FDSNWS

Federation of Digital Seismic Network Web Service

What is FDSNWS?

https://www.fdsn.org/webservices/

The version 1.1 specification defines RESTful web service interfaces for accessing common FDSN data types. This specification serves as a baseline level of compatibility allowing data request tools to work with any FDSN data center implementing these services. Three service interfaces are specified:
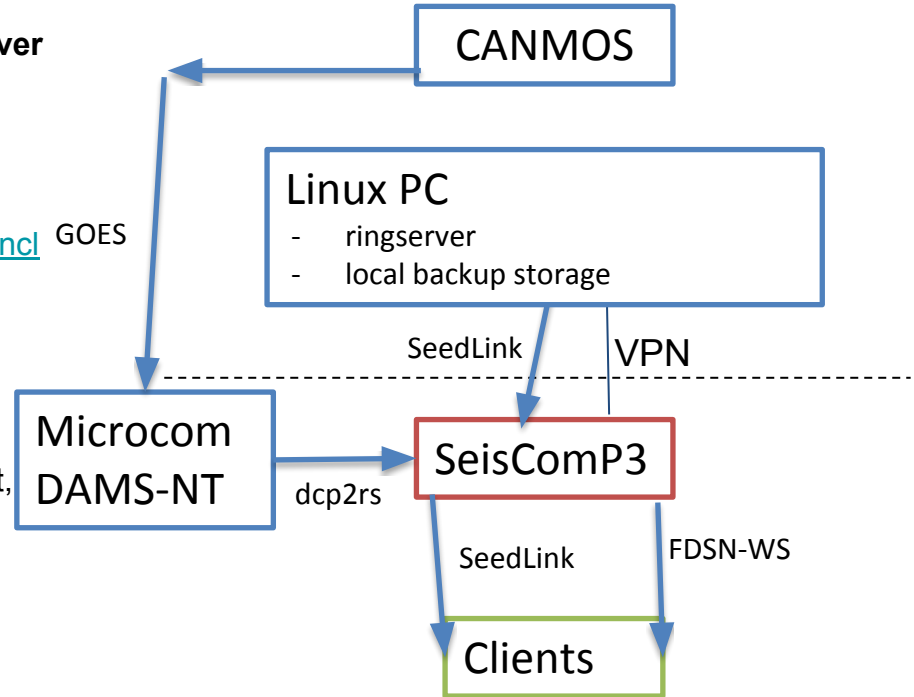
fdsnws-station – For access to station metadata in FDSN StationXML format

fdsnws-dataselect – For access to time series data in miniSEED format

fdsnws-event – For access to event parameters in QuakeML format

What is happening in Canada?

- Geomagnetic observatories will have a **IRIS ringserver (open source)**
- **Gempa's SeisComP3** acquiring data via **SeedLink** (slink2caps)
  - **SNLC** structure defined in collaboration with USGS Geomagnetic Network
  - https://github.com/INTERMAGNET/miniseed-sncl/blob/master/SNCL.md
    - Network = NT (USGS), C2 (Canada)
    - Station = IAGA code
    - Location:
      - 1st: data type (R = raw, D = definitive)
      - 2nd: source by priority (0 = internet, = GOES)
    - Channel:
      - 1st: sampling rate
      - 2nd: F = magnetometer
      - 3rd: orientation (X, Y, Z, F, H, D)
- Current stage:
  - Proof-of-concept completed with test observatory

CANMOS

Linux PC
- ringserver
- local backup storage

GOES

SeedLink

VPN

Microcom DAMS-NT

dcp2rs

SeisComP3

SeedLink

FDSN-WS

Clients

What is SeisComP3?

https://www.gempa.de/products/seiscomp3/

SeisComP is a seismological software for data acquisition, processing, distribution and interactive analysis that has been developed by the GEOFON Program at Helmholtz Centre Potsdam, GFZ German Research Centre for Geosciences and gempa GmbH.

Notable products:

- FDSNWS
- CAPS

What is SeisComP3 CAPS?

https://www.gempa.de/products/caps/

"The Common Acquisition Protocol Server (CAPS) was developed to fulfill the needs to transfer multi-sensor data from the station to the data center. As nowadays more and more stations with co-located sensors like broadband seismometer, accelerometer, CGPS, temperature, video cameras, etc. are build up, a acquisition protocol is required, which can efficiently handle low- and high-sampled data through one unified protocol."

However, the user doesn't need to know the background infrastructure like acquisition protocol and storage format via any web service

Links

Example FDSNWS

IRIS: https://service.iris.edu/fdsnws/

　　　https://service.iris.edu/fdsnws/dataselect/1/

Example tools:

Obspy: https://docs.obspy.org/packages/obspy.clients.fdsn.html

Things to know

- CAPS doesn't permit correction of data
  - Canada stores x days of data in the CAPS archive but stores long term archive in miniSeed files outside of SeisComP3 which then permits correction.
- Canada has not tested IAGA-2002 to CAPS since transmitting data using real-time SeedLink protocol
  - Custom module required
- **Proposal is for a internal proof-of-concept of using existing INTERMAGNET infrastructure as things still need to be discussed with NRCan management but I did get an initial approval.**