

What's GNAF?

Anational dataset of 13m validated addresses with coordinates



It underpins decision making & economic activity...

...at the national level

Icclosal Icvel



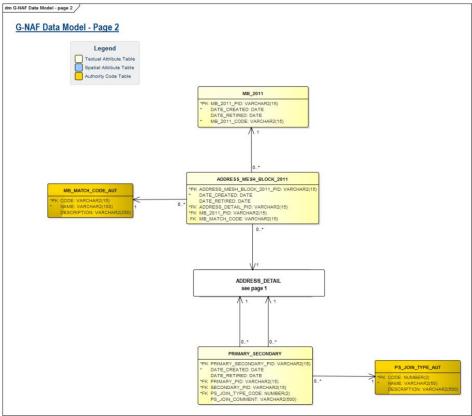
GNAF is now...

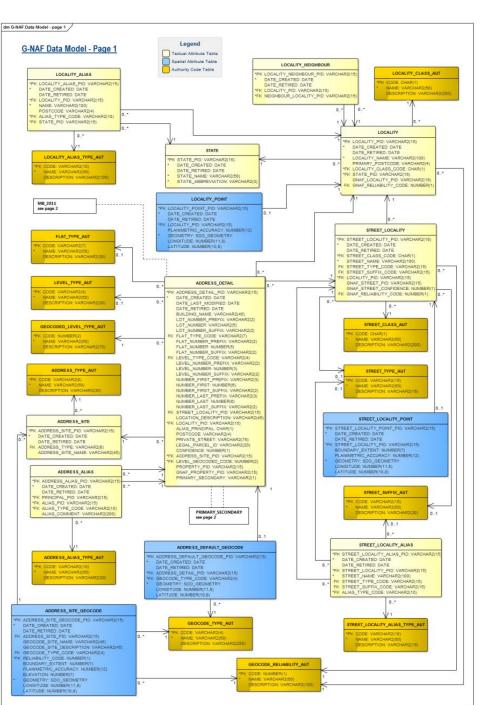


Time for a deep dive!?

