DATA.CENSUS.GOV
DEEP LINKING GUIDE

Census Enterprise Dissemination Services and Consumer Innovation (CEDSCI)

Version 2.0

12/14/2020
# Document Revision History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Revision Description</th>
<th>Section</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>01/29/2020</td>
<td>Initial Public Release</td>
<td>All</td>
<td>CED DRUA</td>
</tr>
<tr>
<td>2.0</td>
<td>12/14/2020</td>
<td>URL Formatting Update</td>
<td>1,2,3,4,5,6, Appendix A</td>
<td>CED DRUA</td>
</tr>
</tbody>
</table>
Table of Contents
1 Purpose ........................................................................................................... 1
2 Understanding the data.census.gov URL format ........................................... 2
   2.1 Global URL Parameters ........................................................................... 2
       2.1.1 Geo IDs and Collections Explained ................................................. 4
   2.2 Specific URL Parameters ....................................................................... 6
       2.2.1 Map Specific Parameters ................................................................. 7
       2.2.2 Table Specific Parameters ............................................................... 8
       2.2.3 Profile Page Specific Parameters ...................................................... 9
   2.3 Special Characters ............................................................................... 9
3 Deep Link Use Cases .................................................................................... 11
   3.1 Use Case – Population and People in Maryland – All Results and Table Results...... 11
       3.1.1 Linking to All Search Results ......................................................... 11
       3.1.2 Linking directly to Table Results ..................................................... 12
   3.2 Use Case - Population Total in Maryland – All Results and Map Results ........... 14
       3.2.1 Linking to All Search Results ......................................................... 14
       3.2.2 Linking Directly to Map Results ...................................................... 15
       3.2.3 Linking to Customized Map Results .................................................. 18
   3.3 Use Case – Linking Directly to a Table .................................................... 20
       3.3.1 Building a Direct Table Link ............................................................. 20
       3.3.2 Updating a Direct Table Link ......................................................... 20
   3.4 Use Case – Profile Page Deep Linking .................................................... 22
       3.4.1 Creating Profile Page Deep Links ..................................................... 22
       3.4.2 Creating Deep Links to Sections on a Profile Page ......................... 23
4 Examples of Linking to Search Results in Basic Search ........................................ 24
5 Examples of Linking to Table results from Basic Search ......................................... 25
6 Examples of Linking to Map results from Basic Search ......................................... 26
7 Examples of Linking to a Geography Profile .................................................... 27
       Building Deep Links with Advanced Search ........................................... 28

Table of Figures
Figure 1 – Geographic Summary Levels .................................................................. 4
Figure 2 – Obtaining Geographic ID from Advanced Search .................................. 5

Table of Tables
Table 1 Global URL Parameters ........................................................................... 2
Table 2 - Map Specific Parameters ........................................................................ 7
Table 3 – Table Specific Parameters ..................................................................... 8
Table 4 – Profile Page Specific Parameters ........................................................... 9
Table 5 – URL Encoded Values for Special Characters ........................................... 9
Table 6 – Special Characters with Functions in URL ............................................. 10
1 Purpose

The data.census.gov platform utilizes Uniform Resource Locators (URLs) to store information about the data being displayed. As a user creates searches, views results, and customizes tables or maps, these interactions are captured in the URL. As a result, users may save these URLs and use them to easily share information.

The purpose of this document is to demonstrate how a deep link URL may be built using the site parameters. This document should enable the construction of a deep link by any user. Using this guide, users will gain an understanding of how data.census.gov URLs are constructed, the meaning of each parameter, and of how to combine any number of these discrete parameters available to generate valid URLs.
2  Understanding the data.census.gov URL format

The URL for information on data.census.gov always begins with the landing page address (https://data.census.gov/cedsci/). The parameters added after this address are based on the search criteria entered by a user, or the changes made by a user to what data is displayed (for example selecting specific years for a table). This allows an end user to reuse that updated URL for deep linking directly to a customized table or map by making changes to the URL for the results returned from an initial query.

