
- mclapply, [113](#)
- Not, [32, 32](#)
- OGCAbstractObject, [33, 34](#)
- OGCExpression, [4, 8, 32, 36, 37, 38, 40, 79](#)
- OGCFilter, [18, 38, 38](#)
- Or, [39, 40](#)
- ows4R, [40](#)
- ows4R-package (ows4R), [40](#)

- ows4R::BinaryComparisonOpType, [68–70](#), [72](#), [73](#), [75](#)
- ows4R::BinaryLogicOpType, [4](#), [39](#)
- ows4R::OGCAbstractObject, [4](#), [5](#), [7](#), [8](#), [11](#), [12](#), [17](#), [19](#), [20](#), [22](#), [24](#), [26](#), [28](#), [29](#), [32](#), [37–39](#), [41](#), [43](#), [46](#), [49–51](#), [53](#), [60](#), [66–70](#), [72–75](#), [77](#), [78](#), [80](#), [81](#), [84](#), [88](#), [91](#), [92](#), [96](#), [97](#), [99](#), [101](#), [105](#), [106](#), [109](#), [111](#), [116](#), [117](#), [119](#), [123](#), [124](#), [128](#), [129](#), [132](#), [135](#), [136](#), [138–140](#), [142](#), [143](#), [145](#), [147](#), [149](#), [150](#), [152](#), [153](#), [155](#), [156](#), [158–160](#), [163](#), [165](#), [166](#)
- ows4R::OGCExpression, [4](#), [5](#), [7](#), [8](#), [32](#), [39](#), [67–70](#), [72–75](#), [77](#), [78](#)
- ows4R::OWSBoundingBox, [66](#), [128](#)
- ows4R::OWSCapabilities, [11](#), [80](#), [105](#), [117](#), [129](#)
- ows4R::OWSClient, [12](#), [81](#), [106](#), [119](#), [132](#)
- ows4R::OWSHttpRequest, [19](#), [20](#), [22](#), [24](#), [29](#), [51](#), [97](#), [99](#), [109](#), [116](#), [123](#), [139](#), [143](#)
- ows4R::UnaryLogicOpType, [32](#)
- ows4R::WPSDescriptionParameter, [136](#), [138](#), [150](#), [153](#), [155](#), [158](#)
- ows4R::WPSInputDescription, [136](#), [153](#)
- ows4R::WPSOutputDescription, [138](#), [155](#)
- ows4R::WPSParameter, [136](#), [138](#), [140](#), [150](#), [153](#), [155](#), [158](#)
- OWSBoundingBox, [41](#), [41](#), [42](#), [66](#), [91](#), [94](#)
- OWSCapabilities, [43](#), [43](#), [47](#), [54](#), [60](#)
- OWSClient, [44](#), [46](#)
- OWSCodeType, [49](#), [49](#)
- OWSException, [50](#), [50](#)
- OWSGetCapabilities, [11](#), [44](#), [45](#), [51](#), [52](#), [80](#), [105](#), [118](#), [130](#)
- OWSHttpRequest, [53](#)
- OWSNamespace, [56](#), [56](#)
- OWSOperation, [19](#), [21](#), [23](#), [25](#), [30](#), [54](#), [57](#), [57](#), [59](#), [98](#), [100](#), [110](#), [116](#), [123](#), [139](#), [144](#)
- OWSOperationsMetadata, [45](#), [59](#), [59](#)
- OWSRequest, [60](#), [60](#), [118](#)
- OWSServiceIdentification, [45](#), [61](#), [62](#)
- OWSServiceProvider, [45](#), [63](#), [64](#)
- OWSUtils, [65](#)
- OWSWG84BoundingBox, [66](#), [94](#)
- PropertyIsBetween, [67](#)
- PropertyIsEqualTo, [68](#), [68](#)
- PropertyIsGreaterThan, [69](#), [69](#)
- PropertyIsGreaterThanOrEqualTo, [70](#), [71](#)
- PropertyIsLessThan, [71](#), [72](#)
- PropertyIsLessThanOrEqualTo, [72](#), [73](#)
- PropertyIsLike, [67](#), [74](#), [74](#), [77](#)
- PropertyIsNotEqualTo, [75](#), [76](#)
- PropertyIsNull, [76](#)
- R6Class, [4–6](#), [8–12](#), [17](#), [19](#), [20](#), [22](#), [24](#), [26](#), [28](#), [29](#), [32](#), [33](#), [36](#), [38](#), [39](#), [41](#), [43](#), [46](#), [49–51](#), [53](#), [56](#), [57](#), [59–61](#), [63](#), [65–71](#), [73–76](#), [78](#), [80](#), [81](#), [84](#), [86](#), [88](#), [90](#), [92](#), [96](#), [97](#), [99](#), [101–106](#), [109](#), [111](#), [114](#), [116](#), [117](#), [119](#), [122](#), [124](#), [128](#), [129](#), [132](#), [134–141](#), [143](#), [145](#), [147](#), [149](#), [150](#), [152](#), [153](#), [155](#), [156](#), [158–160](#), [162](#), [163](#), [165](#), [166](#)
- registerOWSNamespace, [77](#)
- setOWSNamespace, [78](#)
- stack, [95](#)
- UnaryLogicOpType, [78](#), [79](#)
- WSCCapabilities, [80](#), [80](#), [82](#), [93](#), [98](#), [100](#)
- WCSClient, [80](#), [81](#), [82](#)
- WCSCoverage, [84](#), [85](#)
- WCSCoverageDescription, [83](#), [86](#), [87](#), [94](#)
- WCSCoverageDomain, [88](#), [89](#), [91](#)
- WCSCoverageFilenameHandler, [90](#), [95](#)
- WCSCoverageSpatialDomain, [89](#), [90](#)
- WCSCoverageSummary, [80](#), [92](#), [93](#), [100](#)
- WCSCoverageTemporalDomain, [89](#), [96](#), [96](#)
- WCSDescribeCoverage, [97](#), [98](#)
- WCSGetCoverage, [84](#), [95](#), [99](#), [99](#)
- WCSGridCRS, [92](#), [101](#), [102](#)
- WCSGSElevationDomain, [102](#)
- WCSGSTimeDomain, [103](#)
- WFSCapabilities, [105](#), [105](#), [107](#), [110](#), [111](#), [116](#)
- WFSCClient, [106](#), [107](#)
- WFSDescribeFeatureType, [109](#), [109](#)
- WFSFeatureType, [106](#), [108](#), [110](#), [111](#)
- WFSFeatureTypeElement, [108](#), [112](#), [114](#), [114](#)
- WFSGetFeature, [108](#), [113](#), [116](#), [116](#)
- WMSCapabilities, [117](#), [118](#), [120](#), [123](#), [125](#)
- WMSClient, [119](#), [120](#)
- WMSGetFeatureInfo, [121](#), [122](#), [123](#), [127](#)
- WMSLayer, [118](#), [121](#), [124](#), [125](#)
- WPSBoundingBoxData, [128](#), [128](#), [131](#), [134](#), [144](#), [162](#)

