

Data Dictionary

O*NET[®] 28.2 Database

National Center for O*NET Development
Email: onet@onetcntr.org



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Table of Contents

Using O*NET Data and Metadata	1
Knowledge, Skills, Abilities	2
Knowledge	3
Skills	5
Abilities	7
Education, Experience, Training	10
Education, Training, and Experience	11
Education, Training, and Experience Categories	13
Job Zones	14
Job Zone Reference	15
Interests	17
Interests	18
RIASEC Keywords	21
Basic Interests to RIASEC	22
Interests Illustrative Activities	23
Interests Illustrative Occupations	24
Work Values and Work Styles	25
Work Values	26
Work Styles	28
Tasks	30
Task Statements	31
Task Ratings	33
Task Categories	35
Emerging Tasks	36
Technology Skills & Tools	38
Technology Skills	39
Tools Used	41
UNSPSC Reference	43
Work Activities	45
Work Activities	46
IWA Reference	48
DWA Reference	49
Tasks to DWAs	50
Work Context	51
Work Context	52
Work Context Categories	54
Occupation Titles	55
Occupation Data	56
Alternate Titles	58
Sample of Reported Titles	60
Related Occupations and Related Domains	61
Related Occupations	62

Abilities to Work Activities	64
Abilities to Work Context	65
Skills to Work Activities	66
Skills to Work Context	67
Data Collection	68
Content Model Reference	69
Occupation Level Metadata	70
Level Scale Anchors	72
Scales Reference	74
Survey Booklet Locations	75
Appendices	76
1. Item Rating Level Statistics - Analyst	77
2. Item Rating Level Statistics - Incumbent	78
3. Key to Occupation Level Metadata	79
4. Content Updates Since Release 4.0	82
5. Historical Summary of Database Content Changes	99

Using O*NET Data and Metadata

Metadata is provided in the O*NET database to provide users with information that will help evaluate the quality and valid use of the data. The needs of individual users of the O*NET database will determine which metadata items are utilized.

It's assumed that the needs of many users will be met by using O*NET data along with the O*NET metadata that provides the recommended “flags” for “Not Relevant” or “Recommend Suppress”. Those interested in a more detailed study or use of the database can choose to utilize any or all of the provided metadata items. Metadata is provided at both the item level and at the occupation level.

For more information, see the Appendices:

- [*Appendix 1, Item Rating Level Statistics - Analyst*](#)
- [*Appendix 2, Item Rating Level Statistics - Incumbent*](#)
- [*Appendix 3, Key to Occupation Level Metadata*](#)

In the “Structure and Description” section documenting each file, cells that are shaded or contain **bold** text denote O*NET metadata versus O*NET data. Bold text highlights the “Not Relevant” and “Recommend Success” flags recommended for typical use of O*NET data.

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Knowledge, Skills, Abilities

Knowledge

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Knowledge ratings.

File Name: Knowledge.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Not Relevant	Character(1)	Not relevant for the occupation (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Knowledge data associated with each O*NET-SOC occupation. It is displayed in 13 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Not Relevant, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 13 fields are represented by one row. There are a total of 57,618 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, and Not Relevant
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Knowledge:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Not Relevant	Date	Domain Source
13-2099.04	2.C.8.b	Law and Government	IM	4.04	24	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
13-2099.04	2.C.8.b	Law and Government	LV	4.32	25	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
13-2099.04	2.C.9.a	Telecommunications	IM	2.71	24	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
13-2099.04	2.C.9.a	Telecommunications	LV	2.88	25	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
13-2099.04	2.C.9.b	Communications and Media	IM	2.84	25	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
13-2099.04	2.C.9.b	Communications and Media	LV	3.44	25	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
13-2099.04	2.C.10	Transportation	IM	2.28	25	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
13-2099.04	2.C.10	Transportation	LV	2.44	25	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert

Skills

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Skill ratings.

File Name: Skills.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Not Relevant	Character(1)	Not relevant for the occupation (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Skill data associated with each O*NET-SOC occupation. It is displayed in 13 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Not Relevant, Date, and Domain Source. Refer to [Appendix 1, Item Rating Level Statistics - Analyst](#) for additional information on these items. The 13 fields are represented by one row. There are a total of 61,110 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Skills Ratings: Procedures Update](https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html) [https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html]

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, and Not Relevant
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Skills:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Not Relevant	Date	Domain Source
31-1122.00	2.A.1.a	Reading Comprehension	IM	2.88	8	0.1250	2.6300	3.1200	N	n/a	08/2023	Analyst
31-1122.00	2.A.1.a	Reading Comprehension	LV	3.00	8	0.0000	3.0000	3.0000	N	N	08/2023	Analyst
31-1122.00	2.A.1.b	Active Listening	IM	3.38	8	0.1830	3.0164	3.7336	N	n/a	08/2023	Analyst
31-1122.00	2.A.1.b	Active Listening	LV	3.00	8	0.0000	3.0000	3.0000	N	N	08/2023	Analyst
31-1122.00	2.A.1.c	Writing	IM	2.88	8	0.2266	2.4309	3.3191	N	n/a	08/2023	Analyst
31-1122.00	2.A.1.c	Writing	LV	2.88	8	0.1250	2.6300	3.1200	N	N	08/2023	Analyst
31-1122.00	2.A.1.d	Speaking	IM	3.00	8	0.0000	3.0000	3.0000	N	n/a	08/2023	Analyst
31-1122.00	2.A.1.d	Speaking	LV	3.00	8	0.0000	3.0000	3.0000	N	N	08/2023	Analyst

Abilities

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Ability ratings.

File Name: Abilities.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Not Relevant	Character(1)	Not relevant for the occupation (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Ability data associated with each O*NET-SOC occupation. It is displayed in 13 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Not Relevant, Date, and Domain Source. Refer to [Appendix 1, Item Rating Level Statistics - Analyst](#) for additional information on these items. The 13 fields are represented by one row. There are a total of 90,792 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Ratings: Linkage Revisit](https://www.onetcenter.org/reports/LinkageRevisit.html) [https://www.onetcenter.org/reports/LinkageRevisit.html]
- [O*NET Analyst Occupational Abilities Ratings: Procedures Update](https://www.onetcenter.org/reports/AnalystProcUpdate.html) [https://www.onetcenter.org/reports/AnalystProcUpdate.html]
- [Updating Occupational Ability Profiles with O*NET Content Model Descriptors](https://www.onetcenter.org/reports/UpdateOAP.html) [https://www.onetcenter.org/reports/UpdateOAP.html]
- [Linking Client Assessment Profiles to O*NET Occupational Profiles Within the O*NET Ability Profiler](https://www.onetcenter.org/reports/AP_Linking.html) [https://www.onetcenter.org/reports/AP_Linking.html]

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added

Release Number	Description of Change
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, and Not Relevant
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Abilities:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Not Relevant	Date	Domain Source
51-9161.00	1.A.1.a.1	Oral Comprehension	IM	3.25	8	0.1637	2.9292	3.5708	N	n/a	08/2023	Analyst
51-9161.00	1.A.1.a.1	Oral Comprehension	LV	3.75	8	0.1637	3.4292	4.0708	N	N	08/2023	Analyst
51-9161.00	1.A.1.a.2	Written Comprehension	IM	3.00	8	0.0000	3.0000	3.0000	N	n/a	08/2023	Analyst
51-9161.00	1.A.1.a.2	Written Comprehension	LV	3.00	8	0.0000	3.0000	3.0000	N	N	08/2023	Analyst
51-9161.00	1.A.1.a.3	Oral Expression	IM	3.00	8	0.0000	3.0000	3.0000	N	n/a	08/2023	Analyst
51-9161.00	1.A.1.a.3	Oral Expression	LV	3.62	8	0.1830	3.2664	3.9836	N	N	08/2023	Analyst
51-9161.00	1.A.1.a.4	Written Expression	IM	2.88	8	0.1250	2.6300	3.1200	N	n/a	08/2023	Analyst
51-9161.00	1.A.1.a.4	Written Expression	LV	3.00	8	0.0000	3.0000	3.0000	N	N	08/2023	Analyst

Education, Experience, Training

Education, Training, and Experience

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Education, Training, and Experience ratings.

File Name: Education, Training, and Experience.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Percent frequency category (<i>see Education, Training, and Experience Categories</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the percent frequency data associated with Education, Training, and Experience Content Model elements. It is displayed in 13 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 13 fields are represented by one row. There are a total of 35,881 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0	Added as a new file
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, and Recommend Suppress
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Education, Training, and Experience:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Category	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Date	Domain Source
51-8093.00	2.D.1	Required Level of Education	RL	1	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	2	97.02	21	1.9957	88.5275	99.2763	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	3	1.69	21	1.3334	0.3199	8.4065	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	4	1.29	21	1.3460	0.1455	10.5581	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	5	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	6	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	7	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	8	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	9	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	10	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	11	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent
51-8093.00	2.D.1	Required Level of Education	RL	12	0.00	21	0.0000	n/a	n/a	N	08/2023	Incumbent

Education, Training, and Experience Categories

Purpose: Provide descriptions of the Education, Training, and Experience percent frequency categories.

File Name: Education, Training, and Experience Categories.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Category value associated with element
Category Description	Character Varying(1000)	Detail description of category associated with element

This file contains the categories associated with the Education, Training, and Experience content area. Categories for the following scales are included: Required Level of Education (RL), Related Work Experience (RW), On-Site or In-Plant Training (PT), and On-The-Job Training (OJ).

The file is displayed in five tab delimited fields with the columns named Element ID, Element Name, Scale ID, Category, and Category Description. The five fields are represented by one row. There are a total of 41 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
9.0	Added as a new file
10.0 - 28.2	No structure changes

Data Example - Education, Training, and Experience Categories:

Element ID	Element Name	Scale ID	Category	Category Description
3.A.1	Related Work Experience	RW	1	None
3.A.1	Related Work Experience	RW	2	Up to and including 1 month
3.A.1	Related Work Experience	RW	3	Over 1 month, up to and including 3 months
3.A.1	Related Work Experience	RW	4	Over 3 months, up to and including 6 months
3.A.1	Related Work Experience	RW	5	Over 6 months, up to and including 1 year
3.A.1	Related Work Experience	RW	6	Over 1 year, up to and including 2 years
3.A.1	Related Work Experience	RW	7	Over 2 years, up to and including 4 years
3.A.1	Related Work Experience	RW	8	Over 4 years, up to and including 6 years
3.A.1	Related Work Experience	RW	9	Over 6 years, up to and including 8 years
3.A.1	Related Work Experience	RW	10	Over 8 years, up to and including 10 years
3.A.1	Related Work Experience	RW	11	Over 10 years

Job Zones

Purpose: Provide a mapping of O*NET-SOC occupations to Job Zone ratings.

File Name: Job Zones.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Job Zone	Integer(1)	Job Zone number (<i>see Job Zone Reference</i>)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains each O*NET-SOC code and its corresponding Job Zone number.

The file is displayed in four tab delimited fields with the columns named O*NET-SOC Code, Job Zone, Date, and Domain Source. The four fields are represented by one row. There are a total of 923 rows of data in this file.

For more information, see:

- [Procedures for O*NET Job Zone Assignment](https://www.onetcenter.org/reports/JobZoneProcedure.html) [https://www.onetcenter.org/reports/JobZoneProcedure.html]

File Structure Changes:

Release Number	Description of Change
5.0	No structure changes
5.1	Date and Domain Source columns added
6.0 - 28.2	No structure changes

Data Example - Job Zones:

O*NET-SOC Code	Job Zone	Date	Domain Source
43-4171.00	2	08/2023	Analyst
13-1051.00	4	08/2023	Analyst
19-4013.00	3	08/2023	Analyst
19-2031.00	4	08/2023	Analyst
37-2011.00	3	08/2023	Analyst
27-1011.00	4	08/2023	Analyst

Job Zone Reference

Purpose: Provide Job Zone data (developed to help transition DOT's measures of Specific Vocational Preparation (SVP) to O*NET's measure of experience, education, and job training).

File Name: Job Zone Reference.txt

Structure and Description:

Column	Type	Column Content
Job Zone	Integer(1)	Job Zone number
Name	Character Varying(50)	Job Zone name/zone
Experience	Character Varying(300)	Job Zone experience requirements
Education	Character Varying(500)	Job Zone educational requirements
Job Training	Character Varying(300)	Job Zone training requirements
Examples	Character Varying(500)	Job Zone examples
SVP Range	Character Varying(25)	Specific vocational preparation range

This file describes the five O*NET Job Zones, which are groups of occupations that need the same level of experience, education, and training.

The file is displayed in seven tab delimited fields with the columns named Job Zone, Name, Experience, Education, Job Training, Examples, and SVP Range. The seven fields are represented by one row. There are a total of 5 rows of data in this file.

For more information, see:

- [Procedures for O*NET Job Zone Assignment](https://www.onetcenter.org/reports/JobZoneProcedure.html) [https://www.onetcenter.org/reports/JobZoneProcedure.html]

File Structure Changes:

Release Number	Description of Change
5.0 - 28.2	No structure changes

Data Example - Job Zone Reference:

Job Zone	Name	Experience	Education	Job Training	Examples	SVP Range
1	Job Zone One: Little or No Preparation Needed	Little or no previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a waiter or waitress even if he/she has never worked before.	Some of these occupations may require a high school diploma or GED certificate.	Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.	These occupations involve following instructions and helping others. Examples include food preparation workers, dishwashers, floor sanders and finishers, landscaping and groundskeeping workers, logging equipment operators, and baristas.	(Below 4.0)
2	Job Zone Two: Some Preparation Needed	Some previous work-related skill, knowledge, or experience is usually needed. For example, a teller would benefit from experience working directly with the public.	These occupations usually require a high school diploma.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.	These occupations often involve using your knowledge and skills to help others. Examples include orderlies, counter and rental clerks, customer service representatives, security guards, upholsterers, tellers, and dental laboratory technicians.	(4.0 to < 6.0)
3	Job Zone Three: Medium Preparation Needed	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.	These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include hydroelectric production managers, desktop publishers, electricians, agricultural technicians, barbers, court reporters and simultaneous captioners, and medical assistants.	(6.0 to < 7.0)

Interests

Interests

Purpose: Provide general occupational interest (RIASEC) high-point codes and numeric profile data for each O*NET-SOC occupation.

File Name: Interests.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the general occupational interest (RIASEC) high-point codes and numeric profile data for each O*NET-SOC occupation.

Interest ratings are presented as two scales: OI reports the RIASEC level of each interest and IH presents “high-point codes”, the numbers of the RIASEC scales for the first, second and/or third highest ratings.

The high-point values represent the following elements:

- 0.00 = No high point available
- 1.00 = Realistic
- 2.00 = Investigative
- 3.00 = Artistic
- 4.00 = Social
- 5.00 = Enterprising
- 6.00 = Conventional

The file is displayed in seven tab delimited fields with the columns named O*NET-SOC Code, Element ID, Element Name, Scale ID, Data Value, Date, and Domain Source. The seven fields are represented by one row. There are a total of 8,307 rows of data in this file.

