

Training on Waveform Archive Access and Administration

Javier Quinteros

GeoForschungsZentrum
Section 2.4 - GEO FON

November 2015

Outline

- 1 General features of the software
- 2 Events
- 3 Stations
- 4 Submit Request
- 5 Request status/Download data

Section 1

General features of the software

General overview of WebDC3 at GEOFON

Information

- ca. 4700 stations
- ca. 500 events/month

Capabilities

- **Event based**
- Station based
- Timespan based
- Manage your requests

Explore a catalog of seismic events (earthquakes), or look for waveforms related to specific events. You can select events by multiple criteria, then pick from channels available at those times.

General overview of WebDC3 at GEOFON

Information

- ca. 4700 stations
- ca. 500 events/month

Capabilities

- Event based
- **Station based**
- Timespan based
- Manage your requests

Explore the inventory to see what stations/streams are available and their parameters. You can select stations/streams by multiple criteria.

General overview of WebDC3 at GEOFON

Information

- ca. 4700 stations
- ca. 500 events/month

Capabilities

- Event based
- Station based
- **Timespan based**
- Manage your requests

Obtain station/stream information over fixed periods of interest.

General overview of WebDC3 at GEOFON

Information


- ca. 4700 stations
- ca. 500 events/month

Capabilities


- Event based
- Station based
- Timespan based
- **Manage your requests**

Consult the status of all your requests and manage them from this interface.

Old and new interface





WebDC - Integrated Seismological Data Portal



Common Data Portal for GFZ Potsdam, German and European Seismological Data Archives

[New Request](#)
[Check Status](#)
[Help](#)

Select period of interest ▼

2013-10-16  - 2013-10-16 

Select events ▼

Magnitude >

Depth(km) <

Event Data Base: GFZ ▼

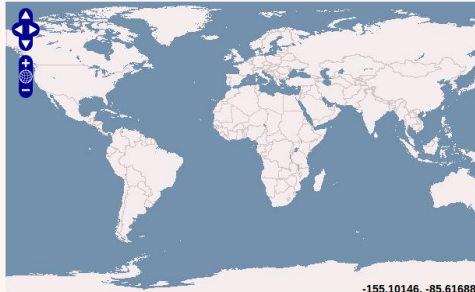
≤ Latitude ≤

≤ Longitude ≤

Select stations +

Select time window +

Double-click to zoom in, and drag to pan. Hold down the shift key and drag to select a region.



-155.10146, -85.61688

Zoom to selected region

Old and new interface



Helmholtz-Zentrum
POTSDAM



GEOFON

Access to GEOFON and EIDA Data Archives



EIDA

Helmholtz-Zentrum Potsdam
DEUTSCHES
GEOFORSCHUNGSZENTRUM

[Explore events](#)

[Explore stations](#)

[Submit request](#)

[Download data](#)

[View console](#)

[OLD webdc.eu portal](#) / [Preliminary Doc: PDF Help](#)

Events Controls ?

Event Information

Catalog Services: User Supplied

Catalog Service: GFZ

Quick look-up of last 10 events at GFZ: With Mz6.0

Date Interval (yyyy-mm-dd):
2013-08-01 to 2013-08-31


Minimum Magnitude: -2

Depth from 0 to 999 km

Coordinates: (Use -ve for SW, +ve for NE)
 N
90
 W -180 180 E
 S
-90
Clear

Reset
Search

Event and Station Map ?

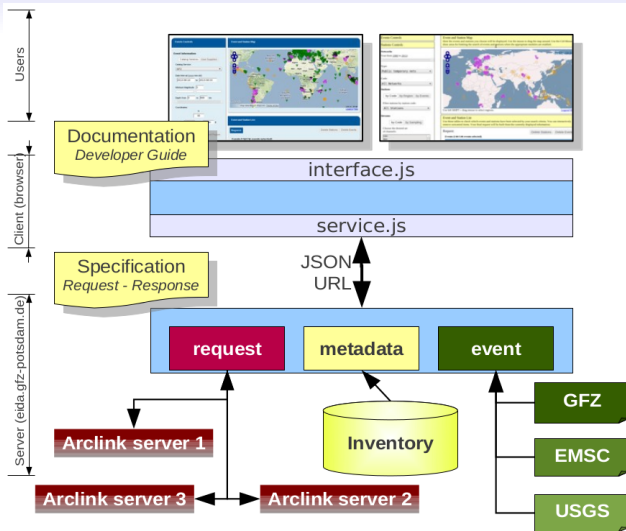


Kartendaten © 2013 MapLink - [Nutzungsbedingungen](#)

Use left SHIFT + drag mouse to select regions. [Legend Help](#)

Event and Station List ?