WPSCapabilities, [129](#), [130](#), [133](#), [139](#), [144](#),  
[146](#), [147](#), [161](#)  
WPSClient, [130](#), [131](#), [132](#)  
WPSComplexData, [131](#), [134](#), [134](#), [135](#), [144](#), [162](#)  
WPSComplexInputDescription, [136](#), [136](#),  
[137](#)  
WPSComplexOutputDescription, [137](#), [138](#)  
WPSDescribeProcess, [138](#), [139](#)  
WPSDescriptionParameter, [140](#), [140](#)  
WPSException, [141](#), [142](#), [146](#)  
WPSExecute, [143](#), [143](#)  
WPSExecuteResponse, [145](#), [145](#), [146](#)  
WPSFormat, [147](#), [148](#)  
WPSInput, [143](#), [149](#), [150](#)  
WPSInputDescription, [150](#), [151](#), [164](#)  
WPSLiteralData, [131](#), [134](#), [144](#), [152](#), [152](#), [162](#)  
WPSLiteralInputDescription, [153](#), [153](#),  
[154](#)  
WPSLiteralOutputDescription, [155](#), [155](#)  
WPSOutput, [156](#), [156](#), [157](#)  
WPSOutputDescription, [158](#), [158](#), [164](#)  
WPSParameter, [159](#), [159](#)  
WPSProcess, [146](#), [160](#), [161](#)  
WPSProcessDescription, [130](#), [133](#), [144](#), [161](#),  
[162](#), [163](#)  
WPSResponseDocument, [131](#), [134](#), [144](#), [162](#),  
[165](#), [165](#)  
WPSStatus, [146](#), [166](#), [167](#)

XMLInternalNode-class, [35](#), [36](#), [42](#), [49](#), [50](#),  
[58–60](#), [62](#), [64](#), [66](#), [85](#), [87](#), [89](#), [91](#), [93](#),  
[96](#), [102–104](#), [111](#), [114](#), [125](#), [129](#),  
[135](#), [137](#), [138](#), [141](#), [142](#), [146–148](#),  
[150–152](#), [154](#), [155](#), [157–159](#), [161](#),  
[163](#), [165](#), [167](#)