For more information, see:

- [Using Machine Learning to Develop Occupational Interest Profiles and High-Point Codes for the O*NET System](https://www.onetcenter.org/reports/ML_OIPs.html) [https://www.onetcenter.org/reports/ML_OIPs.html]
- [Linking Client Assessment Profiles to O*NET® Occupational Profiles Within the O*NET Interest Profiler Short Form and Mini Interest Profiler \(Mini-IP\)](https://www.onetcenter.org/reports/Mini-IP_Linking.html) [https://www.onetcenter.org/reports/Mini-IP_Linking.html]

- [Development of an O*NET® Mini Interest Profiler \(Mini-IP\) for Mobile Devices: Psychometric Characteristics](https://www.onetcenter.org/reports/Mini-IP.html) [https://www.onetcenter.org/reports/Mini-IP.html]
- [Examining the Efficacy of Emoji Anchors for the O*NET Interest Profiler Short Form](https://www.onetcenter.org/reports/IP_Emoji.html) [https://www.onetcenter.org/reports/IP_Emoji.html]
- [O*NET Interest Profiler Short Form Psychometric Characteristics: Summary](https://www.onetcenter.org/reports/IPSF_Psychometric.html) [https://www.onetcenter.org/reports/IPSF_Psychometric.html]

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1 - 28.2	No structure changes

Data Example - Interests:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	Date	Domain Source
43-4041.00	1.B.1.a	Realistic	OI	1.00	11/2023	Machine Learning
43-4041.00	1.B.1.b	Investigative	OI	1.85	11/2023	Machine Learning
43-4041.00	1.B.1.c	Artistic	OI	1.00	11/2023	Machine Learning
43-4041.00	1.B.1.d	Social	OI	3.39	11/2023	Machine Learning
43-4041.00	1.B.1.e	Enterprising	OI	4.47	11/2023	Machine Learning
43-4041.00	1.B.1.f	Conventional	OI	7.00	11/2023	Machine Learning
43-4041.00	1.B.1.g	First Interest High-Point	IH	6.00	11/2023	Machine Learning
43-4041.00	1.B.1.h	Second Interest High-Point	IH	5.00	11/2023	Machine Learning
43-4041.00	1.B.1.i	Third Interest High-Point	IH	4.00	11/2023	Machine Learning
29-2034.00	1.B.1.a	Realistic	OI	6.25	11/2023	Machine Learning
29-2034.00	1.B.1.b	Investigative	OI	4.63	11/2023	Machine Learning
29-2034.00	1.B.1.c	Artistic	OI	1.00	11/2023	Machine Learning
29-2034.00	1.B.1.d	Social	OI	3.58	11/2023	Machine Learning
29-2034.00	1.B.1.e	Enterprising	OI	1.00	11/2023	Machine Learning
29-2034.00	1.B.1.f	Conventional	OI	4.87	11/2023	Machine Learning
29-2034.00	1.B.1.g	First Interest High-Point	IH	1.00	11/2023	Machine Learning
29-2034.00	1.B.1.h	Second Interest High-Point	IH	6.00	11/2023	Machine Learning
29-2034.00	1.B.1.i	Third Interest High-Point	IH	2.00	11/2023	Machine Learning

RIASEC Keywords

Purpose: Provide action and object keywords for each general occupational interest.

File Name: RIASEC Keywords.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Keyword	Character Varying(150)	Relevant interest keyword
Keyword Type	Character Varying(20)	“Action” or “Object”

This file contains action and object keywords for each general occupational interest.

The file is displayed in four tab delimited fields with the columns named Element ID, Element Name, Keyword, and Keyword Type. The four fields are represented by one row. There are a total of 75 rows of data in this file.

For more information, see:

- [Updating Vocational Interests Information for the O*NET Content Model](https://www.onetcenter.org/reports/Voc_Interests.html) [https://www.onetcenter.org/reports/Voc_Interests.html]

File Structure Changes:

Release Number	Description of Change
27.2	Added as a new file
27.3 - 28.2	No structure changes

Data Example - RIASEC Keywords:

Element ID	Element Name	Keyword	Keyword Type
1.B.1.a	Realistic	Build	Action
1.B.1.a	Realistic	Drive	Action
1.B.1.a	Realistic	Install	Action
1.B.1.a	Realistic	Maintain	Action
1.B.1.a	Realistic	Repair	Action

Basic Interests to RIASEC

Purpose: Provide linkages between each basic occupational interest to relevant general occupational interests.

File Name: Basic Interests to RIASEC.txt

Structure and Description:

Column	Type	Column Content
Basic Interests Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Basic Interests Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
RIASEC Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
RIASEC Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)

This file contains linkages between each basic occupational interest to relevant general occupational interests.

The file is displayed in four tab delimited fields with the columns named Basic Interests Element ID, Basic Interests Element Name, RIASEC Element ID, and RIASEC Element Name. The four fields are represented by one row. There are a total of 53 rows of data in this file.

For more information, see:

- [Updating Vocational Interests Information for the O*NET Content Model](https://www.onetcenter.org/reports/Voc_Interests.html) [https://www.onetcenter.org/reports/Voc_Interests.html]

File Structure Changes:

Release Number	Description of Change
27.2	Added as a new file
27.3 - 28.2	No structure changes

Data Example - Basic Interests to RIASEC:

Basic Interests Element ID	Basic Interests Element Name	RIASEC Element ID	RIASEC Element Name
1.B.3.a	Mechanics/Electronics	1.B.1.a	Realistic
1.B.3.b	Construction/Woodwork	1.B.1.a	Realistic
1.B.3.c	Transportation/Machine Operation	1.B.1.a	Realistic
1.B.3.d	Physical/Manual Labor	1.B.1.a	Realistic
1.B.3.e	Protective Service	1.B.1.a	Realistic

Interests Illustrative Activities

Purpose: Provide illustrative work activities related to the general and basic occupational interests.

File Name: Interests Illustrative Activities.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (see Content Model Reference)
Element Name	Character Varying(150)	Content Model Element Name (see Content Model Reference)
Interest Type	Character Varying(20)	“General” or “Basic”
Activity	Character Varying(150)	Illustrative work activity

This file contains illustrative work activities related to the general and basic occupational interests.

The file is displayed in four tab delimited fields with the columns named Element ID, Element Name, Interest Type, and Activity. The four fields are represented by one row. There are a total of 188 rows of data in this file.

For more information, see:

- [Updating Vocational Interests Information for the O*NET Content Model](https://www.onetcenter.org/reports/Voc_Interests.html) [https://www.onetcenter.org/reports/Voc_Interests.html]

File Structure Changes:

Release Number	Description of Change
27.2	Added as a new file
27.3 - 28.2	No structure changes

Data Example - Interests Illustrative Activities:

Element ID	Element Name	Interest Type	Activity
1.B.1.a	Realistic	General	Build kitchen cabinets.
1.B.1.a	Realistic	General	Drive a truck to deliver packages to offices and homes.
1.B.1.a	Realistic	General	Put out forest fires.
1.B.1.a	Realistic	General	Repair household appliances.
1.B.1.b	Investigative	General	Develop a new medicine.

Interests Illustrative Occupations

Purpose: Provide illustrative occupations linked to the general and basic occupational interests.

File Name: Interests Illustrative Occupations.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Interest Type	Character Varying(20)	“General” or “Basic”
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)

This file contains illustrative occupations linked to the general and basic occupational interests. For occupation-specific ratings for RIASEC elements, see the [Interests](#) file.

The file is displayed in four tab delimited fields with the columns named Element ID, Element Name, Interest Type, and O*NET-SOC Code. The four fields are represented by one row. There are a total of 186 rows of data in this file.

For more information, see:

- [Updating Vocational Interests Information for the O*NET Content Model](https://www.onetcenter.org/reports/Voc_Interests.html) [https://www.onetcenter.org/reports/Voc_Interests.html]

File Structure Changes:

Release Number	Description of Change
27.2	Added as a new file
27.3 - 28.2	No structure changes

Data Example - Interests Illustrative Occupations:

Element ID	Element Name	Interest Type	O*NET-SOC Code
1.B.1.a	Realistic	General	17-3024.01
1.B.1.a	Realistic	General	45-2091.00
1.B.1.a	Realistic	General	47-2031.00
1.B.1.a	Realistic	General	53-3052.00
1.B.1.b	Investigative	General	19-1029.04

Work Values and Work Styles

Work Values

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Work Values ratings.

File Name: Work Values.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Work Values data associated with each O*NET- SOC occupation.

The column named Data Value provides both the mean extent rating (indicated by the value EX in the Scale ID column) and the top three high-point values for respondents endorsing each occupation (indicated by VH in the Scale ID Column).

The high-point values represent the following elements:

- 0.00 = No high point available
- 1.00 = Achievement
- 2.00 = Working Conditions
- 3.00 = Recognition
- 4.00 = Relationships
- 5.00 = Support
- 6.00 = Independence

The file is displayed in seven tab delimited fields with the columns named O*NET-SOC Code, Element ID, Element Name, Scale ID, Data Value, Date, and Domain Source. The seven fields are represented by one row. There are a total of 7,866 rows of data in this file.

For more information, see:

- [Second Generation Occupational Value Profiles for the O*NET System: Summary](https://www.onetcenter.org/reports/SecondOVP_Summary.html) [https://www.onetcenter.org/reports/SecondOVP_Summary.html]
- [Occupational Value Profiles for New and Emerging Occupations in the O*NET System: Summary](https://www.onetcenter.org/reports/OVP_NewEmerging.html) [https://www.onetcenter.org/reports/OVP_NewEmerging.html]

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1 - 28.2	No structure changes

Data Example - Work Values:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	Date	Domain Source
19-3033.00	1.B.2.a	Achievement	EX	5.83	11/2020	Analyst - Transition
19-3033.00	1.B.2.b	Working Conditions	EX	5.75	11/2020	Analyst - Transition
19-3033.00	1.B.2.c	Recognition	EX	5.33	11/2020	Analyst - Transition
19-3033.00	1.B.2.d	Relationships	EX	6.83	11/2020	Analyst - Transition
19-3033.00	1.B.2.e	Support	EX	3.17	11/2020	Analyst - Transition
19-3033.00	1.B.2.f	Independence	EX	6.00	11/2020	Analyst - Transition
19-3033.00	1.B.2.g	First Work Value High-Point	VH	4.00	11/2020	Analyst - Transition
19-3033.00	1.B.2.h	Second Work Value High-Point	VH	6.00	11/2020	Analyst - Transition
19-3033.00	1.B.2.i	Third Work Value High-Point	VH	1.00	11/2020	Analyst - Transition

Work Styles

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Work Styles ratings.

File Name: Work Styles.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Work Styles data associated with each O*NET-SOC occupation. It is displayed in 12 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 12 fields are represented by one row. There are a total of 13,968 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0	Added as a new file
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, and Recommend Suppress
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Work Styles:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Date	Domain Source
11-1011.00	1.C.1.a	Achievement/Effort	IM	4.69	28	0.1218	4.4426	4.9426	N	08/2023	Incumbent
11-1011.00	1.C.1.b	Persistence	IM	4.76	28	0.1104	4.5318	4.9847	N	08/2023	Incumbent
11-1011.00	1.C.1.c	Initiative	IM	4.85	28	0.0770	4.6927	5.0000	N	08/2023	Incumbent
11-1011.00	1.C.2.b	Leadership	IM	4.97	28	0.0194	4.9274	5.0000	N	08/2023	Incumbent
11-1011.00	1.C.3.a	Cooperation	IM	4.63	27	0.1880	4.2387	5.0000	N	08/2023	Incumbent
11-1011.00	1.C.3.b	Concern for Others	IM	4.50	28	0.1692	4.1545	4.8486	N	08/2023	Incumbent
11-1011.00	1.C.3.c	Social Orientation	IM	3.95	28	0.2019	3.5339	4.3626	N	08/2023	Incumbent
11-1011.00	1.C.4.a	Self-Control	IM	4.21	28	0.2064	3.7899	4.6368	N	08/2023	Incumbent

Tasks

Task Statements

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to tasks associated with the occupation.

File Name: Task Statements.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Task ID	Integer(8)	Identifies each task
Task	Character Varying(1000)	Task statement associated with an occupation
Task Type	Character Varying(12)	“Core” or “Supplemental”
Incumbents Responding	Integer(4)	Number of incumbents providing task information
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the tasks associated with each O*NET-SOC occupation.

The “Task Type” column identifies two categories of tasks:

- **Core** — tasks that are critical to the occupation. The criteria for these tasks are (a) relevance $\geq 67\%$ and (b) a mean importance rating of ≥ 3.0 .
- **Supplemental** — tasks that are less relevant and/or important to the occupation. Two sets of tasks are included in this category: (a) tasks rated $\geq 67\%$ on relevance but < 3.0 on importance, and (b) tasks rated $< 67\%$ on relevance, regardless of mean importance.

The file is displayed in seven tab delimited fields with the columns named O*NET-SOC Code, Task ID, Task, Task Type, Incumbents Responding, Date, and Domain Source. The seven fields are represented by one row. There are a total of 19,281 rows of data in this file.

For more information, see:

- [Summary of Procedures for O*NET Task Updating and New Task Generation](https://www.onetcenter.org/reports/TaskUpdating.html) [https://www.onetcenter.org/reports/TaskUpdating.html]

File Structure Changes:

Release Number	Description of Change
13.0	Added as a new file
14.0 - 28.2	No structure changes

Data Example - Task Statements:

O*NET-SOC Code	Task ID	Task	Task Type	Incumbents Responding	Date	Domain Source
47-2211.00	5177	Maintain equipment, making repairs or modifications when necessary.	Core	51	08/2023	Incumbent
47-2211.00	19858	Fabricate ducts for high efficiency heating, ventilating, and air conditioning (HVAC) systems to maximize efficiency of systems.	Core	50	08/2023	Incumbent
47-2211.00	5173	Fasten seams or joints together with welds, bolts, cement, rivets, solder, caulks, metal drive clips, or bonds to assemble components into products or to repair sheet metal items.	Core	50	08/2023	Incumbent
47-2211.00	5179	Transport prefabricated parts to construction sites for assembly and installation.	Core	50	08/2023	Incumbent
47-2211.00	5170	Install assemblies, such as flashing, pipes, tubes, heating and air conditioning ducts, furnace casings, rain gutters, or downspouts in supportive frameworks.	Core	50	08/2023	Incumbent
47-2211.00	18782	Hire, train, or supervise new employees or apprentices.	Core	50	08/2023	Incumbent
47-2211.00	20639	Lay out, measure, and mark dimensions and reference lines on material, such as roofing panels, using calculators, scribes, dividers, squares, or rulers.	Core	50	08/2023	Incumbent

Task Ratings

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to the ratings for tasks associated with the occupation.