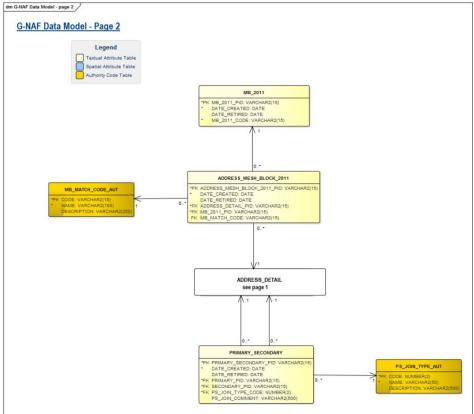
dm G-NAF Data Model - page 1 Legend G-NAF Data Model - Page 1 Textual Attribute Table Spatial Attribute Table Authority Code Table LOCALITY CLASS AUT *PK LOCALITY_ALIAS_PID: VARCHAR2(15 * DATE_CREATED: DATE DATE RETIRED DATE K LOCALITY_PID: VARCHAR2(15) K NEIGHBOUR_LOCALITY_PID: VARCHA DATE RETIRED DATE (LOCALITY_PID: VARCHAR2(15) NAME: VARCHAR2(100) POSTCODE: VARCHAR2(4) *FK ALIAS_TYPE_CODE: VARCHAR2(10) *FK STATE_PID: VARCHAR2(15) DATE CREATED DATE DATE RETIRED: DATE LOCALITY ALIAS TYPE AUT LOCALITY_NAME: VARCHAR2(100) PRIMARY_POSTCODE: VARCHAR2(4) PK STATE_PID: VARCHAR2(15) DATE_CREATED: DATE FK LOCALITY CLASS CODE CHARM DATE RETIRED DATE STATE NAME VARCHARZISON STATE ABBREVIATION: VARCHAR2 K GNAF RELIABILITY CODE: NUMBER LOCALITY POINT PID: VAR DATE RETIRED: DATE LOCALITY_PID VARCHAR2(15) PLANIMETRIC_ACCURACY NUMBER(12) GEOMETRY SDO_GEOMETRY FLAT TYPE AUT PK STREET_LOCALITY_PID: VARCHAR2(15 DATE_CREATED: DATE DATE RETIRED DATE FK STREET_CLASS_CODE CHAR(1) STREET_NAME: VARCHAR2(100) FK STREET_TYPE_CODE: VARCHAR2(15) FK STREET_SUFFIX_CODE: VARCHAR2(15) FK LOCALITY_PID: VARCHAR2(15) GNAF_STREET_PID: VARCHAR2(16) LEVEL TYPE AUT GNAF STREET CONFIDENCE: NUMBER FK GNAF RELIABILITY CODE: NUMBER(1) DATE_LAST_MODIFIED: DATE DATE_RETIRED: DATE BUILDING_NAME: VARCHAR2(45) LOT NUMBER PREFIX: VARCHAR2(2) STREET CLASS AUT LOT NUMBER VARCHAR2(5) GEOCODED_LEVEL_TYPE_AUT LOT_NUMBER_SUFFIX: VARCHAR2(2) FLAT_TYPE_CODE: VARCHAR2(7) FLAT NUMBER PREFIX: VARCHAR2(2) FLAT NUMBER NUMBER(5) FLAT_NUMBER_SUFFIX: VARCHAR2(2) LEVEL_TYPE_CODE: VARCHAR2(4) LEVEL NUMBER PREFIX VARCHAR2(2 LEVEL_NUMBER: NUMBER(3) LEVEL_NUMBER SUFFIX: VARCHAR2(2) NUMBER_FIRST_PREFIX: VARCHAR2(3) NUMBER_FIRST: NUMBER(6) ADDRESS TYPE AUT STREET TYPE AUT NUMBER_FIRST_SUFFIX: VARCHAR2(2) NUMBER_LAST_PREFIX: VARCHAR2(3) NUMBER_LAST: NUMBER(6) NUMBER_LAST_SUFFIX: VARCHAR2(2) STREET_LOCALITY_PID: VARCHAR2(15) LOCATION_DESCRIPTION: VARCHAR2(45) STREET LOCALITY POINT ADDRESS SITE K LOCALITY_PID: VARCHAR2(15) ALIAS PRINCIPAL CHAR(1) PK STREET_LOCALITY_POINT_PID VARCHAR2[15] DATE_CREATED_DATE DATE_RETRIBLED_DATE FR STREET_LOCALITY_PID VARCHAR2[15] BOUNDARY_EXTENT NUMBER(T) PLANMETRIC_ACCURACY_NUMBER(T2) GEOMETRY_SOC_GEOMETY PK ADDRESS SITE PID: VARCHAR2(15) DATE_CREATED DATE PRIVATE STREET: VARCHAR2(75) LEGAL PARCEL ID: VARCHAR2(20) CONFIDENCE: NUMBER(1) ADDRESS_SITE_PID: VARCHAR2(15) K ADDRESS TYPE: VARCHAR2IS ADDRESS SITE NAME: VARCHAR2/4 LEVEL GEOCODED CODE: NUMBER(2 PROPERTY PID VARCHAR2(15) LONGITUDE: NUMBER(11.8) ADDRESS ALIAS GNAF_PROPERTY_PID: VARCHAR2(15) PRIMARY_SECONDARY: VARCHAR2(1) *PK ADDRESS ALIAS PID: VARCHAR2(STREET_SUFFIX_AUT PRINCIPAL PID: VARCHAR2(15) FK ALIAS_PID: VARCHAR2(15) FK ALIAS_TYPE_CODE: VARCHAR2(10) PRIMARY SECONDARY STREET_LOCALITY_ALIAS ADDRESS_DEFAULT_GEOCODE STREET_LOCALITY_ALIAS_PID: VARCHAR2 ADDRESS ALIAS TYPE AUT DATE RETIRED: DATE DATE_RETIRED DATE PK ADDRESS_DETAL_PID: VARCHAR2(16) PK GEOCODE_TYPE_CODE VARCHAR2(4) GEOMETRY: SDO_GEOMETRY *FK STREET_LOCALITY_PID: VARCHAR2(15) * STREET_NAME: VARCHAR2(100) FK STREET_TYPE_CODE: VARCHAR2(15) FK STREET_SUFFIX_CODE: VARCHAR2(15) FK ALIAS_TYPE_CODE: VARCHAR2(10) ADDRESS SITE GEOCODE PK ADDRESS_SITE_GEOCODE_PID: VARCHAR2(18) DATE_CREATED: DATE DATE_RETIRED: DATE IX ADDRESS_SITE_PID: VARCHAR2(15) GEOCODE_TYPE_AUT STREET LOCALITY ALIAS TYPE AU GEOCODE SITE NAME VARCHAR2(46) GEOCODE SITE DESCRIPTION: VARCHAR2(46) GEOCODE TYPE_CODE VARCHAR2(4) (RELIABILITY_CODE NUMBER(1) BOUNDARY_EXTENT: NUMBER(7) PLANIMETRIC_ACCURACY: NUMBER(12) ELEVATION: NUMBER(7) GEOCODE_RELIABILITY_AUT GEOMETRY: SDO_GEOMETRY LONGITUDE: NUMBER(11.8) LATITUDE: NUMBER(10.8)