These parameters are classified into two groups:

1. Global parameters, which are used for all URL types regardless of page or component
2. Specific parameters, which are used by only a few pages or components, for example parameters for Maps and Table results pages

The available values for a given parameter can vary greatly depending on the circumstances in which it is selected. For example, if the survey (d=) parameter references the Decennial Census, certain values for years (y=) will be unavailable, since Decennial tables only cover certain years. The data.census.gov advanced search functionality provides a powerful tool for exploring URL parameters, available values, and the interactions between different parameter combinations.

Note: To effectively deep link in data.census.gov, certain special characters must be appropriately encoded when used in the URL. Section 2.3 provides information on how to correctly encode special characters.

2.1  Global URL Parameters

Global URL Parameters can be used in any section or page in data.census.gov. (i.e. Tables, Maps). Table 1 explains the parameters of a data.census.gov URL for both searches and results.

Note that when multiple parameters are included in a URL, only the first parameter utilizes a question mark as a separator. All subsequent parameters are separated by an ampersand (&).

In the example below, the geography selection is expressed by ?g= with a question mark separating it from the first parameter. By contrast, the topic is expressed by &t=, with an ampersand separating it from the second parameter.

https://data.census.gov/cedsci/all?g=0400000US24&t=Populations%20and%20People

Table 1 - Global URL Parameters
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/all?</td>
<td>Default parameter for search results. When inserted, all result types (maps, tables, and pages) are displayed</td>
<td><a href="https://data.census.gov/cedsci/all">https://data.census.gov/cedsci/all</a>?</td>
</tr>
<tr>
<td>/map?</td>
<td>When inserted following the base URL, displays map results instead of all results</td>
<td><a href="https://data.census.gov/cedsci/map">https://data.census.gov/cedsci/map</a>?</td>
</tr>
<tr>
<td>/table?</td>
<td>When inserted following the base URL, displays table results instead of all results</td>
<td><a href="https://data.census.gov/cedsci/table">https://data.census.gov/cedsci/table</a>?</td>
</tr>
<tr>
<td>/webpages?</td>
<td>When inserted following the base URL, displayed web page results instead of all results</td>
<td></td>
</tr>
<tr>
<td>text=</td>
<td>Text entered in first search box under the advanced search heading</td>
<td>text=DPO5</td>
</tr>
<tr>
<td>q=</td>
<td>The text typed into the single search bar</td>
<td>q=income (see section 2.3 for information on how to handle spaces in text searches)</td>
</tr>
<tr>
<td>t=</td>
<td>Topics from the filter panel or from Advanced Search</td>
<td>t=poverty</td>
</tr>
<tr>
<td>g=</td>
<td>Geographies, represented with GEOIDs</td>
<td>g=0400000US24 (see section 2.1.1 for detailed explanation)</td>
</tr>
<tr>
<td>y=</td>
<td>Year</td>
<td>y=2017</td>
</tr>
<tr>
<td>d=</td>
<td>Dataset</td>
<td>d=DEC%20Summary%20File%201</td>
</tr>
<tr>
<td>n=</td>
<td>North American Industry Classification System (NAICS) Code(s)</td>
<td>n=5312</td>
</tr>
</tbody>
</table>
## 2.1.1 Geo IDs and Collections Explained

Geographic identifiers (GEOIDs) are utilized to narrow a search to a specific geographic area, represented by a unique identifier. GEOIDs are numeric codes that uniquely identify all administrative/legal and statistical geographic areas for which the Census Bureau tabulates data. From Alaska, the largest state, to the smallest census block in New York City, every geographic area has a unique GEOID.

Detailed information on GEOIDs can be found on the Census website on the [Understanding Geographic Identifiers (GEOIDs)](https://www.census.gov/geo/tools/guidance/guidance.html) page. For further information on Census Geographies as a whole, please see the [Guidance for Geography Users](https://www.census.gov/geo/).