File Name: Task Ratings.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Task ID	Integer(8)	Identifies each task (<i>see Task Statements</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Percent frequency category (<i>see Task Categories</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the task ratings associated with each O*NET-SOC occupation. It is displayed in 12 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 12 fields are represented by one row. There are a total of 161,847 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
13.0	Added as a new file
14.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Task Ratings:

O*NET-SOC Code	Task ID	Scale ID	Category	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Date	Domain Source
17-2199.09	16540	FT	1	0.00	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	2	0.00	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	3	15.79	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	4	5.26	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	5	52.63	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	6	10.53	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	FT	7	15.79	19	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	IM	n/a	4.28	18	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
17-2199.09	16540	RT	n/a	90.48	21	n/a	n/a	n/a	n/a	08/2023	Occupational Expert

Task Categories

Purpose: Provide description of Task categories.

File Name: Task Categories.txt

Structure and Description:

Column	Type	Column Content
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Category value associated with Scale ID
Category Description	Character Varying(1000)	Detail description of category associated with Scale ID

This file contains the categories associated with the Task content area. Categories for the scale Frequency of Task (FT) are included.

The file is displayed in three tab delimited fields with the columns named Scale ID, Category, and Category Description. The three fields are represented by one row. There are a total of 7 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
13.0	Added as a new file
14.0 - 28.2	No structure changes

Data Example - Task Categories:

Scale ID	Category	Category Description
FT	1	Yearly or less
FT	2	More than yearly
FT	3	More than monthly
FT	4	More than weekly
FT	5	Daily
FT	6	Several times daily
FT	7	Hourly or more

Emerging Tasks

Purpose: Provide emerging task data associated with some O*NET-SOC occupations.

File Name: Emerging Tasks.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Task	Character Varying(1000)	New or revised task associated with an occupation
Category	Character Varying(8)	“New” or “Revision”
Original Task ID	Integer(8)	Task ID referencing original task (<i>see Task Statements</i>)
Original Task	Character Varying(1000)	Original task being revised (<i>see Task Statements</i>)
Write-in Total	Integer(3)	Number of incumbents providing task
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains new and revised task statements proposed for future data collection. In their survey responses during the on-going data collection, job incumbents are given the opportunity to provide any statements of tasks that they feel are not represented in the current survey task list for their respective occupations. Based on a review and analysis of such statements, drawn from the occupations in the initial data collection, revisions were made to existing tasks and emerging tasks were identified.

The file is displayed in 8 tab delimited fields with the columns named O*NET-SOC Code, Task, Category, Original Task ID, Original Task, Write-in Total, Date, and Domain Source. The 8 fields are represented by one row. There are a total of 218 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
20.1	Added as a new file
20.2 - 28.2	No structure changes

Data Example - Emerging Tasks:

O*NET-SOC Code	Task	Category	Original Task ID	Original Task	Write-in Total	Date	Domain Source
45-4011.00	Create field maps using geographic information systems technology.	New	n/a	n/a	10	08/2023	Incumbent
11-9071.00	Monitor the performance of the gaming floor, relocating games and installing new games as necessary.	New	n/a	n/a	6	08/2023	Incumbent

Technology Skills & Tools

Technology Skills

Purpose: Provide Technology Skills examples.

File Name: Technology Skills.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Example	Character Varying(150)	Technology skill example
Commodity Code	Integer(8)	UNSPSC commodity code (<i>see UNSPSC Reference</i>)
Commodity Title	Character Varying(150)	UNSPSC commodity title (<i>see UNSPSC Reference</i>)
Hot Technology	Character(1)	Whether example is classified as a hot technology (Y=yes, N=no)
In Demand	Character(1)	Whether example is classified as in demand for the occupation (Y=yes, N=no)

This file contains the Technology Skills examples, including hot and in-demand technologies, associated with O*NET-SOC occupations. The columns “Commodity Code” and “Commodity Title” classify the example under the United Nations Standard Products and Services Code (UNSPSC). See the [UNSPSC Reference](#) section for more information.

The “Hot Technology” column indicates requirements frequently included across all employer job postings. A concise list of all hot technologies may be downloaded from [O*NET OnLine](https://www.onetonline.org/search/hot_tech/) [https://www.onetonline.org/search/hot_tech/].

The “In Demand” column indicates requirements frequently included in employer job postings for the particular occupation.

We welcome feedback on the Technology Skills database. We accept suggestions for new technology skills via our [feedback process](https://www.onetcenter.org/t2_feedback.html) [https://www.onetcenter.org/t2_feedback.html]. Suggestions will be considered for a future update of the Technology Skills database.

The file is displayed in six tab delimited fields with the columns named O*NET-SOC Code, Example, Commodity Code, Commodity Title, Hot Technology, and In Demand. The six fields are represented by one row. There are a total of 32,435 rows of data in this file.

For more information, see:

- [Hot Technologies and In Demand Technology Skills within the O*NET System](https://www.onetcenter.org/reports/Hot_Technologies_Demand.html) [https://www.onetcenter.org/reports/Hot_Technologies_Demand.html]
- [O*NET Center Tools and Technology Quality Control Processes](https://www.onetcenter.org/reports/T2_QC.html) [https://www.onetcenter.org/reports/T2_QC.html]
- [O*NET Tools and Technology: A Synopsis of Data Development Procedures](https://www.onetcenter.org/reports/T2Development.html) [https://www.onetcenter.org/reports/T2Development.html]

- [Identification of “Hot Technologies” within the O*NET® System](https://www.onetcenter.org/reports/Hot_Technologies.html) [https://www.onetcenter.org/reports/Hot_Technologies.html]
- [Tools and Technology Search](https://www.onetcenter.org/reports/T2_Search.html) [https://www.onetcenter.org/reports/T2_Search.html]

File Structure Changes:

Release Number	Description of Change
23.2	Added as a new file
23.3 - 27.0	No structure changes
27.1	“In Demand” column added
27.2 - 28.2	No structure changes

Data Example - Technology Skills:

O*NET-SOC Code	Example	Commodity Code	Commodity Title	Hot Technology	In Demand
11-2011.00	Actuate BIRT	43232314	Business intelligence and data analysis software	N	N
11-2011.00	Adobe Acrobat	43232202	Document management software	Y	N
11-2011.00	Adobe Acrobat Reader	43232202	Document management software	N	N
11-2011.00	Adobe After Effects	43232103	Video creation and editing software	Y	N
11-2011.00	Adobe Creative Cloud software	43232102	Graphics or photo imaging software	N	N

Tools Used

Purpose: Provide Tools Used examples.

File Name: Tools Used.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Example	Character Varying(150)	Tool example
Commodity Code	Integer(8)	UNSPSC commodity code (<i>see UNSPSC Reference</i>)
Commodity Title	Character Varying(150)	UNSPSC commodity title (<i>see UNSPSC Reference</i>)

This file contains the Tools Used examples associated with O*NET-SOC occupations. The columns “Commodity Code” and “Commodity Title” classify the example under the United Nations Standard Products and Services Code (UNSPSC). See the [UNSPSC Reference](#) section for more information.

We welcome feedback on the Tools Used database. We accept suggestions for new tools via our [feedback process](https://www.onetcenter.org/t2_feedback.html) [https://www.onetcenter.org/t2_feedback.html]. Suggestions will be considered for a future update of the Tools Used database.

The file is displayed in four tab delimited fields with the columns named O*NET-SOC Code, Example, Commodity Code, and Commodity Title. The four fields are represented by one row. There are a total of 41,650 rows of data in this file.

For more information, see:

- [O*NET Center Tools and Technology Quality Control Processes](https://www.onetcenter.org/reports/T2_QC.html) [https://www.onetcenter.org/reports/T2_QC.html]
- [O*NET Tools and Technology: A Synopsis of Data Development Procedures](https://www.onetcenter.org/reports/T2Development.html) [https://www.onetcenter.org/reports/T2Development.html]
- [Tools and Technology Search](https://www.onetcenter.org/reports/T2_Search.html) [https://www.onetcenter.org/reports/T2_Search.html]

File Structure Changes:

Release Number	Description of Change
23.2	Added as a new file
23.3 - 28.2	No structure changes

Data Example - Tools Used:

O*NET-SOC Code	Example	Commodity Code	Commodity Title
11-2011.00	Computer data input scanners	43211711	Scanners
11-2011.00	Desktop computers	43211507	Desktop computers
11-2011.00	Handheld computers	43211715	Portable data input terminals
11-2011.00	Laptop computers	43211503	Notebook computers
11-2011.00	Laser facsimile machines	44101508	Laser fax machine

UNSPSC Reference

Purpose: Provide relevant aspects of the UNSPSC taxonomy.

File Name: UNSPSC Reference.txt

Structure and Description:

Column	Type	Column Content
Commodity Code	Integer(8)	UNSPSC commodity code
Commodity Title	Character Varying(150)	UNSPSC commodity title
Class Code	Integer(8)	UNSPSC class code
Class Title	Character Varying(150)	UNSPSC class title
Family Code	Integer(8)	UNSPSC family code
Family Title	Character Varying(150)	UNSPSC family title
Segment Code	Integer(8)	UNSPSC segment code
Segment Title	Character Varying(150)	UNSPSC segment title

This file contains a listing of commodities in the United Nations Standard Products and Services Code (UNSPSC), version 23.0701. The UNSPSC is a four-level taxonomy for the classification of products and services, provided by the [United Nations Development Programme](http://www.unspsc.org/) [http://www.unspsc.org/]. In the taxonomy, the Segment is the most general element and the Commodity is the most specific. One example is listed below:

Segment:	43000000	Information Technology Broadcasting and Telecommunications
Family:	43230000	Software
Class:	43232100	Content authoring and editing software
Commodity:	43232104	Word processing software

Each technology or tool example is classified under this taxonomy; the “Commodity Code” and “Commodity Title” columns in the [Technology Skills](#) and [Tools Used](#) files can be used as a cross-reference into this file.

The file is displayed in 8 tab delimited fields with the columns named Commodity Code, Commodity Title, Class Code, Class Title, Family Code, Family Title, Segment Code, and Segment Title. The 8 fields are represented by one row. There are a total of 4,262 rows of data in this file.

For more information, see:

- [O*NET Center Tools and Technology Quality Control Processes](https://www.onetcenter.org/reports/T2_QC.html) [https://www.onetcenter.org/reports/T2_QC.html]
- [O*NET Tools and Technology: A Synopsis of Data Development Procedures](https://www.onetcenter.org/reports/T2Development.html) [https://www.onetcenter.org/reports/T2Development.html]
- [Identification of “Hot Technologies” within the O*NET® System](https://www.onetcenter.org/reports/Hot_Technologies.html) [https://www.onetcenter.org/reports/Hot_Technologies.html]

File Structure Changes:

Release Number	Description of Change
20.1	Added as a new file
20.2 - 28.2	No structure changes

Data Example - UNSPSC Reference:

Commodity Code	Commodity Title	Class Code	Class Title	Family Code	Family Title	Segment Code	Segment Title
12131704	Explosive initiators	12131700	Igniters	12130000	Explosive materials	12000000	Chemicals including Bio Chemicals and Gas Materials
12131707	Lighters	12131700	Igniters	12130000	Explosive materials	12000000	Chemicals including Bio Chemicals and Gas Materials
14111513	Ledger paper	14111500	Printing and writing paper	14110000	Paper products	14000000	Paper Materials and Products
14111802	Receipts or receipt books	14111800	Business use papers	14110000	Paper products	14000000	Paper Materials and Products

Work Activities

Work Activities

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Work Activity ratings.

File Name: Work Activities.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Not Relevant	Character(1)	Not relevant for the occupation (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Work Activity data associated with each O*NET-SOC occupation. It is displayed in 13 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Not Relevant, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 13 fields are represented by one row. There are a total of 71,586 rows of data in this file.

For more information, see:

- [O*NET Work Activities Project Technical Report](https://www.onetcenter.org/reports/DWA_2014.html) [https://www.onetcenter.org/reports/DWA_2014.html]

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, and Not Relevant
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Work Activities:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Not Relevant	Date	Domain Source
31-9099.02	4.A.1.a.1	Getting Information	IM	3.92	26	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.1.a.1	Getting Information	LV	3.50	26	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
31-9099.02	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings	IM	4.50	26	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings	LV	5.15	26	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
31-9099.02	4.A.1.b.1	Identifying Objects, Actions, and Events	IM	4.35	26	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.1.b.1	Identifying Objects, Actions, and Events	LV	4.88	26	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
31-9099.02	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	IM	4.60	25	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.1.b.2	Inspecting Equipment, Structures, or Materials	LV	4.46	26	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
31-9099.02	4.A.1.b.3	Estimating the Quantifiable Characteristics of Products, Events, or Information	IM	3.32	25	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.1.b.3	Estimating the Quantifiable Characteristics of Products, Events, or Information	LV	3.31	26	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert
31-9099.02	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	IM	3.38	24	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
31-9099.02	4.A.2.a.1	Judging the Qualities of Objects, Services, or People	LV	3.44	25	n/a	n/a	n/a	n/a	N	08/2023	Occupational Expert

IWA Reference

Purpose: Provide each Intermediate Work Activity.

File Name: IWA Reference.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
IWA ID	Character Varying(20)	Identifies each Intermediate Work Activity
IWA Title	Character Varying(150)	Intermediate Work Activity statement

This file contains each Intermediate Work Activity and its corresponding O*NET Work Activity element ID. Every IWA is linked to exactly one Work Activity from the O*NET Content Model. IWAs are linked to one or more DWAs; see the [DWA Reference](#) file for these links.

The file is displayed in three tab delimited fields with the columns named Element ID, IWA ID, and IWA Title. The three fields are represented by one row. There are a total of 332 rows of data in this file.

For more information, see:

- [O*NET Work Activities Project Technical Report](https://www.onetcenter.org/reports/DWA_2014.html) [https://www.onetcenter.org/reports/DWA_2014.html]

File Structure Changes:

Release Number	Description of Change
18.1	Added as a new file
19.0 - 28.2	No structure changes

Data Example - IWA Reference:

Element ID	IWA ID	IWA Title
4.A.1.a.1	4.A.1.a.1.I01	Study details of artistic productions.
4.A.1.a.1	4.A.1.a.1.I02	Read documents or materials to inform work processes.
4.A.2.b.2	4.A.2.b.2.I14	Design industrial systems or equipment.
4.A.4.c.2	4.A.4.c.2.I01	Perform recruiting or hiring activities.

DWA Reference

Purpose: Provide each Detailed Work Activity.

File Name: DWA Reference.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
IWA ID	Character Varying(20)	Identifies each Intermediate Work Activity (<i>see IWA Reference</i>)
DWA ID	Character Varying(20)	Identifies each Detailed Work Activity
DWA Title	Character Varying(150)	Detailed Work Activity statement

This file contains each Detailed Work Activity and its corresponding GWA and IWA identifiers. Each DWA is linked to exactly one IWA, which in turn is linked to exactly one Work Activity from the O*NET Content Model. See [Content Model Reference](#) and [IWA Reference](#) for information about these higher-level elements. Each DWA is linked to multiple task statements; see [Tasks to DWAs](#) for these links.

