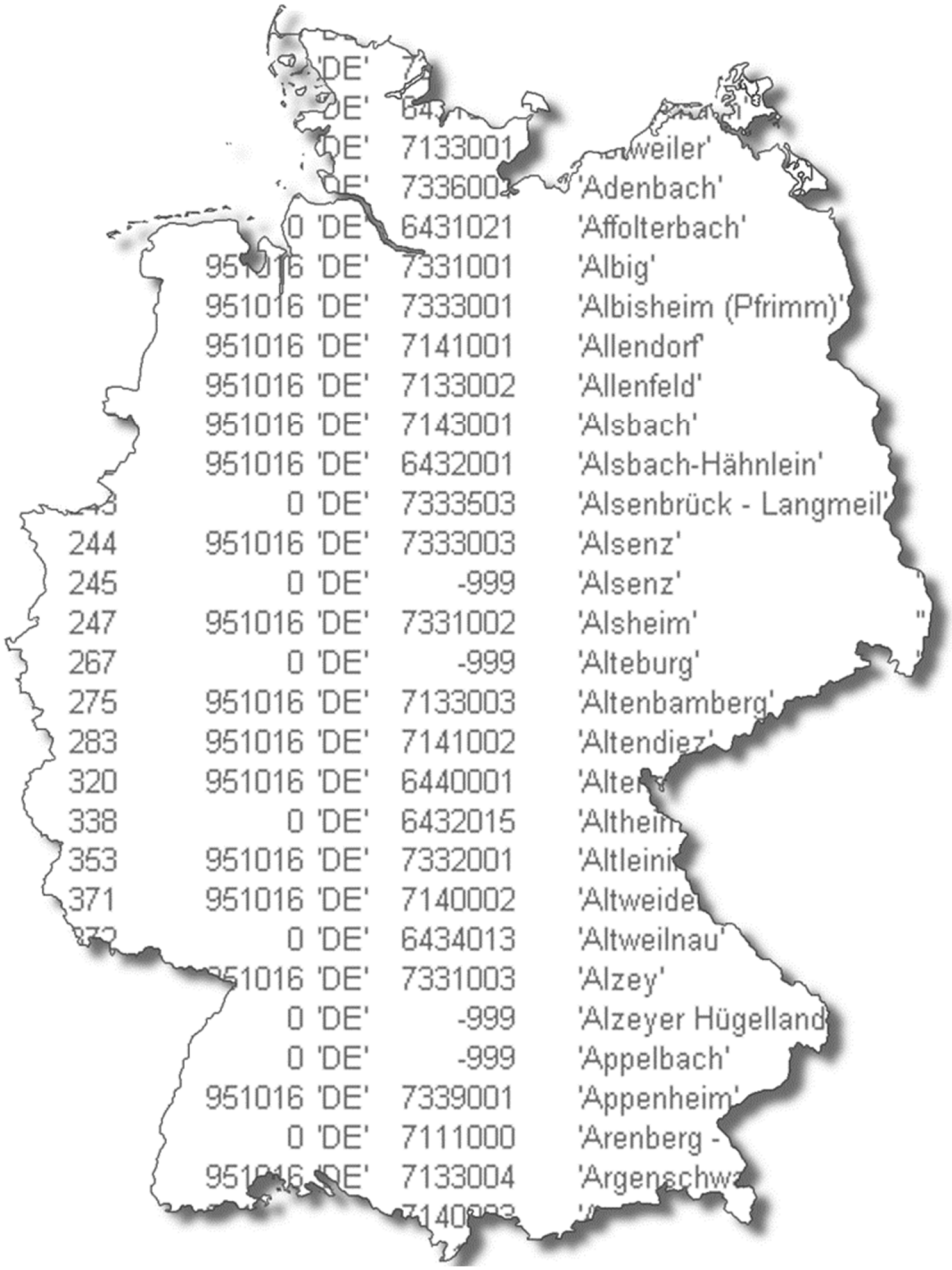
Documentation

Web Feature Service
Geographical Names Germany
WFS GN-DE Flat | Full



Contents

1 Overview

Product:	WFS Geographische Namen Deutschlands (GN-DE) wfs_gnde wfs_gnde_full wfs_gnde_flat
Content:	Geographical names of places and parts of places, administrative areas (federal states, administrative districts, counties, municipalities), landscapes, mountains, hills, islands, rivers, canals, lakes, seas and the like. The service essentially includes all geographical objects in Germany designated with names that are contained in the ATKIS digital landscape model 1:250,000 or are represented in topographic maps of the scale range 1:200,000 and smaller.
Coverage:	Federal Republic of Germany
Coordinate Reference System:	EPSG: 2397, 2398, 2399, 3034, 3035, 3044, 3045, 3857, 4258, 4326, 4647, 4839, 5650, 5676, 5677, 5678, 5679, 25832, 25833, 31466, 31467, 31468, 31469, 32632, 32633
Reference Date:	31.12.2020