### 2.1.1.1 Geographic IDs on data.census.gov

Census Geographic IDs contain a significant amount of information regarding the selected areas. This is reflected in the structure of the ID. Geographic IDs use are constructed as follows:

**Figure 1 – Geographic Summary Levels**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>p=</td>
<td>Product/Service Code(s)</td>
<td>p=10113</td>
</tr>
<tr>
<td>matfuel=</td>
<td>Material/Fuel Code(s)</td>
<td>matfuel=00971000</td>
</tr>
<tr>
<td>napcs=</td>
<td>North American Product Classification System (NAPCS) Code(s)</td>
<td>napcs=4000025000</td>
</tr>
<tr>
<td>comm=</td>
<td>Commodity Flow Survey (CFS) Code(s)</td>
<td>comm=0413</td>
</tr>
<tr>
<td>tid=</td>
<td>Table ID, containing information on the product and the table displayed. Format: [ProductName].[TableID]</td>
<td>tid=ACSST1Y2017.S1701</td>
</tr>
</tbody>
</table>

In this example tid references table S1701, for the 2017 ACS 1-Year Estimates Subject Table (ACSST1Y2017)
On data.census.gov, geographies are represented in the URL by the parameter \texttt{g=}

When geographies within different geographic summary levels are selected, they are divided by an underscore in the URL. Below are a few examples:

- \texttt{g=0400000US02,12\_0500000US24005} – Selecting Alaska (02) and Florida (12) within State (040) AND selecting Baltimore County, MD (24005) under Maryland within County (050)

- \texttt{g=0400000US02,12\_0500000US24005,26003} - Selecting Alaska (02) and Florida (12) within State (040) AND selecting Baltimore County, MD (24005) and Alger County, MI (26003) within County (050)

The Geographic ID for a specific location can be obtained using the Advanced Search function of data.census.gov. On the advanced search page, users may browse geographies available on the site. When a specific geography is selected, the URL updates with that geography.

For example, if Island County, WA is selected via the Advanced Search screen, the URL updates with \texttt{g=0500000US53029}, the geo ID for Island County.

\textbf{Figure 2} – Obtaining Geographic ID from Advanced Search
2.1.1.2 Geography Collections on data.census.gov

Geography collections allow users to select a collection of geographies in bulk, using either a single checkbox in Advanced Search, or a single parameter within the URL. A comprehensive list of currently available collections can be found in Appendix 2 of the data.census.gov Release Notes.

Within the URL, geography collections are represented by a g= parameter value combining the GeoID for the containing geography with the Geographic Summary Level of the items within the collection.

For example, All Counties in Alabama would be represented as g=0400000US01.050000

0400000US01 is the GeoID for Alabama and 050000 indicates that all geographic ids at the county summary level should be selected within Alabama.

2.2 Specific URL Parameters

Specific URL Parameters are used in specified sections of data.census.gov and only apply to content in that section (e.g. Tables, Maps).
## 2.2.1 Map Specific Parameters

### Table 2 - Map Specific Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **layer=** | Layer (Summary Level) - The boundaries that are shown on the map. These values also contain the vintage for the layer. This corresponds to the entries displayed in the Geographies dropdown in the map view. It is recommended that users utilize the Geographies dropdown on the map view to generate layer values. | layer=VT_2018_050_00_PY_D1  
The above example shows the value for the 2018 county level (050_00) boundaries  
layer=VT_2018_040_00_PP_D1  
The above example shows the value for the 2018 state level” (040_00) boundaries |
| **cid=** | Cell ID for selected data variable  
This corresponds to the entries in the Data Variable dropdown in the map view. Changing this dropdown will change the cid in the URL. | cid=S1501_C01_003E  
cid=S1501_C01_001E |
| **palette=** | Selected theme colors  
Available color palettes can be viewed by selecting Customize Map and then selecting the Color Palette Dropdown | palette=Spectral  
palette=YlOrBr |
| **break=** | Selected number of ranges to divide thematic data  
Available breaks range from 1 to 9 | break=5  
break=6 |
| **classification=** | Selected classification used to determine breaks  
Available classifications:  
- Natural Breaks  
- Quantile  
- Equal Interval | classification=Natural%20Breaks  
classification=Quantile  
classification=Equal%20Interval |
### 2.2.2 Table Specific Parameters