The file is displayed in four tab delimited fields with the columns named Element ID, IWA ID, DWA ID, and DWA Title. The four fields are represented by one row. There are a total of 2,087 rows of data in this file.

For more information, see:

- [O*NET Work Activities Project Technical Report](https://www.onetcenter.org/reports/DWA_2014.html) [https://www.onetcenter.org/reports/DWA_2014.html]
- [Ranking Detailed Work Activities \(DWAs\) Within O*NET® Occupational Profiles](https://www.onetcenter.org/reports/DWA_Ranking.html) [https://www.onetcenter.org/reports/DWA_Ranking.html]

File Structure Changes:

Release Number	Description of Change
18.1	Added as a new file
19.0 - 28.2	No structure changes

Data Example - DWA Reference:

Element ID	IWA ID	DWA ID	DWA Title
4.A.1.a.1	4.A.1.a.1.I01	4.A.1.a.1.I01.D01	Review art or design materials.
4.A.1.a.1	4.A.1.a.1.I01	4.A.1.a.1.I01.D02	Study details of musical compositions.
4.A.2.b.2	4.A.2.b.2.I14	4.A.2.b.2.I14.D06	Design control systems for mechanical or other equipment.
4.A.4.b.6	4.A.4.b.6.I09	4.A.4.b.6.I09.D03	Advise others on health and safety issues.

Tasks to DWAs

Purpose: Provide a mapping of task statements to Detailed Work Activities.

File Name: Tasks to DWAs.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Task ID	Integer(8)	Identifies each task (<i>see Task Statements</i>)
DWA ID	Character Varying(20)	Identifies each Detailed Work Activity (<i>see DWA Reference</i>)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file maps each Detailed Work Activity (DWA) to the task statements, and consequently to the O*NET-SOC occupations, requiring that activity. Each DWA is mapped to multiple task statements, and each referenced task statement is mapped to one or more DWAs.

The file is displayed in five tab delimited fields with the columns named O*NET-SOC Code, Task ID, DWA ID, Date, and Domain Source. The five fields are represented by one row. There are a total of 23,703 rows of data in this file.

For more information, see:

- [O*NET Work Activities Project Technical Report](https://www.onetcenter.org/reports/DWA_2014.html) [https://www.onetcenter.org/reports/DWA_2014.html]

File Structure Changes:

Release Number	Description of Change
18.1	Added as a new file
19.0 - 28.2	No structure changes

Data Example - Tasks to DWAs:

O*NET-SOC Code	Task ID	DWA ID	Date	Domain Source
11-9199.08	15781	4.A.2.a.3.I03.D05	03/2014	Analyst
11-9199.08	15782	4.A.1.a.2.I03.D04	03/2014	Analyst
11-9199.08	15783	4.A.2.b.2.I19.D04	03/2014	Analyst
11-9199.08	15784	4.A.1.a.2.I02.D05	03/2014	Analyst
11-9199.08	15785	4.A.2.b.2.I02.D02	03/2014	Analyst

Work Context

Work Context

Purpose: Provide a mapping of O*NET-SOC codes (occupations) to Work Context ratings.

File Name: Work Context.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Percent frequency category (<i>see Work Context Categories</i>)
Data Value	Float(5,2)	Rating associated with the O*NET-SOC occupation
N	Integer(4)	Sample size
Standard Error	Float(7,4)	Standard Error
Lower CI Bound	Float(7,4)	Lower 95% confidence interval bound
Upper CI Bound	Float(7,4)	Upper 95% confidence interval bound
Recommend Suppress	Character(1)	Low precision indicator (Y=yes, N=no)
Not Relevant	Character(1)	Not relevant for the occupation (Y=yes, N=no)
Date	Character(7)	Date when data was updated
Domain Source	Character Varying(30)	Source of the data

This file contains the Content Model Work Context data associated with each O*NET-SOC occupation. It is displayed in 14 tab delimited fields and identified using the column names provided above. Item rating level metadata is provided in columns named N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, Not Relevant, Date, and Domain Source. Refer to [Appendix 2, Item Rating Level Statistics - Incumbent](#) for additional information on these items. The 14 fields are represented by one row. There are a total of 289,173 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0	Date and Source columns added
5.1	Columns added for N, Standard Error, Lower CI Bound, Upper CI Bound, Recommend Suppress, and Not Relevant
6.0 - 28.1	No structure changes
28.2	Standard Error, Lower CI Bound, Upper CI Bound expanded from 2 decimal places to 4

Data Example - Work Context:

O*NET-SOC Code	Element ID	Element Name	Scale ID	Category	Data Value	N	Standard Error	Lower CI Bound	Upper CI Bound	Recommend Suppress	Not Relevant	Date	Domain Source
11-3111.00	4.C.3.d.8	Duration of Typical Work Week	CT	n/a	2.67	21	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
11-3111.00	4.C.3.d.8	Duration of Typical Work Week	CTP	1	0.00	21	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
11-3111.00	4.C.3.d.8	Duration of Typical Work Week	CTP	2	33.33	21	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert
11-3111.00	4.C.3.d.8	Duration of Typical Work Week	CTP	3	66.67	21	n/a	n/a	n/a	n/a	n/a	08/2023	Occupational Expert

Work Context Categories

Purpose: Provide description of Work Context categories.

File Name: Work Context Categories.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Category	Integer(3)	Category value associated with element
Category Description	Character Varying(1000)	Detail description of category associated with element

This file contains the categories associated with the Work Context content area. Categories for the following scales are included: Context (CXP) and Context Category (CTP). The file includes categories utilized in the data collection survey where the category descriptions are variable and item specific.

The file is displayed in five tab delimited fields with the columns named Element ID, Element Name, Scale ID, Category, and Category Description. The five fields are represented by one row. There are a total of 281 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
9.0	Added as a new file
10.0 - 28.2	No structure changes

Data Example - Work Context Categories:

Element ID	Element Name	Scale ID	Category	Category Description
4.C.1.a.2.1	Face-to-Face Discussions	CXP	1	Never
4.C.1.a.2.1	Face-to-Face Discussions	CXP	2	Once a year or more but not every month
4.C.1.a.2.1	Face-to-Face Discussions	CXP	3	Once a month or more but not every week
4.C.1.a.2.1	Face-to-Face Discussions	CXP	4	Once a week or more but not every day
4.C.1.a.2.1	Face-to-Face Discussions	CXP	5	Every day
4.C.1.a.4	Contact With Others	CXP	1	No contact with others
4.C.1.a.4	Contact With Others	CXP	2	Occasional contact with others
4.C.1.a.4	Contact With Others	CXP	3	Contact with others about half the time
4.C.1.a.4	Contact With Others	CXP	4	Contact with others most of the time
4.C.1.a.4	Contact With Others	CXP	5	Constant contact with others

Occupation Titles

Occupation Data

Purpose: Provide O*NET-SOC codes, titles, and descriptions.

File Name: Occupation Data.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code
Title	Character Varying(150)	O*NET-SOC Title
Description	Character Varying(1000)	O*NET-SOC Description

This file contains each O*NET-SOC code, occupational title, and definition/description.

The file is displayed in three tab delimited fields with the columns named O*NET-SOC Code, Title, and Description. The three fields are represented by one row. There are a total of 1,016 rows of data in this file.

For more information, see:

- [Updating the O*NET-SOC Taxonomy: Incorporating the 2010 SOC Structure](https://www.onetcenter.org/reports/Taxonomy2010.html) [https://www.onetcenter.org/reports/Taxonomy2010.html]

File Structure Changes:

Release Number	Description of Change
5.0 - 28.2	No structure changes

Data Example - Occupation Data:

O*NET-SOC Code	Title	Description
11-9041.01	Biofuels/Biodiesel Technology and Product Development Managers	Define, plan, or execute biofuels/biodiesel research programs that evaluate alternative feedstock and process technologies with near-term commercial potential.
17-2072.00	Electronics Engineers, Except Computer	Research, design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use employing knowledge of electronic theory and materials properties. Design electronic circuits and components for use in fields such as telecommunications, aerospace guidance and propulsion control, acoustics, or instruments and controls.
19-4031.00	Chemical Technicians	Conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.
45-4011.00	Forest and Conservation Workers	Under supervision, perform manual labor necessary to develop, maintain, or protect areas such as forests, forested areas, woodlands, wetlands, and rangelands through such activities as raising and transporting seedlings; combating insects, pests, and diseases harmful to plant life; and building structures to control water, erosion, and leaching of soil. Includes forester aides, seedling pullers, tree planters, and gatherers of nontimber forestry products such as pine straw.
51-8012.00	Power Distributors and Dispatchers	Coordinate, regulate, or distribute electricity or steam.

Alternate Titles

Purpose: Provide alternate occupational titles for O*NET-SOC occupations.

File Name: Alternate Titles.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Alternate Title	Character Varying(250)	Alternate occupational title
Short Title	Character Varying(150)	Short version of alternate title (if applicable)
Source(s)	Character Varying(50)	List of source codes — see below

This file contains alternate, or "lay", occupational titles for the O*NET-SOC classification system. The file was developed to improve keyword searches in several Department of Labor internet applications (i.e., Career InfoNet, O*NET OnLine, and O*NET Code Connector). The file contains occupational titles from existing occupational classification systems, as well as from other diverse sources. When a title contains acronyms, abbreviations, or jargon, the "Short Title" column contains the brief version of the full title. The "Source(s)" column contains a comma delimited list of codes which indicate the source of the title information; the codes are identified below:

01	Associations [i.e., National Retail Federation, Environmental Career Centers (ECC), etc.]
02	Incumbent Data – O*NET Data Collection
03	Occupational Code Assignment (OCA)
04	SOC (i.e., SOC Index, SOC Volume 2, etc.)
05	State Agencies
06	US Bureau of Census (e.g., Census Index)
07	USDOL – BLS (e.g., IT to SOC)
08	USDOL – ETA (i.e., OPDER, OATELS, ACINET/Fu Associates, DOT, O*NET Center, etc.)
09	USDOL – User input, web applications (Code Connector, OnLine, and ACINET)
10	Employer Job Postings

The file is displayed in four tab delimited fields with the columns named O*NET-SOC Code, Alternate Title, Short Title, and Source(s). The four fields are represented by one row. There are a total of 55,094 rows of data in this file.

For more information, see:

- [O*NET Alternate Titles Procedures](https://www.onetcenter.org/reports/AltTitles.html) [https://www.onetcenter.org/reports/AltTitles.html]
- [A Weighted O*NET Keyword Search \(WWS\)](https://www.onetcenter.org/reports/WWS.html) [https://www.onetcenter.org/reports/WWS.html]
- [Military Transition Search \(as used in My Next Move for Veterans\)](https://www.onetcenter.org/reports/MilitarySearch.html) [https://www.onetcenter.org/reports/MilitarySearch.html]

File Structure Changes:

Release Number	Description of Change
20.1	Added as a new file

Release Number	Description of Change
20.2 - 21.3	No structure changes
22.0	increased "Alternate Title" column from 150 to 250 characters
22.1 - 28.2	No structure changes

Data Example - Alternate Titles:

O*NET-SOC Code	Alternate Title	Short Title	Source(s)
29-2099.00	Sleep Technician	n/a	09

Sample of Reported Titles

Purpose: Provide job titles reported during O*NET data collection.

File Name: Sample of Reported Titles.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Reported Job Title	Character Varying(150)	Title from incumbents or occupational experts
Shown in My Next Move	Character(1)	Whether title is shown on My Next Move career page (Y=yes, N=no)

This file contains job titles frequently reported by incumbents and occupational experts on data collection surveys. These titles are displayed on occupational reports in the O*NET OnLine and O*NET Code Connector web applications; up to 10 titles for each occupation are displayed and included in this file. Up to 4 titles are also displayed in My Next Move, My Next Move for Veterans, and Mi Próximo Paso; the titles shown in these applications are marked with a Y in the “Shown in My Next Move” column.

The file is displayed in three tab delimited fields with the columns named O*NET-SOC Code, Reported Job Title, and Shown in My Next Move. The three fields are represented by one row. There are a total of 7,706 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
20.1	Added as a new file
20.2 - 28.2	No structure changes

Data Example - Sample of Reported Titles:

O*NET-SOC Code	Reported Job Title	Shown in My Next Move
17-2071.00	Circuits Engineer	N
17-2071.00	Design Engineer	Y
17-2071.00	Electrical Controls Engineer	N
17-2071.00	Electrical Design Engineer	Y
17-2071.00	Electrical Engineer	Y
17-2071.00	Electrical Project Engineer	N
17-2071.00	Engineer	N
17-2071.00	Instrumentation and Electrical Reliability Engineer (I&E Reliability Engineer)	N

Related Occupations and Related Domains

Related Occupations

Purpose: Provide related occupation links between O*NET-SOC occupations.

File Name: Related Occupations.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Related O*NET-SOC Code	Character(10)	Related O*NET-SOC code mapping (<i>see Occupation Data</i>)
Relatedness Tier	Character Varying(50)	Categories indicating level of relatedness
Index	Integer(3)	Order of related code mappings based on expert review

For each O*NET-SOC code included, 10 primary and 10 supplemental related O*NET-SOC codes are listed. The related occupations in this file are developed using an approach which includes three important contributors to occupational similarity: what people in the occupations do, what they know, and what they are called.

The “Relatedness Tier” column assigns one of three categories to each link:

- **Primary-Short** — Five most strongly related occupations after expert review.
- **Primary-Long** — 6th to 10th most strongly related occupations after expert review.
- **Supplemental** — 11th to 20th most strongly related occupations after expert review.

The file is displayed in four tab delimited fields with the columns named O*NET-SOC Code, Related O*NET-SOC Code, Relatedness Tier, and Index. The four fields are represented by one row. There are a total of 18,460 rows of data in this file.

For more information, see:

- [Developing Related Occupations for the O*NET Program](https://www.onetcenter.org/reports/Related_2022.html) [https://www.onetcenter.org/reports/Related_2022.html]
- [Updates to Related Occupations for the O*NET Program Using the O*NET 28.0 Database](https://www.onetcenter.org/reports/Related_2024.html) [https://www.onetcenter.org/reports/Related_2024.html]

File Structure Changes:

Release Number	Description of Change
26.3	Added as a new file
27.0 - 28.2	No structure changes

Data Example - Related Occupations:

O*NET-SOC Code	Related O*NET-SOC Code	Relatedness Tier	Index
17-1011.00	17-1012.00	Primary-Short	1
17-1011.00	27-1025.00	Primary-Short	2
17-1011.00	11-9021.00	Primary-Short	3
17-1011.00	17-2051.00	Primary-Short	4
17-1011.00	47-4011.00	Primary-Short	5
17-1011.00	11-9041.00	Primary-Long	6
17-1011.00	17-2112.00	Primary-Long	7

Abilities to Work Activities

Purpose: Provide linkages between abilities and relevant work activities.