Software components



Improvements

- Interface remains similar to make things easy for the user.
- Code was completely restructured.
- Modular code. Easy to maintain. Easy to extend.
- No more `html_chunks.py`!
- Much faster than the old one.
- Fewer communications with the Arlink server.
- Modular support for multiple event catalogs.

Section 2

Events

Selecting events

Events Controls
?

Event Information

Catalog Service:

Quick look-up of last 10 events at GFZ:

Date Interval (yyyy-mm-dd):
 to

Minimum Magnitude:

Depth from to km

Coordinates: (Use -ve for S/W; +ve for N/E)

N

W E

S

Available catalogs today:

- 1 BMKG - BMKG catalog - <http://www.bmkg.go.id>
- 2 GFZ - The GEOFON catalog - <http://geofon.gfz-potsdam.de/eqinfo>
- 3 USGS - The ANSS Comprehensive Catalog (ComCat) service - <http://comcat.cr.usgs.gov/earthquakes/feed/v0.1/>
- 4 ISC - ISC catalog - **There could be up to 2 years of delay!**

Circular regions as well as **distance from stations** are planned for future versions.

Selecting events

Events Controls

Event Information

Catalog Services:

Event and Station Map

Catalog Input Dialog

Use this control to upload your personal event catalog to be processed by our system. The catalog should be in CSV (comma-separated value) format and may contain as many events as you want, one per line, with the same number of columns. You must also indicate which columns contain the Latitude, Longitude, Depth and Origin Time for the event. All other columns will be ignored.

Example: 2011-03-11T05:46:23;38.23;142.53;15;Tohoku

Column Number Specification:

Time: Latitude: Longitude: Depth:

Copy and paste your catalog into the area below:

[No format specified. Press "Send" first.]

2011-03-11T05:46:23;38.23;142.53;15;Tohoku

Upload your own set of events in CSV format with the following information:

- 1 Time
- 2 Latitude
- 3 Longitude
- 4 Depth

File upload should be available soon.

Section 3

Stations

Selecting stations

Stations Controls

Networks

Year from 1980 to 2013:

Network Type:
All nets

Network Code:
All Networks
* = temporary network; + = restricted access

Stations

by Code by Region by Events

Filter stations by station code:
All Stations

Streams

by Code by Sampling

Choose the desired set of channels:
Use SHIFT and CTRL to extend the set.

HH
BH
LH
HN

Reset Search

- The start/end year is used to filter the selection as much as possible. The filter **is applied at all levels**.
- Dropdown lists are updated with every change of the other fields. ⇒ No inconsistencies!
- If possible, selected values are remembered after refreshing lists.
- Stream types are sorted by importance for the selection.
- **Multiple selection of stations** is possible using the **Append** button.

Selecting stations

Stations Controls [?]

Networks

Year from 1980 to 2013: [Slider]

Network Type: [All nets]

Network Code: [All Networks]
* = temporary network; + = restricted access

Stations

[by Code] [by Region] [by Events]

Filter stations by region:

N [90]

W [-180] [180] E

[-90] S [Clear]

Streams

[by Code] [by Sampling]

Choose the desired set of channels:
Use SHIFT and CTRL to extend the set.

HH
BH
LH
HN

[Reset] [Search]

- Negative values means South/West.
- Longitude selection over 180° is possible.
- Coherent selection in map.
- Download list of stations/streams.
- Upload of list of stations.

Circular regions (distance from lat/lon) is planned for future versions.

Selecting stations

Stations Controls

7

Networks

Year from 1980 to 2013:

Network Type:
All nets

Network Code:
All Networks

* = temporary network; + = restricted access

Stations

by Code | by Region | by Events

Filter stations by:

Event Distance (0 to 180) degrees

Event Azimuth (0 to 360) degrees

Streams

by Code | by Sampling

Choose the desired set of channels:
Use SHIFT and CTRL to extend the set.

HH
BH
LH
HN

Reset Search

- Stations to a certain distance from an event.

Selecting stations

Stations Controls [?]

Networks

Year from 1880 to 2013:

Network Type:
All nets

Network Code:
All Networks
* = temporary network; + = restricted access

Stations

by Code by Region by Events

Filter stations by station code:
All Stations

Streams

by Code by Sampling

Choose the desired set of channels:
Use SHIFT and CTRL to extend the set.