Table 3 – Table Specific Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
</table>
| hidePreview= | On table results page, controls whether the selected table is shown in preview mode (hidePreview=false) or as a full table (hidePreview=true) | hidePreview=true  
hidePreview=false |
| moe=       | Show or hide the **Margin of Error** columns in a table.                | moe=true  
moe=false |
| tp=        | Transpose a table from the default layout.                              | tp=true  
tp=false |
2.2.3 Profile Page Specific Parameters

Table 4 – Profile Page Specific Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>/profile?</td>
<td>When inserted in conjunction with a geographic entity, this creates a URL for a Profile Page. At the time of publication, Geographic Profile Pages are available for the following summary levels: • Nation • State • County • Place • County Subdivision</td>
<td>profile?g=0400000US51 profile?g=0400000US53</td>
</tr>
</tbody>
</table>

Note: Currently, profile pages are only supported for geographic entities. As additional profile page types are added, additional parameters will be made available to link to them.

2.3 Special Characters

All parameter values must be URL encoded to work correctly in data.census.gov. The browser automatically encodes this upon a submission via data.census.gov searches (For example, when a search query for Population and People is submitted, it is encoded as Population%20and%20People.) However, when adding a link manually users should encode special characters (delimiters) in URL format. This encoding is explained in the table below.

Table 5 – URL Encoded Values for Special Characters

<table>
<thead>
<tr>
<th>Special Character</th>
<th>Description</th>
<th>URL Encoded Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>Space</td>
<td>%20</td>
</tr>
<tr>
<td>!</td>
<td>exclamation point</td>
<td>%21</td>
</tr>
<tr>
<td>#</td>
<td>Hash</td>
<td>%23</td>
</tr>
<tr>
<td>$</td>
<td>dollar sign</td>
<td>%24</td>
</tr>
<tr>
<td>%</td>
<td>percent sign</td>
<td>%25</td>
</tr>
<tr>
<td>+</td>
<td>plus sign</td>
<td>%2B</td>
</tr>
<tr>
<td>/</td>
<td>Slash</td>
<td>%2F</td>
</tr>
</tbody>
</table>
Some special characters serve specific functions in data.census.gov URLs. These characters are not encoded, and their functions are listed in the below table.

Table 6 – Special Characters with Functions in URL

<table>
<thead>
<tr>
<th>Special Character</th>
<th>Description</th>
<th>Function in data.census.gov URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td>Colon</td>
<td>%3A</td>
</tr>
<tr>
<td>;</td>
<td>semi-colon</td>
<td>%3B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pipe</td>
</tr>
</tbody>
</table>

- minus sign: Used in certain product names

- Period: Used as part of the domain name and in table IDs.
  - Example: data.census.gov
  - Example: tid=ACSDP1Y2018.DP05

- Underscore: Used as part of URL construction
3 Deep Link Use Cases

The following use cases demonstrate how different data.census.gov deep link URLs may be constructed utilizing the parameters outlined above.

3.1 Use Case – Population and People in Maryland – All Results and Table Results

3.1.1 Linking to All Search Results

The URL below represents a search for the topic of Populations and People t=Populations%20and%20People in Maryland g=0400000US24 in which all results are displayed /all?

Note that the spaces in Populations and People are appropriately encoded [%20]

https://data.census.gov/cedsci/all?g=0400000US24&t=Populations%20and%20People
3.1.2 Linking directly to Table Results

By changing `/all?` in the above results to `/table?` the same URL will now link directly to the Table Results for Populations and People in Maryland.


When the table results of this search are returned, additional parameters are included in the URL:

1. `&hidePreview = False` – Indicates that a preview for the first table result will be shown

Clicking CUSTOMIZE TABLE for the previewed S0101 table will load a full view of the table. From this full view, manipulations to the table are further reflected in the URL for example, clicking the MoE toggle, or manually adding `&moe=false` will remove the Margin of Error.

If the table is transposed, `&tp=true` is added to the URL, allowing it to link to the transposed table:

3.2 Use Case - Population Total in Maryland – All Results and Map Results

3.2.1 Linking to All Search Results

The following URL represents a search for Population Total \texttt{t=Population%20Total} in Maryland \texttt{g=0400000US24} in which all results are shown /all?