File Name: Abilities to Work Activities.txt

Structure and Description:

Column	Type	Column Content
Abilities Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Abilities Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Work Activities Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Work Activities Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)

This file contains linkages between abilities and relevant work activities. Occupation-specific ratings for the listed elements may be found in the [Abilities](#) and [Work Activities](#) files. Linkages were developed by a panel of experienced industrial/organizational psychologists, and are used in the development of analyst occupational abilities ratings.

The file is displayed in four tab delimited fields with the columns named Abilities Element ID, Abilities Element Name, Work Activities Element ID, and Work Activities Element Name. The four fields are represented by one row. There are a total of 381 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Abilities Ratings: Procedures Update](https://www.onetcenter.org/reports/AnalystProcUpdate.html) [https://www.onetcenter.org/reports/AnalystProcUpdate.html]

File Structure Changes:

Release Number	Description of Change
24.2	Added as a new file
24.3 - 28.2	No structure changes

Data Example - Abilities to Work Activities:

Abilities Element ID	Abilities Element Name	Work Activities Element ID	Work Activities Element Name
1.A.1.a.1	Oral Comprehension	4.A.1.a.1	Getting Information
1.A.1.a.1	Oral Comprehension	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings
1.A.1.a.1	Oral Comprehension	4.A.1.b.1	Identifying Objects, Actions, and Events
1.A.1.a.1	Oral Comprehension	4.A.2.a.1	Judging the Qualities of Objects, Services, or People
1.A.1.a.1	Oral Comprehension	4.A.2.a.2	Processing Information

Abilities to Work Context

Purpose: Provide linkages between abilities and relevant work context.

File Name: Abilities to Work Context.txt

Structure and Description:

Column	Type	Column Content
Abilities Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Abilities Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Work Context Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Work Context Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)

This file contains linkages between abilities and relevant work context. Occupation-specific ratings for the listed elements may be found in the [Abilities](#) and [Work Context](#) files. Linkages were developed by a panel of experienced industrial/organizational psychologists, and are used in the development of analyst occupational abilities ratings.

The file is displayed in four tab delimited fields with the columns named Abilities Element ID, Abilities Element Name, Work Context Element ID, and Work Context Element Name. The four fields are represented by one row. There are a total of 139 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Abilities Ratings: Procedures Update](https://www.onetcenter.org/reports/AnalystProcUpdate.html) [https://www.onetcenter.org/reports/AnalystProcUpdate.html]

File Structure Changes:

Release Number	Description of Change
24.2	Added as a new file
24.3 - 28.2	No structure changes

Data Example - Abilities to Work Context:

Abilities Element ID	Abilities Element Name	Work Context Element ID	Work Context Element Name
1.A.1.a.1	Oral Comprehension	4.C.1.a.2.c	Public Speaking
1.A.1.a.1	Oral Comprehension	4.C.1.a.2.f	Telephone
1.A.1.a.1	Oral Comprehension	4.C.1.a.2.l	Face-to-Face Discussions
1.A.1.a.1	Oral Comprehension	4.C.1.a.4	Contact With Others
1.A.1.a.1	Oral Comprehension	4.C.1.b.1.e	Work With Work Group or Team

Skills to Work Activities

Purpose: Provide linkages between skills and relevant work activities.

File Name: Skills to Work Activities.txt

Structure and Description:

Column	Type	Column Content
Skills Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Skills Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Work Activities Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Work Activities Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)

This file contains linkages between skills and relevant work activities. Occupation-specific ratings for the listed elements may be found in the [Skills](#) and [Work Activities](#) files. Linkages were developed by a panel of experienced industrial/organizational psychologists, and are used in the development of analyst occupational skills ratings.

The file is displayed in four tab delimited fields with the columns named Skills Element ID, Skills Element Name, Work Activities Element ID, and Work Activities Element Name. The four fields are represented by one row. There are a total of 232 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Skills Ratings: Procedures Update](https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html) [https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html]

File Structure Changes:

Release Number	Description of Change
24.2	Added as a new file
24.3 - 28.2	No structure changes

Data Example - Skills to Work Activities:

Skills Element ID	Skills Element Name	Work Activities Element ID	Work Activities Element Name
2.A.1.a	Reading Comprehension	4.A.1.a.1	Getting Information
2.A.1.a	Reading Comprehension	4.A.1.a.2	Monitoring Processes, Materials, or Surroundings
2.A.1.a	Reading Comprehension	4.A.1.b.1	Identifying Objects, Actions, and Events
2.A.1.a	Reading Comprehension	4.A.2.a.1	Judging the Qualities of Objects, Services, or People
2.A.1.a	Reading Comprehension	4.A.2.a.2	Processing Information

Skills to Work Context

Purpose: Provide linkages between skills and relevant work context.

File Name: Skills to Work Context.txt

Structure and Description:

Column	Type	Column Content
Skills Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Skills Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Work Context Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Work Context Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)

This file contains linkages between skills and relevant work context. Occupation-specific ratings for the listed elements may be found in the [Skills](#) and [Work Context](#) files. Linkages were developed by a panel of experienced industrial/organizational psychologists, and are used in the development of analyst occupational skills ratings.

The file is displayed in four tab delimited fields with the columns named Skills Element ID, Skills Element Name, Work Context Element ID, and Work Context Element Name. The four fields are represented by one row. There are a total of 96 rows of data in this file.

For more information, see:

- [O*NET Analyst Occupational Skills Ratings: Procedures Update](https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html) [https://www.onetcenter.org/reports/AOSkills_ProcUpdate.html]

File Structure Changes:

Release Number	Description of Change
24.2	Added as a new file
24.3 - 28.2	No structure changes

Data Example - Skills to Work Context:

Skills Element ID	Skills Element Name	Work Context Element ID	Work Context Element Name
2.A.1.a	Reading Comprehension	4.C.1.a.2.h	Electronic Mail
2.A.1.b	Active Listening	4.C.1.a.2.c	Public Speaking
2.A.1.b	Active Listening	4.C.1.a.2.f	Telephone
2.A.1.b	Active Listening	4.C.1.a.2.l	Face-to-Face Discussions
2.A.1.b	Active Listening	4.C.1.a.4	Contact With Others

Data Collection

Content Model Reference

Purpose: Provide O*NET Content Model elements.

File Name: Content Model Reference.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position
Element Name	Character Varying(150)	Content Model Element Name
Description	Character Varying(1500)	Content Model Element Description

This file contains the Content Model elements and descriptions.

The file is displayed in three tab delimited fields with the columns named Element ID, Element Name, and Description. The three fields are represented by one row. There are a total of 627 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0 - 28.2	No structure changes

Data Example - Content Model Reference:

Element ID	Element Name	Description
1	Worker Characteristics	Worker Characteristics
1.A	Abilities	Enduring attributes of the individual that influence performance
1.A.1	Cognitive Abilities	Abilities that influence the acquisition and application of knowledge in problem solving
1.A.1.a	Verbal Abilities	Abilities that influence the acquisition and application of verbal information in problem solving
1.A.1.a.1	Oral Comprehension	The ability to listen to and understand information and ideas presented through spoken words and sentences.

Occupation Level Metadata

Purpose: Provide O*NET-SOC Occupational Level Metadata associated with the incumbent data collection.

File Name: Occupation Level Metadata.txt

Structure and Description:

Column	Type	Column Content
O*NET-SOC Code	Character(10)	O*NET-SOC Code (<i>see Occupation Data</i>)
Item	Character Varying(150)	Occupation level statistics
Response	Character Varying(75)	Type of response
N	Integer(4)	Sample size for occupation
Percent	Float(4,1)	Percentage of responses
Date	Character(7)	Date when data was updated

This file contains occupational level metadata variables associated with data collection statistics. Refer to [Appendix 3, Key to Occupation Level Metadata](#) for additional descriptions of the data provided in this file.

The file is displayed in six tab delimited fields with the columns named O*NET-SOC Code, Item, Response, N, Percent, and Date. The six fields are represented by one row. There are a total of 31,554 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.1	Added as a new file
6.0 - 20.3	No structure changes
21.0	Items added and renamed; see Appendix 3, Key to Occupation Level Metadata
21.1 - 28.2	No structure changes

Data Example - Occupation Level Metadata:

O*NET-SOC Code	Item	Response	N	Percent	Date
51-9161.00	Data Collection Mode	Paper	101	64.4	08/2023
51-9161.00	Data Collection Mode	Web	101	35.6	08/2023
51-9161.00	Employee Completeness Rate	n/a	n/a	89.4	08/2023
51-9161.00	Employee Response Rate	n/a	n/a	45.6	08/2023
51-9161.00	Establishment Eligibility Rate	n/a	n/a	79.9	08/2023
51-9161.00	Establishment Response Rate	n/a	n/a	30.4	08/2023
51-9161.00	How Long at Current Job	1-5 Years	101	30.7	08/2023
51-9161.00	How Long at Current Job	10 Years or More	101	50.5	08/2023
51-9161.00	How Long at Current Job	6-9 Years	101	13.9	08/2023
51-9161.00	How Long at Current Job	<1 Year	101	5.0	08/2023
51-9161.00	How Long at Current Job	Missing	101	0.0	08/2023
51-9161.00	Industry Division (Major Group Codes (SIC) within Division in parentheses)	Agriculture, Forestry, Fishing (01-09)	101	0.0	08/2023
51-9161.00	Industry Division (Major Group Codes (SIC) within Division in parentheses)	Construction (15-17)	101	0.0	08/2023
51-9161.00	Industry Division (Major Group Codes (SIC) within Division in parentheses)	Financial, Insurance and Real Estate (60-67)	101	0.0	08/2023
51-9161.00	Industry Division (Major Group Codes (SIC) within Division in parentheses)	Manufacturing (20-39)	101	100.0	08/2023
51-9161.00	Industry Division (Major Group Codes (SIC) within Division in parentheses)	Mining (10-14)	101	0.0	08/2023

Level Scale Anchors

Purpose: Provide descriptions of O*NET Level Scale Anchors.

File Name: Level Scale Anchors.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)
Anchor Value	Integer(3)	Anchor value associated with element
Anchor Description	Character Varying(1000)	Detail description of anchor associated with element

This file contains the scale anchors associated with the following four content areas – 1) Abilities, 2) Knowledge, 3) Skills, and 4) Work Activities. It includes all scale anchors utilized in the data collection survey where the scale anchors are variable and item specific. Scale anchors are not included for those survey items where the scale anchors are fixed. This includes the five-point importance scale and the seven-point task frequency scale. (Note: See [O*NET Data Questionnaires \[https://www.onetcenter.org/ombclearance.html\]](https://www.onetcenter.org/ombclearance.html)).

The file is displayed in five tab delimited fields with the columns named Element ID, Element Name, Scale ID, Anchor Value, and Anchor Description. The five fields are represented by one row. There are a total of 483 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.1	Added as a new file
6.0	Added Scale ID column
7.0 - 8.0	No structure changes
9.0	The data for Education, Training, and Experience and Work Context were moved into their own files for data clarity purposes.
10.0 - 28.2	No structure changes

Data Example - Level Scale Anchors:

Element ID	Element Name	Scale ID	Anchor Value	Anchor Description
1.A.1.a.1	Oral Comprehension	LV	2	Understand a television commercial
1.A.1.a.1	Oral Comprehension	LV	4	Understand a coach's oral instructions for a sport
1.A.1.a.1	Oral Comprehension	LV	6	Understand a lecture on advanced physics
1.A.1.a.2	Written Comprehension	LV	2	Understand signs on the highway
1.A.1.a.2	Written Comprehension	LV	4	Understand an apartment lease
1.A.1.a.2	Written Comprehension	LV	6	Understand an instruction book on repairing Artificial Intelligence systems
1.A.1.a.3	Oral Expression	LV	2	Place an order at a restaurant drive-thru
1.A.1.a.3	Oral Expression	LV	4	Give instructions to a lost motorist
1.A.1.a.3	Oral Expression	LV	6	Explain advanced principles of genetics to college freshmen
1.A.1.a.4	Written Expression	LV	1	Write a note to remind someone to take food out of the freezer
1.A.1.a.4	Written Expression	LV	4	Write a job recommendation for a subordinate

Scales Reference

Purpose: Provide a reference to the scale names and values.

File Name: Scales Reference.txt

Structure and Description:

Column	Type	Column Content
Scale ID	Character Varying(3)	Scale ID
Scale Name	Character Varying(50)	Scale Name
Minimum	Integer(1)	Scale Minimum
Maximum	Integer(3)	Scale Maximum

This file contains the Scale information by which the raw values are measured.

The file is displayed in four tab delimited fields with the columns named Scale ID, Scale Name, Minimum, and Maximum. The four fields are represented by one row. There are a total of 29 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0 - 28.2	No structure changes

Data Example - Scales Reference:

Scale ID	Scale Name	Minimum	Maximum
CT	Context	1	3
CTP	Context (Categories 1-3)	0	100
CX	Context	1	5
CXP	Context (Categories 1-5)	0	100
IM	Importance	1	5
LV	Level	0	7
OJ	On-The-Job Training (Categories 1-9)	0	100
PT	On-Site Or In-Plant Training (Categories 1-9)	0	100
RL	Required Level Of Education (Categories 1-12)	0	100
RW	Related Work Experience (Categories 1-11)	0	100

Survey Booklet Locations

Purpose: Provide survey item numbers for O*NET Content Model elements.

File Name: Survey Booklet Locations.txt

Structure and Description:

Column	Type	Column Content
Element ID	Character Varying(20)	Content Model Outline Position (<i>see Content Model Reference</i>)
Element Name	Character Varying(150)	Content Model Element Name (<i>see Content Model Reference</i>)
Survey Item Number	Character Varying(4)	Survey Booklet Location Number
Scale ID	Character Varying(3)	Scale ID (<i>see Scales Reference</i>)

This file contains the Content Model elements that have corresponding survey item numbers in the Survey Booklet.

Each survey item number corresponds to a survey question in the [O*NET Questionnaires](https://www.onetcenter.org/ombclearance.html) [https://www.onetcenter.org/ombclearance.html]. The values for incumbent data categories are percentage ratings corresponding to survey question options. Match the element ID(s) from data files to a survey item number using this file.

The file is displayed in four tab delimited fields with the columns named Element ID, Element Name, Survey Item Number, and Scale ID. The four fields are represented by one row. There are a total of 227 rows of data in this file.

