

NeSS Data Exchange

Hierarchy Navigation guide

Version 1.0

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1. Introduction

The Neighbourhood Statistics database contains entries for thousands of geographic areas, arranged into hierarchies.

You can obtain a list of hierarchies using the `getHierarchies()` operation.

- 2 NeSS Geography Hierarchy (GPH)
- 3 1998 Administrative Hierarchy
- 4 2003 Administrative Hierarchy
- 7 2003 Electoral Hierarchy
- 8 2003 Health Hierarchy
- 9 2003 Parish Hierarchy
- 10 2003 Education Hierarchy
- 11 2004 Administrative Hierarchy
- 12 New Deal for Communities (Best fit)
- 14 Provisional Parliamentary Constituencies 2007
- 15 2006 Health Hierarchy
- 16 2005 Administrative Hierarchy
- 17 2006 Administrative Hierarchy

The best way to understand the structure of these hierarchies is to view the Hierarchy Diagrams document. This illustrates how many irregularities exist within each hierarchy which complicate navigation. For example, in the Administrative hierarchies a local authority (LA) can be the child of a county or a region.

Also provided are:

- An Excel-based hierarchy builder tool
- Details of all the operations in the Technical Implementation Guide

2. Finding Your Root Area

Whether you are gathering the hierarchy information as a one-off, or doing 'live' navigation, you need to get the `AreaId` of your 'root'.

The nature of your root area depends on your application. If it is for a specific LA you might want that as the root, in order to compare smaller areas within it. Alternatively, you might want a higher level, perhaps a county or region, so that your LA can be compared against others.

2.1 Using the Hierarchy Root

`getHierarchyDetail(HierarchyId)` will give you the top node of the whole hierarchy, usually England and Wales, England, or UK. If you want to start lower, you can repeatedly call `GetChildren` from this area, perhaps using the Excel Operations Tester or the Ajax equivalent.

2.2 Using Search Operations

2.2.1 Using SearchAreaByNameHierarchy

Quite often you will know the name of the area and which hierarchy you want to navigate. So to get Hampshire in 2005 Admin, [SearchAreaByNameHierarchy\("Hampshire", 16\)](#) will give you the area id you need.

SearchAreaByNameHierarchy will often give multiple results, especially as the function gives you pattern matches. For example [SearchAreaByNameHierarchy\("Fareham", 2\)](#) would give you Fareham, Fareham 001, Fareham 001A etc.

2.2.2 Using SearchAreaByNameLevelType

An alternative is to use SearchAreaByNameLevelType. You will need the list of level types in the Implementation Guide, or use the `getLevelTypes()` operation.

[SearchAreaByNameLevelType\("Fareham", 13\)](#) is asking for all the LAs called Fareham (or matching Fareham* pattern) regardless of hierarchy. You will then have to select the correct Fareham belonging to the hierarchy you wish to use.

3. Navigating

3.1 Using getAreaChildren

This is the easiest way for a 'hunter' type application, when the user clicks on an 'expand' icon next to an area, the call is simply [getAreaChildren\(selected AreaId\)](#) to return the immediate descendants so that the user can drill down.

For a 'gatherer' to get a chunk of a hierarchy below a start area, a recursive call can be used, VBA example (from the builder spreadsheet) below. Note that when the lowest level is reached, the list of child areas will be empty. If the lowest level is known in advance, these calls can be avoided.

```
Function AreaChildRecurse(startareaid)
    Dim aList
    Dim acResponse
    level = level + 1
    WriteDetailLine (areaid)
    acResponse = GetAreaChildren(areaid)
    aList = GetElements(acResponse, "AreaId")
    For j = 0 To UBound(aList)
        If level < levelDepth Or levelDepth = 0 Then
            boundVal = GetValue(aList(j), "AreaId")
            AreaChildRecurse (boundVal)
        End If
    Next
    level = level - 1
End Function
```

3.2 Using getAreaAtLevel

This is useful if you want to compare areas which are not the direct children of the start area. For example, you might want to compare all LAs in a region, regardless of whether or not they sit within counties (e.g. Non-metropolitan districts).

For example `getAreaAtLevel(276700,13)` gives you all the LAs in the North West region.

4. Hierarchy Builder Tool

B	C	D	E	F
Username	Password	AreaID	Levels to traverse	Start Level
me@mycompany.co.uk	mypassword	276693	2	3
	UK	276699		
	GB	276698		
	EW	276697		
Country	England	276693		
Region	North East	276700		
County	Northumberland	276730		
LA	Wansbeck	277067		
MSOA	Wansbeck 003	282910		
LSOA	Wansbeck 003B	311908		

This is a simple Excel spreadsheet that lets you create an offline hierarchy tree. On the Root tab (shown above), if the AreaID is a large area like a region or country, the job will take a long time unless the number of available levels is restricted. Starting with England and going down 2 levels gives 160 results. With a smaller area like an LA you can set the 'levels to traverse' value to 0 (which means go to the bottom of the tree), without giving rise to an excessively long request.

The Start Level is there to allow chunks to be merged by making sure that level numbers are consistent between runs.

To run the job, Click on the ONS Menu and select Get Child Areas. Switch to the Children tab to see the results appear.

A	B	C	D	E	F	G
Level	AreaID	Name	HierarchyID	LevelTypeID	Envelope	Extcode
3	276693	England	2	10	82299:5003:655605:657534	64
4	276700	North East	2	11	356180:506231:478446:657534	A
5	276816	Darlington	2	13	418865:506326:438393:524971	00EH
5	276814	Redcar and Cleveland	2	13	451705:510800:478446:528393	00EE
5	276815	Stockton-on-Tees	2	13	435455:507838:454419:528010	00EF

One way to use the results is to save the Children tab as a CSV file for later manipulation. If you can do Excel VBA, then you could add a routine to save the results in a file in the format of your choice (XML, DBF, MS-Access etc.).

To access the code in the spreadsheet, click on the Tools Menu, select Macro, then Visual Basic Editor.