Data Formats:	`application/gml+xml; version=2.1.2`
	`text/xml; subtype=gml/2.1.2`
	`application/gml+xml; version=3.0`
	text/xml; subtype=gml/3.0
	application/gml+xml; version=3.1
	text/xml; subtype=gml/3.1.1
	application/gml+xml; version=3.2
	text/xml; subtype=gml/3.2.1

Provision*:	Web Feature Service (WFS) WFS GN-DE: https://sgx.geodatenzentrum.de/wfs_gnde WFS GN-DE Flat: https://sg.geodatenzentrum.de/wfs_gnde_flat WFS GN-DE Full: https://sg.geodatenzentrum.de/wfs_gnde_full

Changes compared to last data set:	No
Historic Data:	No
Data Sources:	Registers of the statistical offices of the Länder (federal states) Federal Statistical Office (populations, Regional and Official Municipality Key) Digital Landscape Models 1:250 000 (DLM250) DGM10 (for determination of the calculated heights with locations) Federal Network Agency (area codes)

* Please note that not all forms of delivery can be provided with each georeferencing and data format. If you have any questions, feel free contact the Service Centre (DLZ).

2 Description of the dataset and online services

2.1 Content

The dataset "Geographical Names of Germany (GN-DE)" is processed by the Federal Agency for Cartography and Geodesy and essentially contains all geographical objects of Germany designated with names which are contained in the Digital Landscape Model 1:250,000 of the ATKIS (Amtliches Topographisch-Kartographisches Informationssystem) or are represented in topographic maps of the scale range 1:200,000 and smaller.

The main components of the dataset are:

- Places and districts,
- Administrative areas (Bundesländer (federal states), Regierungsbezirke (administrative districts), Kreise (districts/counties), municipalities),
- landscapes, mountains, islands, hills etc.,
- rivers, canals, lakes, seas, etc.

with attribute data on:

- names,
- administrative division (statistical key number),
- postcode regions concerned,
- altitude,
- river system (hydrographical area code),
- main natural unit (guide number),
- ...