File Structure Changes:

Release Number	Description of Change
5.0	Added as a new file
5.1 - 12.0	No structure changes
13.0	Added Scale ID column
14.0 - 28.2	No structure changes

Data Example - Survey Booklet Locations:

Element ID	Element Name	Survey Item Number	Scale ID
1.C.1.a	Achievement/Effort	KN40	IM
1.C.1.b	Persistence	KN41	IM
1.C.1.c	Initiative	KN42	IM
1.C.2.b	Leadership	KN43	IM
1.C.3.a	Cooperation	KN44	IM
1.C.3.b	Concern for Others	KN45	IM

Appendices

Appendix 1. Item Rating Level Statistics - Analyst

Rating Level Statistics

For each of the Ability domain and Skills domain elements, additional rating level statistics, such as Standard Error and data flags are included to help provide a description of the quality of the data values. The file has columns to represent these additional values.

The explanations for the Rating Level Statistics columns are explained in the following definitions.

Standard Error - Standard errors were calculated to provide an indication of each estimate's precision. The standard error of the mean (SEM) is the standard deviation of the ratings across analysts divided by the square root of the number of analysts (i.e., eight). Statistics with large standard errors are generally considered less precise than those with small standard errors.

Upper CI Bound and Lower CI Bound - The standard error of the mean (SEM) was used to define a range (confidence interval) around the estimate. The upper and lower bounds of the 95% confidence interval establish this range such that over a large number of sample estimates the probability is .95 that the population mean will be included in a confidence interval of this size. The upper bound of the confidence interval is calculated by taking the SEM and multiplying it by 1.96 and adding that number to the observed mean. The lower bound of the confidence interval is calculated by taking the SEM and multiplying it by 1.96 and subtracting that number from the observed mean.

Recommend Suppress - Users are encouraged to use estimates exhibiting “low precision” with caution and for many applications users are advised to consider suppressing these estimates. Abilities and Skills estimates are considered to have low precision if the standard error is greater than .51. The value of .51 was selected as a suppression criterion because $1.0/1.96 = .5102$. An SEM of $>.51$ means that the upper and lower bounds of the confidence interval are more than 1 scale point away from the observed mean.

Not Relevant –The ability or skill level rating is identified as “not relevant” if 0, 1, or 2 analysts rated importance for that ability ≥ 2 (i.e., six or more analysts rated importance a 1). A value of “Y” indicates 0, 1, or 2 analysts rated importance ≥ 2 . A value of “N” indicates more than 2 analysts rated importance ≥ 2 . Users are encouraged to provide their end-users with an indication that the item level rating is “not relevant” rather than displaying the level value or displaying no level information.

Appendix 2. Item Rating Level Statistics - Incumbent

Rating Level Statistics

For each of the domain elements, additional rating level statistics, such as Standard Error and data flags are included to help provide a description of the quality of the data values. Each of the domain files (Education, Training, and Experience, Knowledge, Tasks, Work Activities, Work Context, and Work Styles) has columns to represent these additional values.

The explanations for the Rating Level Statistics columns are explained in the following definitions.

Standard Error - Standard errors were calculated to provide an indication of each estimate's precision. The standard error is the square root of the variance of the estimate. Statistics with large variances are generally considered less precise than those with small variances.

Upper CI Bound and Lower CI Bound - The standard error was used to define a range (confidence interval) around the estimate. The 95-percent confidence level means that if all possible samples were selected and an estimate of the value and its sampling error were computed for each, then for approximately 95 percent of the samples, the interval would include the "true" average value.

Recommend Suppress - Users are encouraged to use estimates exhibiting "low precision" with caution and for many applications users are advised to consider suppressing these estimates. An estimate is considered to have low precision if any of the following are true: (1) the sample size is less than 10; (2) the variance is 0 and the sample size is less than 15; (3) the relative standard error (RSE) is greater than 0.5. (The RSE of a mean estimate is the ratio of the estimate's standard error to the estimate itself. To calculate the RSE of the estimates expressed as percentages (e.g., the proportion of respondents who indicated they perform a task once per week), the log transformation of the proportion was used.)

Not Relevant – "Level" estimates were flagged as "not relevant" if more than 75% of item respondents to the corresponding "Importance" item rated the item as "not important". Users are encouraged to provide their end-users with an indication that the item level rating is "not relevant" rather than displaying the level value or displaying no level information.

Appendix 3. Key to Occupation Level Metadata

Each O*NET-SOC Code has detailed information associated with the O*NET data collection called Occupation Level Metadata. The name and explanation for each data value in the item column is presented below. The O*NET-SOC Level Sample Distribution Statistics, that are provided in the Percent column of the Occupation Level Metadata file, are unweighted percents. Therefore, these values do not represent the estimated distribution of the O*NET-SOC population.

Data Collection Mode - Incumbents and occupational experts had the option to complete the questionnaire either using a web-based survey or a paper survey. Valid responses are:

- Paper
- Web

Employee Completeness Rate - The employee completeness rate for an occupation is the percentage of total returned non-blank questionnaires that were retained after editing and data cleaning.

Employee Response Rate - The employee response rate is the percentage of eligible employees in the sample who return a non-blank questionnaire.

Establishment Eligibility Rate - The establishment eligibility rate is the percentage of sampled establishments where the target establishment or a similar establishment in the same industry was found to be in operation at the sampled address.

Establishment Response Rate - The establishment response rate is the percentage of sampled eligible establishments for the occupation that agreed to participate.

How Long at Current Job - Incumbents indicated in the background questionnaire how long they had been in their current job. Valid responses are:

- 10 years or more
- 6-9 years
- 1-5 years
- <1 year
- Missing

How Much Experience Performing Work in this Occupation - Occupational experts indicated in the background questionnaire how much experience they have performing work in this occupation. Valid responses are:

- 10+ years
- 5-9 years
- 3-4 years
- 1-2 years
- <1 year
- Never

- Missing

Industry Division (Major Group Codes (SIC) within Division in parentheses) - Each sampled establishment was assigned to one primary industry division in the sampling frame. The Major Industry Group Codes (SIC) within the Division are provided in parentheses. Valid responses are:

- Agriculture, Forestry, Fishing (01 - 09)
- Mining (10 - 14)
- Construction (15 - 17)
- Manufacturing (20 - 39)
- Transportation, Communication, Electric, Gas, and Sanitary Services (40 - 49)
- Wholesale Trade (50 -51)
- Retail Trade (52 - 59)
- Financial, Insurance and Real Estate (60 - 67)
- Services (70 - 89)
- Public Administration (91 - 97)
- Non-classifiable (99)

North American Industry Classification System (NAICS) Sector - Each sampled establishment was assigned to one type of economic activity sector in the sampling frame. Valid responses are:

- Accommodation and food services
- Administrative and support and waste management and remediation services
- Agriculture, forestry, fishing and hunting
- Arts, entertainment, and recreation
- Construction
- Education services
- Finance and insurance
- Health care and social assistance
- Information
- Management of Companies and Enterprises
- Manufacturing
- Mining
- Other services, except public administration
- Professional, Scientific and Technical Services
- Public administration
- Real estate and rental and leasing
- Retail trade
- Transportation and warehousing
- Unclassified
- Utilities
- Wholesale trade

OE Completeness Rate - The OE completeness rate for an occupation is the percentage of total returned non-blank questionnaire sets that were retained after editing and data cleaning.

OE Response Rate - The OE response rate is the percentage of eligible experts selected for the occupation who return a non-blank questionnaire.

SOC Eligibility Rate - The SOC eligibility rate is the percentage of eligible establishments where the target occupation was asked about and present at the sampled address.

Total Completed Questionnaires – Total Completes refers to the total number of incumbents who completed one of the four questionnaire types.

Appendix 4. Content Updates Since Release 4.0

O*NET 28.2 Database

- Related occupations were updated for all 923 data-level occupations.
- 17 new technology skill linkages related to 9 occupations were identified from customer input.
- 6 new tools used linkages related to 2 occupations were identified from customer input.
- Standard Error, Upper CI Bound, and Lower CI Bound metadata fields were expanded from 2 decimal places to 4.

For additional details on the related occupations updates, see [Updates to Related Occupations for the O*NET Program Using the O*NET 28.0 Database](https://www.onetcenter.org/reports/Related_2024.html) [https://www.onetcenter.org/reports/Related_2024.html] in our Reports and Documents area.

Previous releases rounded Standard Error and other metadata to 2 decimal places, resulting in a rounded value of zero when the actual value was very small but greater than zero. This release increases the precision to 4 decimal places, providing additional clarity in these cases.

O*NET 28.1 Database

- RIASEC Occupational Interest Profiles (OIPs) and high-point codes for all 923 data-level occupations were developed using machine learning.
- An updated listing of 162 “Hot Technologies,” based on employer job postings from across all occupations, resulted in 11,400+ occupation linkages.
- Updated “In Demand” technology skill designations, based on employer job postings from within each occupation, led to approximately 2,500 “In Demand” skill linkages across 489 occupations.
- 90+ new technology skill linkages related to 75 occupations were identified from employer job postings.
- 450+ alternate titles related to 237 occupations were added from a review of Registered Apprenticeship Programs (RAPs), customer input, and other sources.
- The Job Zone for 15-1211.00 (Computer Systems Analysts) was revised from Job Zone 3 to Job Zone 4 based on evaluation of contributing data used to assign Job Zones.

To learn more about the successful effort to leverage advances in supervised machine learning to update the vocational interest information in the O*NET System, see: [Using Machine Learning to Develop Occupational Interest Profiles and High-Point Codes for the O*NET System](https://www.onetcenter.org/reports/ML_OIPs.html) [https://www.onetcenter.org/reports/ML_OIPs.html].

O*NET 28.0 Database

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 90 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 90 occupations
- Addition and update of Training and Work Experience and Education data for 90 occupations

- Addition and update of Work Styles data for 90 occupations
- Addition and update of Job Zones data for 90 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 65 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 90 occupations

O*NET 27.3 Database

- 924 technology skill linkages related to 282 occupations were added from employer job postings.

The [*Interests Illustrative Activities*](#) file was also updated to fix a typographical error.

O*NET 27.2 Database

- **Basic Occupational Interests** added to the O*NET Content Model - a set of 41 more detailed and precise interest elements
- New file containing action and object keywords for each general (RIASEC) occupational interest
- New file linking each basic occupational interest to relevant general occupational interests
- New file containing illustrative work activities related to the general and basic occupational interests
- New file containing illustrative occupations linked to the general and basic occupational interests
- 1,995 alternate titles related to 629 occupations were added from employer job postings and customer input.

For additional details on the interests updates, see [Updating Vocational Interests Information for the O*NET Content Model](https://www.onetcenter.org/reports/Voc_Interests.html) [https://www.onetcenter.org/reports/Voc_Interests.html] in our Reports and Documents area. Also see the documentation for each of the new files:

- [*RIASEC Keywords*](#)
- [*Basic Interests to RIASEC*](#)
- [*Interests Illustrative Activities*](#)
- [*Interests Illustrative Occupations*](#)

O*NET 27.1 Database

- 157 technology skills, related to 892 occupations via 10,707 linkages, were identified as “Hot Technologies” using an updated approach.
- 2,515 technology skill linkages were identified as “In Demand” for 478 occupations.
- 641 technology skill linkages related to 215 occupations were added from employer job postings.
- 18 alternate titles related to 13 occupations were added from customer input and other sources.

This release updates the approach to identifying “Hot Technologies” and introduces the concept of “In Demand” technology skills.

- **Hot Technologies** are software and technology requirements most frequently included **across all employer job postings**.
- **In Demand** technology skills are software and technology requirements frequently included in the employer job postings **for a particular occupation**.

The purpose of the two designations is to enable O*NET customers to learn which technology skills employers in the US economy are presently emphasizing and searching for while recruiting employees. For additional details on the Hot Technology and In Demand designations, see [Hot Technologies and In Demand Technology Skills within the O*NET System](https://www.onetcenter.org/reports/Hot_Technologies_Demand.html) [https://www.onetcenter.org/reports/Hot_Technologies_Demand.html] in our Reports and Documents area.

O*NET 27.0 Database

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 80 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 80 occupations
- Addition and update of Training and Work Experience and Education data for 80 occupations
- Addition and update of Work Styles data for 80 occupations
- Addition and update of Job Zones data for 80 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 12 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 80 occupations

O*NET 26.3 Database

- New related occupations were added for all 923 data-level occupations.
- 51 technology skills related to 15 occupations were added from customer input.
- 22 tools used related to 4 occupations were added from customer input.

The newly added [Related Occupations](#) file replaces the “Career Changers Matrix” and “Career Starters Matrix” files, which have been removed from the database. These related occupations are developed using an approach which includes three important contributors to occupational similarity: what people in the occupations do, what they know, and what they are called.

For additional details on the Related Occupations project, see [Developing Related Occupations for the O*NET Program](https://www.onetcenter.org/reports/Related_2022.html) [https://www.onetcenter.org/reports/Related_2022.html] in our Reports and Documents area.

O*NET 26.2 Database

- 1,147 technology skills related to 509 occupations were added or updated by occupational analyst review.
- 671 alternate titles related to 222 occupations were added from professional associations, customer input, and other sources.

O*NET 26.1 Database

- 112 alternate titles related to 13 occupations were added from professional associations and customer input.
- 49 occupations were populated with Job Zone assignments.
- 60 Level Scale Anchor descriptions were updated within the Knowledge and Generalized Work Activities domains.
- 1,900 technology skills related to 586 occupations were added or updated from professional associations, customer input, and other sources.
- 3,127 tools used related to 327 occupations were added or updated from professional associations, customer input, and other sources.
- 20 Content Model element names and descriptions were updated with minor edits.

For additional details on the Level Scale Anchors update, see [O*NET Level Scale Anchor Updates: Knowledge and Generalized Work Activities](https://www.onetcenter.org/reports/Anchors_Update_KG.html) [https://www.onetcenter.org/reports/Anchors_Update_KG.html] in our Reports and Documents area.

This release transitioned technology skills and tools information to an organizing structure based on the latest version of the United Nations Standard Products and Services Code (UNSPSC). For details, see [UNSPSC Reference](#).

In this release, the Content Model Reference file was updated to minimize wording and grammar differences between the O*NET Database and [O*NET Questionnaires](https://www.onetcenter.org/questionnaires.html) [https://www.onetcenter.org/questionnaires.html]. These updates also affected other download files where element names or descriptions are included. For more information on the role of questionnaires in our data collection process, see [O*NET Data Collection Overview](https://www.onetcenter.org/dataCollection.html) [https://www.onetcenter.org/dataCollection.html].

O*NET 26.0 Database

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 100 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 100 occupations
- Addition and update of Training and Work Experience and Education data for 100 occupations
- Addition and update of Work Styles data for 100 occupations
- Addition and update of Job Zones data for 100 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 238 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 402 occupations
- Update of Level Scale Anchors descriptions for 89 anchors in the Abilities and Skills domains

For additional details on the Level Scale Anchors update, see [O*NET Level Scale Anchor Updates: Abilities and Skills Domains](https://www.onetcenter.org/reports/Anchors_Update_AS.html) [https://www.onetcenter.org/reports/Anchors_Update_AS.html] in our Reports and Documents area.