Sensor Type:
Any

Target Sampling rate: 20 sps

Reset Search

- Selection by **sensor type**
 - Sensor types can be added easily.
 - Combination of sensor types also can be easily added.
- and **sampling rate**.
 - Streams with the desired sampling rate are returned.
 - If this is not found, the ones with closest sampling rate are returned.

Working with the list

Event and Station Map

Use left SHIFT + drag mouse to select regions.

Legend Help

Event and Station List

Request: Freeze Delete Stations Delete Events

Events (2 events)

<input type="checkbox"/>	Origin Time	Mag.	Lat.	Long.	Depth	Region
<input checked="" type="checkbox"/>	2013-10-16T10:31:00	6.8	-6.50	154.90	48.0	Solomon Islands
<input checked="" type="checkbox"/>	2013-10-15T00:12:35	7.1	9.85	124.08	24.0	Mindanao, Philippines

Stations (5 stations)

<input type="checkbox"/>	Network	Station	Lat.	Long.	O/R	Streams
<input checked="" type="checkbox"/>	GE	APE	37.07	25.53		.BHE, .BHN, .BHZ
<input checked="" type="checkbox"/>	GE	BKNI	0.33	101.04		.BHE, .BHN, .BHZ
<input checked="" type="checkbox"/>	GE	BOAB	12.45	-85.67		.BHE, .BHN, .BHZ
<input checked="" type="checkbox"/>	GE	CSS	34.96	33.33		.BHE, .BHN, .BHZ
<input checked="" type="checkbox"/>	GE	DAMY	14.57	44.39		.BHE, .BHN, .BHZ

Filters

- Compile the events and stations/streams to calculate the time windows.
- Allows to further filter the selection with the checkboxes and the **Freeze** button.
- It can be sorted by many columns for easy manipulation of the list.

Working with the list

Event and Station List ?

Request: Freeze Delete Stations Delete Events

Events (-)
No Events loaded

Stations (75 stations)

Network	Station	Lat.	Long.	O/R	Streams	
Location Code <input checked="" type="checkbox"/> -- <input checked="" type="checkbox"/> 00 <input checked="" type="checkbox"/> 10	Sampling Code <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> L	Instrument Code <input checked="" type="checkbox"/> H	Orientation Code <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> E <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/> Z			<input type="button" value="Close"/> <input type="button" value="Filter"/>
<input checked="" type="checkbox"/>	GE	APE	37.07	25.53	.BHE,.BHN,.BHZ .LHE,.LHN,.LHZ	
<input checked="" type="checkbox"/>	GE	BKB	-1.11	116.90	.BHE,.BHN,.BHZ .LHE,.LHN,.LHZ	
<input checked="" type="checkbox"/>	GE	BKNI	0.33	101.04	.BHE,.BHN,.BHZ .LHE,.LHN,.LHZ	
<input checked="" type="checkbox"/>	GE	BNDI	-4.52	129.90	.BHE,.BHN,.BHZ .LHE,.LHN,.LHZ RHF RHN RHZ	

- The **Filter** button gives more fine-grain options to filter the stations list.
- Remember to click on **Filter** again after modifying the options.

Section 4

Submit Request

Time window definition

Make Request ?

Time Window selection:

Relative Mode Absolute Mode

Use time windows relative to events, by phase and onset time.

Start (minutes before)

-

End (minutes after)

+

Request Information:

Request type:

Waveform (Mini-SEED)
 Waveform (Full SEED)
 Metadata (Dataless SEED)
 Metadata (Inventory XML)

Use compression?
 Yes No

Your e-mail address:

Remember me?

- Define the time window by means of the arrival of a certain phase (P or S) w.r.t. the selected events.
- **At least one event must be selected in the list.**

Time window definition

Make Request ?

Time Window selection:

Relative Mode Absolute Mode

Use an absolute time window.

Start	End
<input type="text" value="2013-10-18"/>	<input type="text" value="2013-10-18"/>
<input type="text" value="00:00:00"/>	<input type="text" value="23:59:59"/>
<input type="text"/>	<input type="text"/>

Request Information:

Request type:

Waveform (Mini-SEED)
 Waveform (Full SEED)
 Metadata (Dataless SEED)
 Metadata (Inventory XML)

Use compression?
 Yes No

Your e-mail address:

Remember me?

- Define the time window with absolute time.
- Usually this is the mode used when no events are selected.

Types of request

Make Request ?

Time Window selection:

Use an absolute time window.