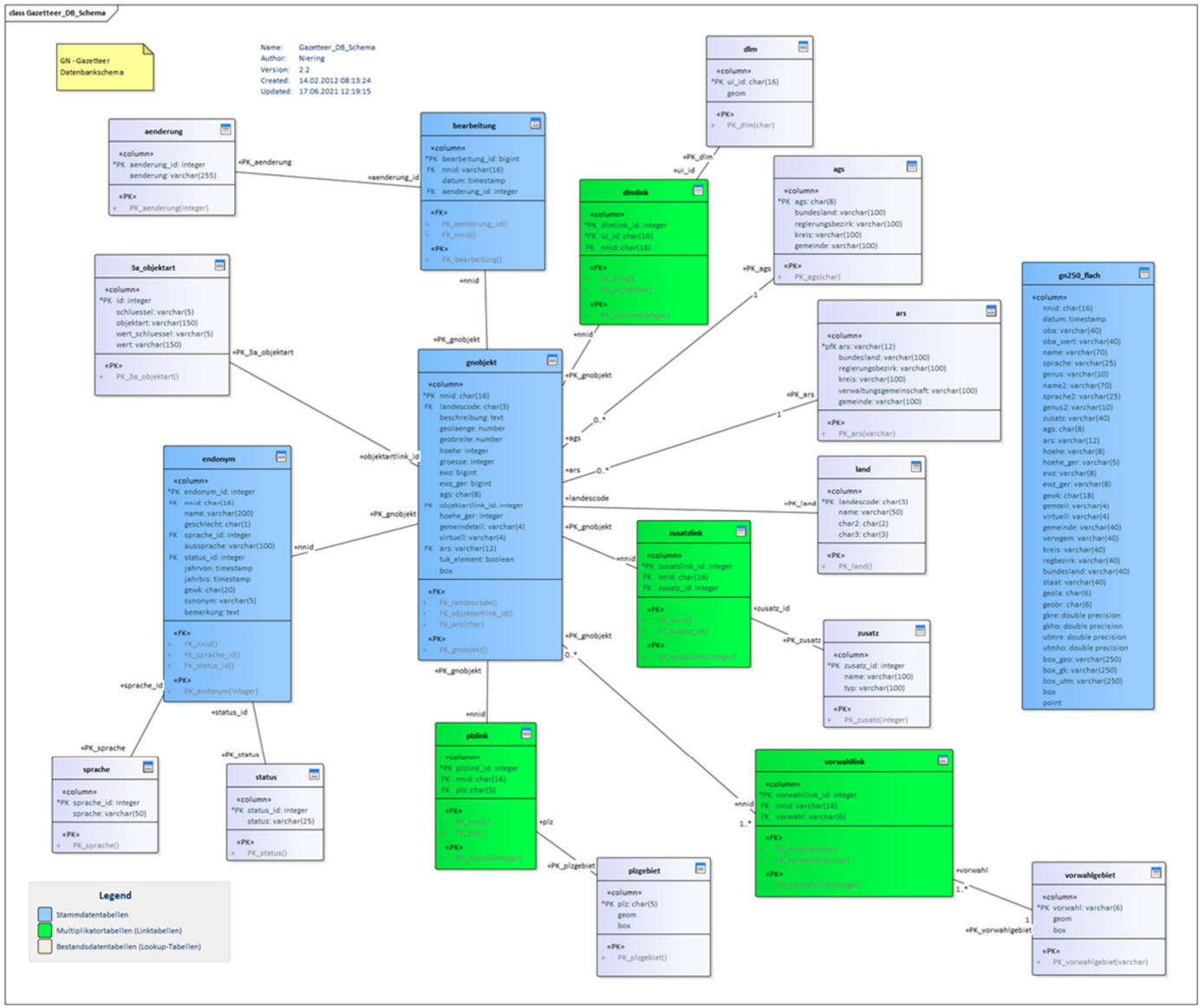
with the geometric location description of the objects:

- as the smallest circumscribing rectangle (bounding box),
- as a complete point, line or area description.

The complete geometric location description is obtained directly from the digital landscape model mentioned above. The complete area descriptions are also available for the postcode areas. However, these are only available to federal institutions!

Figure 1 shows the data model underlying the GN-DE dataset and, in principle, also the complex services described below. For the provision of a simplified service, the most important information of the dataset was provided in a flat data structure as shown in Figure 1 (table gn250_flat). For the description of the services, please refer to the notes under point 3.

Figure 1: Data model GN-DE (Date: 21.06.2021).



2.2 Basic information on the Web Feature Service GN-DE

2.2.1 Web Feature Service (WFS) according to OGC

The dataset GN-DE is provided as a standardized Web Feature Service (WFS) according to the specification of the Open Geospatial Consortium (OGC). The applicable documentation is retrievable under http://www.opengeospatial.org.
According to the OGC specification the currently supported WFS versions as well as all other technical details can be determined via a **GetCapabilities** request of the service. The service‘s concrete data model is supplied as an XML schema definition through a **DescribeFeatureType** request.

2.2.2 On the implementation of the WFS GN-DE

The WFS GN-DE has been realized exclusively on the basis of Open-Source-Software and internal developments of the Dienstleistungszentrum (DLZ) using Java technology.
The Web service comprises the following components:

- **Safety component** for authorized access:
  Java Servlet *SecurityGate*
  (a development of the GDZ)
- **WFS** of the Open Source Project ***deegree3***
  (see http://deegree.org/)
- **Open Source Database** *PostgreSQL* with the extension *PostGIS*
  (see http://www.postgresql.org and http://www.postgis.org)

Besides the four Web services, BKG offers a **graphical Web application** for the search of geographical names, see

www.geodatenzentrum.de → Web-Anwendungen (Web applications) → Geographische Namen (Geographical Names).

In the background, the purely HTML-based search requests the service wfs_gnde and is coupled with a server-side generation of the appertaining map graphics. The search results are represented through visualization of the relevant map sections as well as by a choice of attributes of the name objects. For reasons of safety, active contents (e.g. JavaScript) are dispensed with. Therefore, the search and navigation functionality within the map has been limited to elementary methods. Interested parties can view the request to the WFS and its response (both in XML format).