O*NET 25.3 Database

- 907 technology skills related to 141 occupations were updated from employer job postings and other sources. Currently, 182 “hot technologies” are identified. This update includes information linked to 150 occupations which underwent a “spotlight” or detailed review by occupational analysts.
- 252 alternate titles related to 139 occupations were added from employer job postings.

O*NET 25.2 Database

The 25.2 release of the O*NET database includes the identification of technology skills related to distance learning and remote training. During the current COVID pandemic, schools, teachers, students, families, and businesses often rely on a wide variety of emerging technologies to navigate the challenges of decentralized education and work environments. For an initial listing of over 50 related technology skills, see [O*NET Resource Center — Distance Learning & Remote Training](https://www.onetcenter.org/initiatives.html#distance-learning) [https://www.onetcenter.org/initiatives.html#distance-learning].

[O*NET Hot Technologies](https://www.onetonline.org/search/hot_tech/) [https://www.onetonline.org/search/hot_tech/] were also updated in this release, leading to the following database enhancements:

- 1,206 technology skills related to 232 occupations were updated from employer job postings and other sources. Currently, 182 “hot technologies” are identified.
- 15 tools used related to 4 occupations were updated from customer feedback.

O*NET 25.1 Database – Updating the O*NET-SOC Taxonomy

The O*NET-SOC 2019 taxonomy structure has been revised based on the transition to the 2018 SOC. The O*NET 25.1 Database, which incorporates the new O*NET-SOC taxonomy, includes 1,016 occupational titles, 923 of which represent O*NET data-level occupations.

A technical report, [Updating the O*NET-SOC Taxonomy: Incorporating the 2018 SOC Structure](https://www.onetcenter.org/reports/Taxonomy2019.html) [https://www.onetcenter.org/reports/Taxonomy2019.html], is available which describes the new O*NET-SOC 2019 taxonomy structure. The overall relationship between the O*NET-SOC 2019 and the 2018 SOC is summarized. Code, title, or description changes that occurred from transitioning to the new 2018 SOC structure are detailed in the report. The new O*NET-SOC 2019 structure also includes four cybersecurity-related new and emerging occupations.

For a graphical overview of the new structure see: [About the O*NET-SOC 2019 Taxonomy](https://www.onetcenter.org/taxonomy.html#latest) [https://www.onetcenter.org/taxonomy.html#latest]

Data from the O*NET 25.0 database (O*NET-SOC 2010) has been incorporated into the new O*NET-SOC 2019 taxonomy, including the new O*NET-SOC codes, titles, and descriptions. In the 25.1 release, taxonomy-related updates include:

- Addition of 62 O*NET-SOC 2019 occupations
- Update of O*NET-SOC codes, titles, and/or descriptions for 345 occupations
- Addition and update of Task Statements for 127 occupations

- Addition of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 53 occupations
- Addition of Work Styles data for 53 occupations
- Addition of Job Zones data for 53 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 127 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 127 occupations
- Addition and update of Technology Skills and Tools Used for 98 occupations

A total of 874 occupations include data on Knowledge, Skills, Abilities, and other descriptors in this release. 53 of these occupations include data aggregated from one or more predecessor O*NET-SOC 2010 occupations. In these cases, data is marked with “Analyst - Transition” in the Domain Source column. Some ratings, including Education, Training, and Experience ratings, are not available. These occupations will be updated through the O*NET Data Collection program with data from job incumbents and occupation experts, replacing the transitional data in future releases of the O*NET Database.

Apart from the taxonomy changes, alternate titles were added or revised for 370 occupations, as part of the ongoing effort to improve and update the O*NET Database.

Overall, release 25.1 includes the following:

- Codes, titles, and descriptions for 1,016 O*NET-SOC 2019 occupations
- Task statements for 923 O*NET-SOC 2019 occupations in the O*NET Data Collection Plan
- Update of 821 O*NET-SOC 2019 occupations through the O*NET Data Collection program with data from job incumbents and occupational experts
- Addition of transitional data for 53 O*NET-SOC 2019 occupations, based on data previously collected through the O*NET Data Collection program
- Addition and update of Alternate Titles and Sample of Reported Titles for 497 occupations
- Addition and update of Technology Skills and Tools Used for 98 occupations

Release 25.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 100 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 100 occupations
- Addition and update of Training and Work Experience and Education data for 100 occupations
- Addition and update of Work Styles data for 100 occupations
- Addition and update of Job Zones data for 100 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 79 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 245 occupations

Release 24.3 included the following:

- 431 technology skills related to 167 occupations were updated from employer job postings. Currently, 175 “hot technologies” are identified.
- 122 alternate titles related to 80 occupations were added from employer job postings and other sources.

Release 24.2 included the following:

- New “Cross-Domain Linkages” section with linkages between:
 - [Abilities to relevant Work Activities](#);
 - [Abilities to relevant Work Context](#);
 - [Skills to relevant Work Activities](#);
 - [Skills to relevant Work Context](#).
- Removal of:
 - “Tools and Technology” file, which was deprecated in the 23.2 release. Developers should use the [Technology Skills](#) and [Tools Used](#) files instead.
 - “Green Occupations,” “Green Task Statements,” “Green DWA Reference,” and “Tasks to Green DWAs.” Developers interested in retaining this information may continue to use the files as published in the 24.1 release, available on the [Archived data releases](https://www.onetcenter.org/db_releases.html) [https://www.onetcenter.org/db_releases.html] page.
- 441 technology skills related to 98 occupations were updated from employer job postings and other sources. Currently, 161 “hot technologies” are identified. This update includes information linked to 100 occupations which underwent a “spotlight” or detailed review by occupational analysts.
- 162 alternate titles related to 103 occupations were added from employer job postings and other sources.

Release 24.1 included the following:

- 1,416 technology skills related to 322 occupations were updated from employer job postings and other sources. Currently, 161 “hot technologies” are identified. This update includes information linked to 100 occupations which underwent a “spotlight” or detailed review by occupational analysts.
- 170 alternate titles related to 102 occupations were added from employer job postings and other sources.

Release 24.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 100 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 100 occupations
- Addition and update of Training and Work Experience and Education data for 100 occupations
- Addition and update of Work Styles data for 100 occupations

- Addition and update of Job Zones data for 100 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 63 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 299 occupations

Release 23.3 included the following:

- 197 technology skills related to 101 occupations were updated from employer job postings. Currently, 182 “hot technologies” are identified.
- 209 alternate titles related to 118 occupations were added from employer job postings and other sources.

Release 23.2 included the following:

- 339 technology skills related to 133 occupations were updated from employer job postings and other sources. Currently, 186 “hot technologies” are identified.
- 150 alternate titles related to 84 occupations were added from employer job postings and other sources.

This release adds two new files, *Technology Skills* and *Tools Used*. Developers currently using the “Tools and Technology” file should transition to using these new files instead. The “Tools and Technology” file is deprecated and will be removed in a future release of the O*NET Database.

Release 23.1 included the following:

- 946 technology skills related to 197 occupations were updated from employer job postings. Currently, 192 “hot technologies” are identified.
- 191 alternate titles related to 100 occupations were added from employer job postings and other sources.

Release 23.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 100 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 100 occupations
- Addition and update of Training and Work Experience and Education data for 100 occupations
- Addition and update of Work Styles data for 100 occupations
- Addition and update of Job Zones data for 100 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 33 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 294 occupations

Release 22.3 included the following:

- 460 technology skills related to 125 occupations were updated from employer job postings and other sources. Currently, 186 “hot technologies” are identified.

- 273 alternate titles related to 120 occupations were added from employer job postings and other sources.

Release 22.2 included the following:

- 158 technology skills and 45 tools related to 83 occupations were updated from employer job postings and other sources. Currently, 178 “hot technologies” are identified.
- 215 alternate titles related to 98 occupations were added from employer job postings and other sources.

Release 22.1 included the following:

- 408 technology skills and 88 tools related to 132 occupations were updated from employer job postings and other sources. This update includes information linked to 50 occupations with a bright outlook and/or apprenticeship opportunities which underwent a “spotlight” or detailed review by occupational analysts.
- 352 alternate titles related to 151 occupations were added from employer job postings and other sources.

Release 22.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 100 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 100 occupations
- Addition and update of Training and Work Experience and Education data for 100 occupations
- Addition and update of Work Styles data for 100 occupations
- Addition and update of Job Zones data for 100 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 38 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 121 occupations

Release 21.3 included the following:

- 80 alternate titles related to 40 occupations were added from professional association and customer input, transactional analyses, and occupational code requests.
- 80 technology skill examples related to 54 occupations were added from employer job postings.

Release 21.2 included the following:

- 343 alternate titles related to 140 occupations were added from employer job postings and other sources.
- 69 technology skill examples and 7 tools used related to 59 occupations were added from employer job postings and other sources.

Release 21.1 included the following:

- 178 new technology examples related to 85 occupations were added from employer job postings and other sources.
- Sample of Reported Titles selections for 10 occupations were updated to reflect titles frequently reported by job incumbents.

Release 21.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 116 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 116 occupations
- Addition and update of Training and Work Experience and Education data for 116 occupations
- Addition and update of Work Styles data for 116 occupations
- Addition and update of Job Zones data for 116 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 56 occupations
- Addition and update of Alternate Titles and Sample of Reported Titles for 116 occupations
- 121 new technologies are added across 134 occupations, including the identification of 17 additional "hot technologies"

Release 20.3 included the following:

- 626 new technology examples related to 144 occupations were added from employer job postings and other sources.
- 30 new alternate titles related to 5 occupations were added from customer and professional association input.

Release 20.2 included the following:

- 857 new alternate titles related to 266 occupations were added from employer job postings and other sources.
- 1,015 new technology examples related to 414 occupations were added from employer job postings and other sources.

Release 20.1 included the following:

- Data from the Lay/Alternate Titles, Sample of Reported Titles, Related Occupations, Tools & Technology, and Emerging Tasks projects are now included in the O*NET Database. These were previously available as separate supplemental file downloads.
- 769 new alternate titles related to 247 occupations were added from employer job postings and other sources.
- 2,332 new technology examples related to 272 occupations were added from employer job postings.
- All database files can be downloaded in Microsoft Excel format, in addition to the existing formats of tab-delimited text, and SQL files for MySQL, Microsoft SQL Server, or Oracle.

Release 20.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 102 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 102 occupations
- Addition and update of Training and Work Experience and Education data for 102 occupations
- Addition and update of Work Styles data for 102 occupations
- Addition and update of Job Zones data for 102 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 56 occupations

Release 19.0 included the following:

- Addition and update of Task Statement ratings (importance, relevance, and frequency) for 126 occupations
- Addition and update of Abilities, Skills, Work Activities, Knowledge, and Work Context data for 126 occupations
- Addition and update of Training and Work Experience and Education data for 126 occupations
- Addition and update of Work Styles data for 126 occupations
- Addition and update of Job Zones data for 126 occupations
- Addition and update of Detailed Work Activities (DWAs) and linkages for 126 occupations

Release 18.1 contained the following:

This release includes newly developed Detailed Work Activities (DWAs) data, along with broader Intermediate Work Activities (IWAs) and a separate set of Green DWAs. See the report *Work Activities Project Technical Report* for details (http://www.onetcenter.org/reports/DWA_2014.html).

The 18.1 release contains five new files:

- DWA Reference.txt
- Green DWA Reference.txt
- IWA Reference.txt
- Tasks to DWAs.txt
- Tasks to Green DWAs.txt

All other files are unchanged from the 18.0 release.

Release 18.0 contained the following:

- Addition and update of Task Statement ratings (134 occupations)
- Addition and update of Abilities, Knowledge, Skills, Work Activities, and Work Context data (105 occupations)
- Addition and update of Education, Training and Work Experience data (105 occupations)
- Addition and update of Work Styles data (105 occupations)

- Addition and update of Interests data (83 occupations)
- Addition and update of Job Zones (105 occupations)
- Updated Occupation Level Metadata (105 occupations)

Release 17.0 contained the following:

- Addition and update of Task Statement ratings (108 occupations)
- Addition and update of Abilities, Knowledge, Skills, Work Activities, and Work Context data (108 occupations)
- Addition and update of Education, Training and Work Experience data (108 occupations)
- Addition and update of Work Styles data (108 occupations)
- Addition and update of Work Values data (83 occupations)
- Addition and update of Job Zones (108 occupations)
- Updated Occupation Level Metadata (108 occupations)
- Update of Green Task Statements data (6 occupations)

Release 16.0 contained the following:

- Addition and update of Task Statement ratings (107 occupations)
- Addition and update of Abilities, Knowledge, Skills, Work Activities, and Work Context data (107 occupations)
- Addition and update of Education, Training and Work Experience data (107 occupations)
- Addition and update of Work Styles data (107 occupations)
- Addition and update of Job Zones (107 occupations)
- Updated Occupation Level Metadata (107 occupations)
- New Occupational Level Metadata
 - O*NET-SOC Eligible Expert Response Rate
- Addition of Green Occupations data (204 occupations)
- Addition of Green Task Statements data (140 occupations)

O*NET Database 15.1 – Updating the O*NET-SOC Taxonomy

The O*NET 15.1 Taxonomy Preview Database aligns the O*NET-SOC taxonomy with the 2010 SOC (Office of Management and Budget, 2010). Data from the O*NET 15.0 database (O*NET-SOC 2009) has been incorporated into the new O*NET-SOC 2010 taxonomy, including the new O*NET-SOC codes, titles, and descriptions. For 838 data-level occupations, the data remains unchanged from its publication in the O*NET 15.0 database. This occurs where the O*NET-SOC 2010 occupation is a clear successor of the O*NET-SOC 2009 occupation. There are 6 exceptional cases where data has been aggregated from one or more source occupations.

Changes made to the O*NET 15.1 Database are summarized below. A historical summary of all database changes since the release of the O*NET 4.0 Database are provided in [O*NET Database Content Changes 5.0 - 15.1](#). In the O*NET 15.1 Database, 545 occupations had changes to their code, title, and/or description that are reflected in the Occupational Data file.

In 15.1, changes in the Domain Files fall into three categories:

- 50 occupations with data in the 15.0 release have a new O*NET-SOC Code in the 2010 taxonomy. The data and metadata for these occupations are unchanged, but the O*NET-SOC Code field now reflects the latest taxonomy. These code changes impact all domain files, and also the Occupation Level Metadata file.
- 6 exceptional occupations feature data aggregated from one or more occupations from the O*NET-SOC 2009 taxonomy. In these cases, “Recommend Suppress” and “Not Relevant” variables carry a “Y” value if ANY of the source occupations carried that value; no other metadata variables are included. Some data elements were not aggregated and are not present for these occupations, including all Education, Training, and Experience elements and all task ratings. These 6 occupations, listed below, will be updated through the O*NET Data Collection program with data from job incumbents and occupation experts.