The GNAF data model





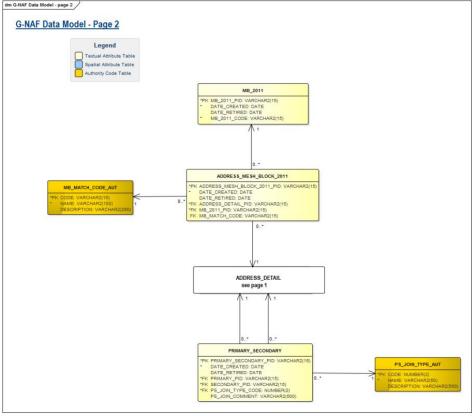
- 4.8 Gb- 144 PSV files- 31 tables- 39 foreign keys





dm G-NAF Data Model - page 1 Legend G-NAF Data Model - Page 1 Textual Attribute Table Spatial Attribute Table Authority Code Table LOCALITY CLASS AUT *PK LOCALITY_ALIAS_PID: VARCHAR2(15 * DATE_CREATED: DATE DATE RETIRED DATE K LOCALITY_PID: VARCHAR2(15) K NEIGHBOUR_LOCALITY_PID: VARCHA DATE RETIRED DATE POSTCODE: VARCHAR2(4) *FK ALIAS_TYPE_CODE: VARCHAR2(10) *FK STATE_PID: VARCHAR2(15) DATE CREATED DATE DATE RETIRED: DATE LOCALITY ALIAS TYPE AUT LOCALITY_NAME: VARCHAR2(100) PRIMARY_POSTCODE: VARCHAR2(4) PK STATE_PID: VARCHAR2(15) DATE_CREATED: DATE FK LOCALITY CLASS CODE CHARM DATE_RETIRED: DATE STATE NAME VARCHARZISON STATE ABBREVIATION: VARCHAR2 K GNAF RELIABILITY CODE: NUMBER LOCALITY POINT PID: VAR DATE RETIRED: DATE LOCALITY_PID VARCHAR2(15) PLANIMETRIC_ACCURACY NUMBER(12) GEOMETRY SDO_GEOMETRY FLAT TYPE AUT PK STREET_LOCALITY_PID: VARCHAR2(15 DATE_CREATED: DATE DATE RETIRED DATE FK STREET_CLASS_CODE CHAR(1) STREET_NAME: VARCHAR2(100) FK STREET_TYPE_CODE: VARCHAR2(15) FK STREET_SUFFIX_CODE: VARCHAR2[15] FK LOCALITY_PID: VARCHAR2(15) GNAF_STREET_PID: VARCHAR2(15) GNAF_STREET_CONFIDENCE: NUMBER[1] FK GNAF RELIABILITY_CODE: NUMBER(1) DATE_LAST_MODIFIED DATE DATE_RETIRED DATE BUILDING NAME VARCHAR2(45) LOT NUMBER PREFIX: VARCHAR2(2) STREET CLASS AUT LOT NUMBER VARCHAR2(5) GEOCODED_LEVEL_TYPE_AUT FLAT NUMBER PREFIX: VARCHAR2(2) FLAT NUMBER NUMBER(5) FLAT_NUMBER_SUFFIX: VARCHAR2(2) LEVEL_TYPE_CODE: VARCHAR2(4) LEVEL NUMBER PREFIX VARCHAR2(2 LEVEL_NUMBER: NUMBER(3) LEVEL_NUMBER SUFFIX: VARCHAR2(2) NUMBER_FIRST_PREFIX: VARCHAR2(3) NUMBER_FIRST: NUMBER(6) ADDRESS TYPE AUT STREET TYPE AUT NUMBER_FIRST_SUFFIX: VARCHAR2(2) NUMBER_LAST_PREFIX: VARCHAR2(3) NUMBER_LAST: NUMBER(6) NUMBER_LAST_SUFFIX: VARCHAR2(2) STREET_LOCALITY_PID: VARCHAR2(15) LOCATION_DESCRIPTION: VARCHAR2(45) STREET LOCALITY POINT ADDRESS SITE K LOCALITY_PID: VARCHAR2(15) ALIAS PRINCIPAL CHAR(1) PK STREET_LOCALITY_POINT_PID VARCHAR2[15] DATE_CREATED_DATE DATE_RETRIBLED_DATE FR STREET_LOCALITY_PID VARCHAR2[15] BOUNDARY_EXTENT NUMBER(T) PLANMETRIC_ACCURACY_NUMBER(T2) GEOMETRY_SOC_GEOMETY PK ADDRESS SITE PID: VARCHAR2(15 POSTCODE: VARCHAR2(4) PRIVATE_STREET: VARCHAR2(75) DATE_CREATED DATE LEGAL PARCEL ID: VARCHAR2(20) CONFIDENCE: NUMBER(1) ADDRESS_SITE_PID: VARCHAR2(15) K ADDRESS TYPE: VARCHAR2IS ADDRESS SITE NAME: VARCHAR2/4 LEVEL GEOCODED CODE: NUMBER(2 PROPERTY PID VARCHAR2(15) ADDRESS ALIAS GNAF_PROPERTY_PID: VARCHAR2(15) PRIMARY_SECONDARY: VARCHAR2(1) *PK ADDRESS ALIAS PID: VARCHAR2 STREET_SUFFIX_AUT PRINCIPAL PID: VARCHAR2(15) FK ALIAS_PID: VARCHAR2(15) FK ALIAS_TYPE_CODE: VARCHAR2(10) PRIMARY SECONDARY STREET_LOCALITY_ALIAS ADDRESS_DEFAULT_GEOCODE STREET_LOCALITY_ALIAS_PID: VARCHAR2 ADDRESS ALIAS TYPE AUT DATE RETIRED: DATE DATE_RETIRED DATE PK ADDRESS_DETAIL_PID: VARCHAR2(16) PK GEOCODE_TYPE_CODE: VARCHAR2(4) GEOMETRY: SDO_GEOMETRY *FK STREET_LOCALITY_PID: VARCHAR2(15) * STREET_NAME: VARCHAR2(100) FK STREET_TYPE_CODE: VARCHAR2(15) FK STREET_SUFFIX_CODE: VARCHAR2(15) FK ALIAS_TYPE_CODE: VARCHAR2(10) ADDRESS SITE GEOCODE PK ADDRESS_SITE_GEOCODE_PID: VARCHAR2(18) DATE_CREATED: DATE DATE_RETIRED: DATE IX ADDRESS_SITE_PID: VARCHAR2(15) GEOCODE_TYPE_AUT STREET LOCALITY ALIAS TYPE AU GEOCODE SITE NAME VARCHAR2(46) GEOCODE SITE DESCRIPTION: VARCHAR2(46) GEOCODE TYPE_CODE VARCHAR2(4) (RELIABILITY_CODE NUMBER(1) BOUNDARY_EXTENT NUMBER(7) PLANIMETRIC_ACCURACY: NUMBER(12) ELEVATION: NUMBER(7) GEOCODE_RELIABILITY_AUT GEOMETRY: SDO GEOMETRY