2.2.3 The data model and FeatureTypes of the WFS

For better understanding of the WFS GN-DE and its FeatureType-Model (visible via evaluation of GetCapabilities and DescribeFeatureType, see item 2.1) the following principles have been realized in implementing the WFS:

- Each table name of the data model indicated in Figure 1 corresponds to a FeatureType of the WFS GN-DE.
- Each attribute specified in the data model not displayed in brackets corresponds to an attribute of the related FeatureType of the WFS.

  Bracketed attributes have only a purely database-technical significance and are therefore not offered in the WFS.
- The spellings used in Figures 1 are identical with the names of the XML tags in the GML (Geography Markup Language) exchange format.
- Each relation to be displayed according to the GML specification as an attribute between two tables (FeatureTypes) named A and B bears the name “hatB“. The “hat“ relations displayed in the model are indicated in Figures 1 by directional arrows.

From this can be systematically derived the following examples of qualified PropertyName information with XML-based requests (“gn“ be the acronym for the NameSpace indication). For further explanations cf. specifications “Web Feature Service“, “Filter Encoding“ and “Geographic Markup Language“ under http://www.opengeospatial.org).

Exemplary consideration starting from the FeatureType GnObject:

- Attribute nnid of the FeatureType GnObject:

  gn:GnObjekt/gn:nnid
- Attribute name of the assigned FeatureType Endonym to the FeatureType GnObject:

  gn:GnObjekt/gn:hatEndonym/gn:Endonym/gn:name
- Attribute language of the FeatureType language to the Endonym of the FeatureType GnObject:

  gn:GnObjekt/gn:hatEndonym/gn:Endonym/gn:hatSprache/gn:Sprache/gn:sprache

Exemplary consideration starting from the FeatureType Endonym:

- Attribut name of the FeatureType Endonym

  gn:Endonym/gn:name
- Attribut sprache of the FeatureTypes language to the Endonym

  gn:Endonym/gn:hatSprache/gn:Sprache/gn:sprache

In **Annex 1** you can find a list of the GML identificators and the appropriate generation rules used in this context.
Annex 2 contains a list of all PropertyNames for the FeatureType GnFlach with explanations on its contents.

2.3 Variants of WFS GN-DE

2.3.1 Web Feature Service wfs_gnde

The **wfs_gnde** provides circumscribing rectangles as geometry. In this variant all information of the GN-DE is available, with the exception of the following restrictions:

- The tables **PlzLink** and **PlzGebiet** are omitted. These data cannot be directly specified in enquiries, and are therefore neither contained in the respective replies.

2.3.2 Web Feature Service wfs_gnde_full

The **wfs_gnde_full** provides also externally the whole geometry of the name objects. In this version all GN-DE data according to Figure 1 are available, except for indication of the processor of the table Processing.
Thus, this WFS also allows full access to the punctiform, linear or areal geometries of the DLM250, respectively.
.

2.3.3 Web Feature Service wfs_gnde_flat

The **wfs_gnde_flat** provides in the form of a flat Featuretype the most important information of the GN-DE dataset. Further, the WFS supplies both circumscribing rectangles as geometry, and point coordinates describing the corresponding name object.
The data model is given under Figure 1.

3 Terms of use and copyright

4 Contact

Bundesamt für Kartographie und Geodäsie
Referat GDL2 | Dienstleistungszentrum des Bundes für Geoinformation und Geodäsie (DLZ)
Zentrale Stelle Geotopographie (ZSGT)
Karl-Rothe-Straße 10-14
D-04105 Leipzig

Tel.: +49(0)341 5634-333
Fax: +49(0)341 5634-415
E-Mail: dlz@bkg.bund.de

Further information and services can be found on our homepage www.bkg.bund.de under the heading „Products & Services“.

Annex 1:

Formation rule for the special GML identifiers gml:id

List of the GML identifiers gml:id and the prefixes used in the WFS GN-DE. The prefix is followed by a unique identifier for the respective FeatureType.