Start	End
<input type="text" value="2013-10-18"/>	<input type="text" value="2013-10-18"/>
<input type="text" value="00:00:00"/>	<input type="text" value="23:59:59"/>

Request Information:

Request type:

Waveform (Mini-SEED)
 Waveform (Full SEED)
 Metadata (Dataless SEED)
 Metadata (Inventory XML)

Use compression?
 Yes No

Your e-mail address:

Remember me?

- Waveforms
 - Mini-SEED
 - Full-SEED
- Metadata
 - Dataless SEED
 - Inventory XML

Review a request

Review of Package 1382098837032			
Network	Station	Time Windows	Stream Selection
<input checked="" type="checkbox"/>	APE	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid gray; padding: 2px;"> <input checked="" type="checkbox"/> BHE <input type="checkbox"/> LH </div> <div> <input type="checkbox"/> All <input type="checkbox"/> None <input type="checkbox"/> Vertical <input type="checkbox"/> All <input type="checkbox"/> None <input type="checkbox"/> Horizontal </div> </div> <input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	BKB	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	BKNI	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	BNDI	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	BOAB	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	CISI	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	CSS	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ <input type="checkbox"/> LHE <input type="checkbox"/> LHN <input type="checkbox"/> LHZ
<input checked="" type="checkbox"/>	DaC	<input checked="" type="checkbox"/> 2013-10-18T00:00:00.0000Z - 2013-10-18T23:59:59.0000Z	<input type="checkbox"/> BHE <input type="checkbox"/> BHN <input checked="" type="checkbox"/> BHZ

Section 5

Request status/Download data

Request status

The screenshot shows a web interface for managing requests. At the top, there's a 'Recent Requests' header. Below it, there are two buttons: 'Clear list' and 'Delete requests' (with a checked checkbox). A message states: 'Package 1382098837032: 1 request (GFZ), click to open status popup [+]'.

The main content area is a popup window titled 'Package 1382098837032' with a close button (X). It contains several action buttons: 'Reroute', 'Retry', 'Resend', 'Delete', and 'Refresh'.

Below the buttons, the text reads: 'GEOFON Data center'. The main details are as follows:

- Request ID:** 113484908, **Type:** INVENTORY, **Encrypted:** No, **Args:** instruments=true compression=bzip2
- Description:** Package 1382098837032
- Status:** READY, **Size:** 17965, **Info:**

Under the 'Info' section, there is a link for 'Download Volume'. Below that, it says: 'Volume ID: inventory, Status: OK, Encrypted: No, Size: 17965, Info: [+]
[+] 480 lines in this volume'.

Status of an individual request.

Request status

Recent Requests

Delete requests

Package 1382098837032: 1 request (GFZ), click to open status popup **[+]**

Manage Requests

Your email address:

Remember me?

GEOFON Data center

Request ID: 113484908, **Type:** INVENTORY, **Encrypted:** No, **Args:** instruments=true compression=bzip2
Description: Package 1382098837032
Status: PROCESSING, **Size:** 0, **Info:**

Volume ID: inventory, **Status:** PROCESSING, **Encrypted:** No, **Size:** 0, **Info:**
[+] 183 lines in this volume

Volume ID: UNSET, **Status:** UNSET, **Encrypted:** No, **Size:** 0, **Info:**
[+] 297 lines in this volume

Status of available requests for my userID in all datacenters.

Request status

Recent Requests

Delete requests

Package 1382098837032: 1 request (GFZ), click to open status popup **[+]**

Manage Requests

Your email address:

Remember me?

GEOFON Data center

Request ID: 113484908, **Type:** INVENTORY, **Encrypted:** No, **Args:** instruments=true compression=bzip2
Description: Package 1382098837032
Status: READY, **Size:** 17965, **Info:**

[Download Volume](#)
Volume ID: inventory, **Status:** OK, **Encrypted:** No, **Size:** 17965, **Info:**
[+] 480 lines in this volume

Status of available requests for my userID in all datacenters.

Operations on a request

- Reroute:** tries to send all lines with NODATA and RETRY status to alternative data centers if possible. If there are no (more) alternative routes, you'll see **No more routes found** on the console.
- Retry:** same as Reroute, except that lines with RETRY status are sent to the same datacentre again.
- Resend:** send the same request group again. This might be helpful if there are transient errors. Note that the re-sent request does not include lines which could not be routed originally because no routes were found.
- Delete:** deletes the request group in all datacentres involved.
- Refresh:** contacts the server(s) to update the processing status of the request group.

Thanks a lot for your attention!