\url{http://data.census.gov/cedsci/all?g=0400000US24&t=Population%20Total}

Note that the spaces in Populations and People are appropriately encoded [%20]
3.2.2 Linking Directly to Map Results

By changing `/all?` in the above results to `/map?` the same URL will now link directly to the Map Results for the original query of Total Population.


When the Maps page loads, it will show the selection map for the geography included in search, in this case Maryland. The URL will also contain additional parameters, relevant to the display of the top table result:

1. **vintage=2019** – Indicates that 2019 map boundaries are in use
2. **layer=VT_2019_040_00_PP_D1** – Indicates that the state layer (040) is in use
3. **palette=Teal**
4. **break=5**
5. **classification=Natural%20Breaks**
6. **mode=selection**

Clicking the first table result loads that result on to the preview map, changing the map preview mode from selection to thematic.
https://data.census.gov/cedsci/map?_t=Population%20Total&g=04000US24&tid=PEPP%202019.PEPANNRES&vintage=2019&layer=VT_2019_040_00_PP_D1&cid=POP&mode=thematic
Map manipulations made on the Map Results page are reflected in the URL. The below example, several counties have been selected.

3.2.3 Linking to Customized Map Results

Clicking CUSTOMIZE MAP allows a user to further customize a map view. These customizations are captured in the URL.

In the above example, the following customizations have been made via map customization controls:

1. Customization Controls Displayed - \&mode=customize
2. Delaware, Virginia, and West Virginia selected via the map - \g=0400000US24,51,54,10,11
3. Number of data/classes ranges adjusted to 4 - \&break=4
4. Palette color set to Orange - \&palette=Oranges

Navigating to this new URL opens the map preview, which now includes the changes made during customization.
3.3 Use Case – Linking Directly to a Table

3.3.1 Building a Direct Table Link

Direct links to tables may be created using the URL parameters available on data.census.gov. The example below shows a direct link to the 2018 version of Table DP02: Selected Social Characteristics in the United States for all counties in Maryland:


The parameters utilized are:

1. g=0400000US24.050000 – Indicates that the table should be filtered to show data for all counties (050000) in Maryland (0400000US24)

2. &tid=ACSDP1Y2018.DP02 – Indicates that the table to be shown is DP02 for the 2018 ACS 1-Year Estimates

3.3.2 Updating a Direct Table Link

Using URL parameters, saved table links can be easily updated. In the above example a direct link to-table the 2018 version DP02 for all counties in Maryland was created. By making a change to the tid= parameter, this link can be updated to show the 2019 version of the table:

### SELECTED SOCIAL CHARACTERISTICS IN THE UNITED STATES

#### Allegheny County, Maryland

<table>
<thead>
<tr>
<th>Label</th>
<th>Estimate</th>
<th>Margin of Error</th>
<th>Present</th>
<th>Percent Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total households</td>
<td>10,444</td>
<td>±676</td>
<td>10.7</td>
<td>±2.3</td>
</tr>
<tr>
<td>Households with own children under 18 years</td>
<td>2,716</td>
<td>±641</td>
<td>10.2</td>
<td>±3.1</td>
</tr>
<tr>
<td>Households with children under 18 years</td>
<td>5,695</td>
<td>±1,019</td>
<td>21.5</td>
<td>±3.3</td>
</tr>
<tr>
<td>Male household, no spouse/partner present</td>
<td>314</td>
<td>±223</td>
<td>1.2</td>
<td>±0.9</td>
</tr>
<tr>
<td>Householder living alone</td>
<td>4,078</td>
<td>±552</td>
<td>15.4</td>
<td>±3.3</td>
</tr>
<tr>
<td>65 years and over</td>
<td>1,004</td>
<td>±174</td>
<td>5.6</td>
<td>±1.8</td>
</tr>
<tr>
<td>Female household, no spouse/partner present</td>
<td>7,454</td>
<td>±1,015</td>
<td>29.5</td>
<td>±2.9</td>
</tr>
<tr>
<td>Households with own children under 18 years</td>
<td>1,041</td>
<td>±405</td>
<td>3.9</td>
<td>±1.8</td>
</tr>
</tbody>
</table>
3.4 Use Case – Profile Page Deep Linking