Let's Simplify things...



- address_alias_lookup
- address_aliases
- address_principals
- address_secondary_lookup
- localities
- locality_aliases
- locality_neighbour_lookup
- street_aliases
- streets



Let's get started

Step 1: download the data





http://data.gov.au/dataset/geocoded-national-address-file-g-naf

http://data.gov.au/dataset/psma-administrative-boundaries

Step 2: install the pre-reqs





Step 3: run the code*



https://github.com/minus34/gnaf-loader

* or download the Postgres dump files

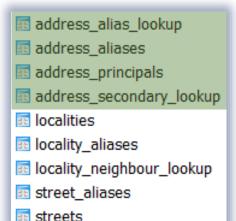
Step 4: learn GNAF...

ADDRESSES STRETS LOCALITIES

- 🔤 address_alias_lookup
- address aliases
- address_principals
- address_secondary_lookup
- localities
- locality_aliases
- locality_neighbour_lookup
- street_aliases
- streets

ADDRESSES (13m)

- Keyed by gnaf_pid
- Represent an address validated by State Govt, Australia Post and/or the AEC
- Must link to a street and locality
 (via locality_pid & street_locality_pid)
- Can be a principal address (20 FRED ST) or an alias/duplicate (20-30 FRED ST)
- Can be a primary address (10 JOHN ST) or secondary address (Unit 2, 10 JOHN ST)
- 95% have coordinates inside the property
- Link to the ABS Census (mb_2011_code) and property information (legal_parcel_id)



STREETS (700k)

address_alias_lookup
address_aliases
address_principals
address_secondary_lookup
localities
locality_aliases
locality_neighbour_lookup
street_aliases
streets

- Keyed by street_locality_pid
- Represent a unique street name in a locality
- i.e. Pacific Hwy, Chatswood != Pacific Hwy, Artarmon
- Must link to a locality (via locality_pid)
- Can have an alias name (Main St = Hume Hwy)

LOCALITIES (16k)

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address_alias_lookup
address_aliases
address_principals
address_secondary_lookup
localities
locality_aliases
locality_neighbour_lookup
street_aliases
streets
```

- Keyed by locality_pid
- Represent suburbs, towns, localities and topographic features
- Can have an alias name
 (CITY, ACT = CANBERRA, ACT)
- Are surrounded by neighbouring localities

Thanks, enjoy!

BTW...