FeatureType	Prefix for gml:id
GnObjekt	Gno_
Endonym	End_
Zusatz	Zus_
ZusatzLink	Zusl_
Dlm	Dlm_
DlmLink	Dlml_
Aenderung	Aen_
Bearbeitung	Bea_
Status	Sta_
Sprache	Spr_
Objektart	Obj_
Ags	Ags_
Land	Lan_
Ars	Ars_
PlzLink	Plzl_
PlzGebiet	Plzg_
VorwahlLink	Vorl_
VorwahlGebiet	Vorg_

Annex 2:

List of all PropertyNames available in the wfs_gnde_flat for the FeatureType GnFlach

PropertyName at the WFS	Meaning
gn:GnFlach/gn:nnid	National names identifier
gn:GnFlach/gn:datum	Date of the last modification of the name object (JJJJMMDD)
gn:GnFlach/gn:oba	Name of the ATKIS object type to which the name object belongs
gn:GnFlach/gn:obaAtt	Name of the attribute of oba which, if necessary, underpins the classification of the name object (applies only to the object type “Verwaltungseinheit“) (administrative unit)
gn:GnFlach/gn:obaWert	Attribute value on obaAtt (only for the object type “Verwaltungseinheit“)
gn:GnFlach/gn:name	Name of the geographical name object (official name of the LANGUAGE ‘GERMAN’)
gn:GnFlach/gn:sprache	Language to which the “NAME“ is to be assigned
gn:GnFlach/gn:genus	Gender of the geographical object (m, f, n, pl)
gn:GnFlach/gn:name2	Synonym of the object name (among others, Sorbian or Frisian or Danish name)
gn:GnFlach/gn:sprache2	Language to which the “NAME2“ is to be assigned
gn:GnFlach/gn:genus2	Gender of the geographical object (m, f, n, pl)
gn:GnFlach/gn:zusatz	Name affix [in the case of several affixes one is randomly selected]
gn:GnFlach/gn:ags	Official municipality key
gn:GnFlach/gn:rs	Regional key
gn:GnFlach/gn:hoehe	Height above sea level NN (m)
gn:GnFlach/gn:ewz	Population of municipalities (only for the object type “Verwaltungseinheit“)
gn:GnFlach/gn:gewk	Code number of waters
gn:GnFlach/gn:gemteil	Yes/No – is part of a city or not
gn:GnFlach/gn:gemeinde	Name of the municipality
gn:GnFlach/gn:verwgem	Name of the administrative association
gn:GnFlach/gn:kreis	Name of the district/county
gn:GnFlach/gn:regbezirk	Name of the administrative district
gn:GnFlach/gn:bundesland	Name of the Land (federal state)
gn:GnFlach/gn:staat	Two-letter code (ISO 3166, DIN-NABD 10.2 2-92)
gn:GnFlach/gn:geoLaenge	Geographic longitude [degree, minutes, seconds (GGMMSS)]
gn:GnFlach/gn:geoBreite	Geographic latitude [degree, minutes, seconds (GGMMSS)]
gn:GnFlach/gn:gkRechts	Gauß-Krüger easting (m)
gn:GnFlach/gn:gkHoch	Gauß-Krüger northing(m)

gn:GnFlach/gn:utmRechts	UTM easting (m)
gn:GnFlach/gn:utmHoch	UTM northing (m)
gn:GnFlach/gn:boxGeo	Smallest circumscribing rectangle for the object given in geographical coordinates, for punctiform objects artificial rectangle 0,00001 degrees x 0,00001 degrees with (geolongitude, geolatitude) as central point OGC Well Known Text (WKT) Format
gn:GnFlach/gn:boxGk	Smallest circumscribing rectangle for the object given in geographical coordinates, for punctiform objects artificial rectangle 1m x 1 m with (gkEasting, gkNorthing) as central point OGC Well Known Text (WKT) Format
gn:GnFlach/gn:boxUtm	Smallest circumscribing rectangle for the object given in geographical coordinates, for punctiform objects artificial rectangle 1m x 1 m with (gkEasting, gkNorthing) as central point OGC Well Known Text (WKT) Format
gn:GnFlach/gn:box	Geometry column with boxGeo coordinates
gn:GnFlach/gn:point	Point coordinate with geoLongitude and geoLatitude
gn:GnFlach/gn:hatPlzLink/gn:PlzLink/gn:nnid	
gn:GnFlach/gn:hatPlzLink/gn:PlzLink/gn:plz	Post code
gn:GnFlach/gn:hatDlmLink/gn:DlmLink/gn:ui_ID	
gn:GnFlach/gn:hatDlmLink/gn:DlmLink/gn:nnid	Unique geometry identifier on geometries of the DLM250
gn:GnFlach/gn:hatDlmLink/gn:DlmLink/gn:hatDlm/gn:Dlm/gn:geom	DLM250 geometry