Short Guide for dump1090-dbTool V0.9.1

20190823/BM

Purpose

The dump1090-dbTool (tool) derives from a number of input files databases and other output which can be used to update the FA and extended versions of the dump1090 Web Interface.

Some geo location files are created within a range of a given location to limit the size and load time of such data.

Most input files are from publicly available sources and updated regularly at the time of writing.
Flight information derived from a free route data file – however the quality is +- …
For airways no suitable source with current content could be found (other than professional sources $$$)
So this data is derived from XPlane11 flight simulator ($) which is kind of recent but quality is unknown.

➔ **Any of this data shall never be used for actual flying or other real-world use in aviation !!!!**

Get it

Available on Github: https://github.com/bm98/dump1090-dbTool

For the executable binary check the latest release: https://github.com/bm98/dump-dbTool/releases

Download the Zip from the 'Assets' and extract them into a folder leaving the subdirs as in the Zip file

Note: for the example data the input files provided are zipped and must be extracted before use (inputFiles.zip)

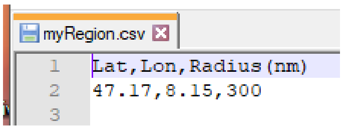
Setup

The tool expects data input at an absolute disk location and sends its output into the same location

The directory structure is:

```
<DRIVE>:\path
        myRegion.csv
        \input
                <input files>
                \db
        \output
                \build-<DATETIME>
                        <output files>
                        \db
                                <output files>
                                \aircraft_types
                                        <output files>
```

The file `myRegion.csv` contains Lat, Lon, Radius of this region. Change it with notepad to your receiver location.



```
Lat,Lon,Radius(nm)
47.17,8.15,300
```

Gather and place input files into the input folder before running the tool.

Run

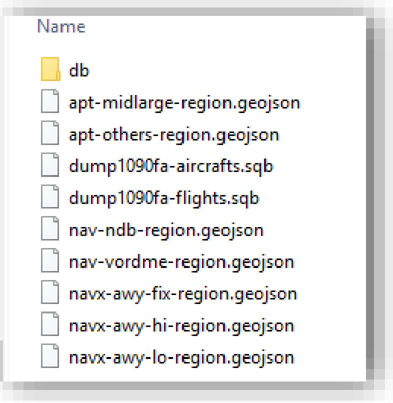
Once input is setup run the tool from command line as:

```
$ dump1090-dbTool [-fa] path
```

The optional `–fa` option will read and create a regular dump1090fa aircraft database (lots of files) in the output\db folder

And path is the location where input and output folders are located.

E.g. `$ dump1090-dbTool -fa D:\fa-data`



Name

db
apt-midlarge-region.geojson
apt-others-region.geojson
dump1090fa-aircrafts.sqb
dump1090fa-flights.sqb
nav-ndb-region.geojson
nav-vordme-region.geojson
navx-awy-fix-region.geojson
navx-awy-hi-region.geojson
navx-awy-lo-region.geojson

The tool will report progress – it takes some time to process all data – and you may find the output in the corresponding folder build_<DATETIME> such as `build-20190817T142824`

So each run creates a complete new set of data.

Inputs

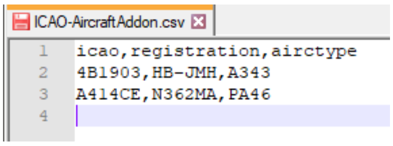
Inputs folder - may contain any or all of the following files:

- db\XY.json	(FA original input database format – many files in the db folder)
- BaseStation.sqb	(https://data.flightairmap.com/)
- ICAO-AircraftAddon.csv	(Editable data file to add new aircrafts not registered in BaseStation)
- ICAO-AircraftTypes.json	(https://www.icao.int/publications/DOC8643) // captured http response containing all data...
- airports.csv	(http://ourairports.com/data/)
- navaids.csv	(http://ourairports.com/data/)
- routes.tsv	(https://data.flightairmap.com/)
- earth_awy.dat	(XPlane V11 default_data folder)
- earth_fix.dat	(XPlane V11 default_data folder)
- earth_nav.dat	(XPlane V11 default_data folder)

Add aircraft data manually

To add aircraft data you may edit (with Notepad only) the file `ICAO-AircraftAddon.csv`

The tool expects a comma separated list `icao, registration, airctype`



```
icao,registration,airctype
4B1903,HB-JMH,A343
A414CE,N362MA,PA46
```

Aircraft Type Designation

Note: The aircraft types file `ICAO-AircraftTypes.json` is derived from the ICAO site where free lookup for all types is provided (one can capture the http response and get the complete json db as it is sent directly to your browser…)

Included is a version from Jul-2019 (the update about once a month)

Airway and Fixes data

Geo locations for airways and fixes are collected from XPlane 11 flight simulator.

The XPlane 11 simulator data set is derived from an installation and is NOT included here.

→ XPlane 11 is paid$ software so data is not just available – but you may own a copy already and derive the earth_xy.dat files from there if needed

Outputs

The Output folder may contain any or all of the following files.
Depending on available input - output is created accordingly

```
- build-<BUILD-DATETIME>
 // regular FA website databases (backup the original !!!)
 // goes into folder html of the FA web repository
   \db\Xn.json
   \db\README
   \db\aircraft_types\icao_aircraft_types.json
   \db\aircraft_types\README

 // goes into folder sqldb dump1090fa FA repository for my additions
   \dump1090fa-aircrafts.sqb
   \dump1090fa-flights.sqb

 // goes into folder layers of the FA web repository for my additions
   \nav-ndb-region.geojson
   \nav-vordme-region.geojson
   \apt-midlarge-region.geojson
   \apt-others-region.geojson
   \navx-awy-fix-region.geojson
   \navx-awy-lo-region.geojson
   \navx-awy-hi-region.geojson
```

Input Rules

For modeS data the program first reads the FA original files, then the BaseStation.sqb and then the user provided file ‘`ICAO-AircraftAddon.csv`’.

Input data for the same modeS (icao) ID from the later imported data overwrites existing data!
Note: You may fix errors in FA or BaseStation data with a manual override providing them in the Addon file.

Output Rules

To create FA original material use the –fa command line option

- To create the fa compatible aircraft db
  - BaseStation.sqb and/or FA db folder (with –fa option) and/or ICAO-AircraftAddon.csv are required
- To create the fa compatible aircraft_types db
  - ICAO-AircraftTypes.json is required

Material used for the instrument panel SkyView extension:

- To create the my extended sqLite aircraft db
  - BaseStation.sqb and/or FA db folder (with –fa option) and/or ICAO-AircraftAddon.csv are required
- To create the my extended sqLite flights db
  - airports.csv and routes.tsv are required
- To create the my extended Airport, Vor/DME/NDB geolocation files
  - airports.csv and routes.tsv and navaids.csv are required
- To create the my extended Airways and Fixes geolocation files
  - earth_awy.dat and earth_fix.dat and earth_nav.dat are required