3.4.1 Creating Profile Page Deep Links

In addition to tables, maps, and all search results, users may also deep link to profile pages. Currently, profile pages are only available for geographies. The below link shows a direct link to the Maryland Profile Page

https://data.census.gov/cedsci/profile?g=0400000US24
3.4.2 Creating Deep Links to Sections on a Profile Page

Deep link URLs may also be used to directly access a given section of a profile page. These links are generated using the **Share/Export** button for that section. The below link was created using the Share/Export button for the Family and Living Arrangements section of the Maryland Profile Page

4 Examples of Linking to Search Results in Basic Search

The following sections provide examples for how deep links to various search results are constructed. Note that over time search results for a given set of search terms may change, as the search algorithm continues to be refined.

- Display Search Results for "Maryland Population"
  https://data.census.gov/cedsci/all?q=Maryland%20Population

- Display Search Results for Maryland and for NAICS code 3111, 3115
  https://data.census.gov/cedsci/all?g=0400000US24&n=3111%3A3115

- Display Search Results for United States and for 6-digit NAICS Codes
  https://data.census.gov/cedsci/all?n=N0600.00

- Display search results for Population in all counties of Maryland
  https://data.census.gov/cedsci/all?q=population&g=0400000US24.050000
5  Examples of Linking to Table results from Basic Search

The following sections provide examples of deep links to specific tables using the URL parameters discussed in this document, including table specific parameters.

- Display Full View of Table DP05 for Maryland Demographic and Housing Estimates
  

- Display Full View of Table NS1700NONEMP for Maryland and for NAICS Code 3111, 3115
  

- Display List of Tables and Preview of First Table Related to 6-digit NAICS Codes in the United States
  
  [https://data.census.gov/cedsci/table?n=N0600.00](https://data.census.gov/cedsci/table?n=N0600.00)

- Display List of Tables and Preview of First Table Related to Population of All Counties of Maryland
  
6 Examples of Linking to Map results from Basic Search

The following sections provide examples of deep links to specific maps using the URL parameters discussed in this document, including map specific parameters.

- Display Map of Housing Occupancy in Maryland using 2018 ACS 1-Year Estimates
  

- Display Map of Population of All Counties of Maryland using 2019 ACS 1-Year Data
  

- Display List of Maps and Preview of First Map Related to Foreign Born Population in Washington State
  

- Display List of Maps and Preview of Selection Map Related to Population of All Counties of Maryland
  
7 Examples of Linking to a Geography Profile

The following section provides example of linking to Geographic Profile pages using URL parameters discussed in this guide.

- Display Maryland Profile
  
  https://data.census.gov/cedsci/profile?q=Maryland&g=0400000US24

- Display Fairfax County, VA Profile
  
  https://data.census.gov/cedsci/profile?q=0500000US51059
Building Deep Links with Advanced Search

This section covers the construction of deep links for search queries utilizing the Advanced Search functionality of data.census.gov.

APPENDIX A

The following examples show how a deep link URL may be built using Advanced Search.

1. From the Landing Page select Advanced Search.

The URL reads https://data.census.gov/cedsci/advanced.

2. In the BROWSE FILTERS panel, select Topics > Employment.
3. In the **EMPLOYMENT** panel, select **Industry**. The URL reads
https://data.census.gov/cedsci/advanced?t=Industry
4. In the BROWSE FILTERS panel, select Geography > State.
5. In the STATE panel, select California. The URL reads

https://data.census.gov/cedsci/advanced?t=Industry&g=0400000US06
6. In the **STATE** panel select **Florida**. The URL reads
   https://data.census.gov/cedsci/advanced?t=Industry&g=0400000US06,12

7. Click the **Search** button.
8. The search results appear in page All and the URL reads https://data.census.gov/cedsci/all?t=Industry&g=0400000US06,12