13-1071.00	Human Resources Specialists
15-1143.00	Computer Network Architects
23-1012.00	Judicial Law Clerks
51-5112.00	Printing Press Operators
51-5113.00	Print Binding and Finishing Workers
51-9151.00	Photographic Process Workers and Processing Machine Operators

- 26 occupations newly added in the 2010 taxonomy carry new task statements, but not task ratings. This includes the 6 exceptional occupations cited above. With these additional statements, all 974 occupations in the O*NET Data Collection Plan carry full task lists in the 15.1 release.

11-9013.02	Farm and Ranch Managers
11-9061.00	Funeral Service Managers
13-1071.00	Human Resources Specialists
13-1075.00	Labor Relations Specialists
13-1131.00	Fundraisers
13-2071.00	Credit Counselors
15-1143.00	Computer Network Architects
15-1152.00	Computer Network Support Specialists
21-1094.00	Community Health Workers
23-1012.00	Judicial Law Clerks
25-2051.00	Special Education Teachers, Preschool
25-2052.00	Special Education Teachers, Kindergarten and Elementary School
29-1125.01	Art Therapists
29-1125.02	Music Therapists
29-1128.00	Exercise Physiologists
29-2035.00	Magnetic Resonance Imaging Technologists
29-2057.00	Ophthalmic Medical Technicians
29-2099.05	Ophthalmic Medical Technologists
29-2099.07	Surgical Assistants
31-1014.00	Nursing Assistants
31-1015.00	Orderlies
31-9097.00	Phlebotomists
49-2021.00	Radio, Cellular, and Tower Equipment Installers and Repairers
51-5112.00	Printing Press Operators
51-5113.00	Print Binding and Finishing Workers
51-9151.00	Photographic Process Workers and Processing Machine Operators

Release 15.1 contained the following:

- Codes, titles, and descriptions for 1,110 O*NET-SOC 2010 occupations
- Task statements for 974 O*NET-SOC 2010 occupations in the O*NET Data Collection Plan
- Update of 838 O*NET-SOC 2010 occupations through the O*NET Data Collection program with data from job incumbents and occupation experts

Release 15.0 contained the following:

- Addition and update of Task Statement ratings (120 occupations)
- Addition and update of Abilities, Knowledge, Work Activities, and Work Context data (120 occupations)
- Addition and update of Education, Training and Work Experience data (120 occupations)
- Addition and update of Work Styles data (120 occupations)
- Addition and update of Job Zones (120 occupations)
- Updated Occupation Level Metadata (120 occupations)
- Addition and update of Skills data (853 occupations)

O*NET Database 14.0 – Updating the O*NET-SOC Taxonomy

The O*NET 14.0 database is the 1st database release to reflect the updated O*NET-SOC 2009 taxonomy. This taxonomy update is the second major change to the taxonomy since 2000 with its conversion to a SOC-based taxonomy (O*NET-SOC 2000). This new taxonomy contains an additional 153 New and Emerging (N&E) occupations. For more information about N&E, see *New and Emerging Occupations of the 21st Century: Updating the O*NET-SOC Taxonomy* (March, 2009). This report and an O*NET-SOC 2006 to 2009 “look-up” file are available for download from the O*NET Resource Center web site (<http://www.onetcenter.org/taxonomy.html>).

Release 14.0 contained the following:

- Addition and update of Task Statement ratings (117 occupations)
- Addition and update of Abilities, Knowledge, Work Activities, and Work Context data (117 occupations)
- Addition and update of Education, Training and Work Experience data (117 occupations)
- Addition and update of Work Styles data (117 occupations)
- Addition and update of Job Zones (117 occupations)
- Updated Occupation Level Metadata (117 occupations)
- Addition and update of Interests and Work Values data (96 occupations)

Release 13.0 contained the following:

- Addition and update of Task Statement ratings (106 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (106 occupations)
- Additional Work Context data (106 occupations)
- Addition and update of Education, Training and Work Experience data (106 occupations)

- Addition and update of Work Styles data (106 occupations)
- Addition and update of Job Zones (108 occupations)
- Updated Occupation Level Metadata (106 occupations)
- Addition and update of Interests and Work Values data (812 occupations)

Release 12.0 contained the following:

- Addition and update of Task Statement ratings (100 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (100 occupations)
- Addition and update of Education, Training and Work Experience data (100 occupations)
- Addition and update of Work Styles data (100 occupations)
- Addition and update of Job Zones (101 occupations)
- Updated Occupation Level Metadata (100 occupations)

Release 11.0 contained the following:

- Addition and update of Task Statement ratings (101 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (101 occupations)
- Addition and update of Education, Training and Work Experience data (101 occupations)
- Addition and update of Work Styles data (101 occupations)
- Updated Job Zones (101 occupations)
- Updated Occupation Level Metadata (101 occupations)

O*NET Database 10.0 – Updating the O*NET-SOC Taxonomy

The O*NET 10.0 database was the 1st database release to reflect the updated O*NET-SOC 2006 taxonomy. This taxonomy update is the first major change to the taxonomy since 2000 with its conversion to a SOC-based taxonomy (O*NET-SOC 2000). A summary of this update and implementation of the O*NET-SOC 2006 taxonomy can be found in our *Updating the O*NET-SOC Taxonomy Report* (April, 2006). The report is available for download from the O*NET Resource Center site (<http://www.onetcenter.org/reports/UpdatingTaxonomy.html>).

Release 10.0 contained the following:

- Addition of Task Statement ratings (100 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (100 occupations)
- Addition of Education, Training and Work Experience data (100 occupations)
- Addition of Work Styles data (100 occupations)
- Updated Job Zones (100 occupations)
- Updated Occupation Level Metadata (100 occupations)

Release 9.0 contained the following:

- Addition of Task Statement ratings (100 occupations)

- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (100 occupations)
- Addition of Education, Training and Work Experience data (100 occupations)
- Addition of Work Styles data (100 occupations)
- Updated Job Zones (100 occupations)
- Updated Occupation Level Metadata (100 occupations)

Release 8.0 contained the following:

- New and revised Task Statements (98 occupations)
- Addition of Task Statement ratings (100 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (100 occupations)
- Addition of Education, Training and Work Experience data (100 occupations)
- Addition of Work Styles data (100 occupations)
- Updated Job Zones (100 occupations)
- Updated Occupation Level Metadata (100 occupations)

Release 7.0 contained the following:

- Addition of Task Statement ratings (100 occupations)
- Updated Abilities, Knowledge, Skills, Work Activities, and Work Context data (100 occupations)
- Addition of Education, Training and Work Experience data (100 occupations)
- Addition of Work Styles data (100 occupations)
- Updated Job Zones (100 occupations)
- Updated Occupation Level Metadata (100 occupations)

Release 6.0 contained the following:

- New and revised Task Statements (140 occupations)
- Addition of Task Statement ratings (126 occupations)
- Updated Abilities, Work Activities, Knowledge, Skills, and Work Context data (126 occupations)
- Addition of Training and Work Experience, and Education data (126 occupations)
- Addition of Work Styles data (126 occupations)
- Updated Job Zones (126 occupations)
- Addition of scale anchors for both the Work Context and for the Education, Training and Experience domains.
- Updated Occupation Level Metadata (126 occupations)

Release 5.1 contained the following:

- New and Revised Task Statements (69 occupations)
- Updated Job Zones (54 occupations)
- Level Scale Anchors for Skills, Knowledge, Ability, and Work Activity Domains

- New Occupational Level Metadata
 - O*NET-SOC Establishment Response Rate
 - O*NET-SOC Employee Response Rate
 - O*NET-SOC Case Completeness Rate
 - Total Completes for O*NET-SOC
- New Occupational Level Distribution Statistics
 - Data Collection Mode
 - How long at Current Job
 - Industry
- New Ratings Level Metadata
 - Standard Error
 - Lower 95% Confidence Interval Bound
 - Upper 95% Confidence Interval Bound
 - Sample Size
 - Recommended Suppression
 - “Not Relevant for the Occupation” flag

O*NET Database 5.0 – First Data Collection Release

The April 2003 release of the O*NET 5.0 Database represented the first database release to incorporate data from the data collection program. It was the first of planned semi-annual updates of the database to update all O*NET-SOC occupations.

Release 5.0 contained the following:

- New and revised Task Statements (455 occupations)
- Addition of Task Statement ratings (54 occupations)
- Updated Abilities, Work Activities, Knowledge, Skills, and Work Context data (54 occupations)
- Addition of Training and Work Experience, and Education data (54 occupations)
- Addition of Work Styles data (54 occupations)
- Addition of metadata to the file structure to specify source of data and date of update
- Addition of Emerging Task Statements
- Addition of Detailed Work Activities

O*NET Database 4.0 – Final Analyst Database

The O*NET 4.0 database represents the final version of an “analyst ratings only” O*NET Database. The ratings for each of the 900+ O*NET-SOC occupations in the 4.0 database were developed by occupational analysts and every occupation contains ratings for the same range of descriptors. The ongoing O*NET data collection program is gradually replacing these original analyst ratings with ratings derived primarily from job incumbents, as well as, ratings from an updated analyst procedure. The database structure and content changes incorporated in 4.0 were made to make the database consistent with data collection program. For more details about these changes, please refer to *Summary of O*NET 4.0 Content Model and Database* (October 2001) (<http://www.onetcenter.org/resData.html#summary>)

Appendix 5. Historical Summary of Database Content Changes

Click a file name to jump to full description and history. **Note:** **U** = content changes resulting from the data collection program; **N** = data elements/types/descriptors first appearing in the database; and **C** = any other edits made. Shaded cells indicate a file was not present in that release.

O*NET Database Content Changes 25.1 - 28.2

	Release													
	25.1	25.2	25.3	26.0	26.1	26.2	26.3	27.0	27.1	27.2	27.3	28.0	28.1	28.2
Knowledge	C			U				U				U		C
Skills	C			U				U				U		C
Abilities	C			U				U				U		C
Education, Training, and Experience	C			U				U				U		C
Education, Training, and Experience Categories														
Job Zones	C			U	C			U				U		
Job Zone Reference														
Interests	C												U	
Work Values	C													
Work Styles	C			U				U				U		C
Task Statements	U,C			U				U				U	C	
Task Ratings	C			U				U				U		C
Task Categories														
Emerging Tasks	C			U				U				U		
Technology Skills	U	U	U		U	U	U		U,N		U		U	U
Tools Used	U	U	U		U	U	U							U
UNSPSC Reference		U			U									
Work Activities	C			U				U				U		C
IWA Reference														
DWA Reference	U			U										
Tasks to DWAs	U,C			U				U				U		
Work Context	C			U				U				U		C
Work Context Categories														
Occupation Data	C													
Alternate Titles	U,C		U	U	U	U		U	U	U		U	U	
Sample of Reported Titles	U,C		U	U	U	U		U		U		U		
Career Changers Matrix	C													
Career Starters Matrix	C													
Related Occupations							N							U
Content Model Reference				C	C					C		C		
Occupation Level Metadata	C			U				U				U		
Level Scale Anchors				C	C									
Scales Reference														
Survey Booklet Locations														
Abilities to Work Activities														
Abilities to Work Context														
Skills to Work Activities				C										
Skills to Work Context				C										
RIASEC Keywords										N				
Basic Interests to RIASEC										N				
Interests Illustrative Activities										N	N			
Interests Illustrative Occupations										N				

O*NET Database Content Changes 22.0 - 25.0

	Release												
	22.0	22.1	22.2	22.3	23.0	23.1	23.2	23.3	24.0	24.1	24.2	24.3	25.0
Knowledge	U				U				U				U
Skills	U				U				U				U
Abilities	U				U				U				U
Education, Training, and Experience	U				U				U				U
Education, Training, and Experience Categories													
Job Zones	U				U				U				U
Job Zone Reference									C				
Interests													
Work Values													
Work Styles	U				U				U				U
Task Statements	U				U				U				U
Task Ratings	U				U				U				U
Task Categories													
Emerging Tasks	U				U				U				U
Technology Skills							N	U		U	U	U	
Tools Used							N			U			
Tools and Technology		U	U	U		U	U	U		U			
UNSPSC Reference		U	U										
Work Activities	U				U				U				U
IWA Reference													
DWA Reference									U				
Tasks to DWAs	U				U				U				U
Work Context	U				U				U				U
Work Context Categories													
Occupation Data													
Alternate Titles	U	U	U	U	U	U		U	U	U	U	U	U
Sample of Reported Titles	U		U	U	U	U	U	U	U	U	U	U	U
Career Changers Matrix													
Career Starters Matrix													
Green Occupations													
Green Task Statements	U				U				U				
Tasks to Green DWAs	U				U				U				
Green DWA Reference													
Content Model Reference													
Occupation Level Metadata	U				U				U				U
Level Scale Anchors													
Scales Reference													
Survey Booklet Locations	N,C												
Abilities to Work Activities											N		
Abilities to Work Context											N		
Skills to Work Activities											N		
Skills to Work Context											N		

O*NET Database Content Changes 16.0 - 21.3

	Release												
	16.0	17.0	18.0	18.1	19.0	20.0	20.1	20.2	20.3	21.0	21.1	21.2	21.3
Knowledge	U	U	U		U	U				U			
Skills	U	U	U		U	U				U			
Abilities	U	U	U		U	U				U			
Education, Training, and Experience	U	U	U		U	U				U			
Education, Training, and Experience Categories													
Job Zones	U	U	U		U	U				U			
Job Zone Reference					C					C			
Interests			U										
Work Values		U											
Work Styles	U	U	U		U	U				U			
Task Statements	U,C	U	U		U	U				U			
Task Ratings	U	U	U		U	U				U			
Task Categories													
Emerging Tasks							N			U			
Tools and Technology							N	U	U	U,N	U	U	U
UNSPSC Reference							N	U			U	U	
Work Activities	U	U	U		U	U				U			
IWA Reference				N									
DWA Reference				N	U								
Tasks to DWAs				N	U	U				U			
Work Context	U	U	U		U	U				U			
Work Context Categories													
Occupation Data													
Alternate Titles							N	U	U	U		U	U
Sample of Reported Titles							N			U	U		U
Career Changers Matrix							N						
Career Starters Matrix							N						
Green Occupations	N												
Green Task Statements	N	U	U		U	U				U			
Tasks to Green DWAs				N	U	U				U			
Green DWA Reference				N									
Content Model Reference					N,C	N,C				N,C			
Occupation Level Metadata	U,C	U	U		U	U				U,N,C			
Level Scale Anchors													
Scales Reference													
Survey Booklet Locations	C				C								

O*NET Database Content Changes 5.0 - 15.1

	Release												
	5.0	5.1	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	15.1
Knowledge	U	N	U	U	U	U	U,C	U	U	U	U	U	C
Skills	U,N	N	U	U	U	U	U,C	U	U	U	U,C	U	C
Abilities	U,N	N,C	U	U	U	U	U,C	U	U	U	U	U	C
Education, Training, and Experience	N	N	U	U	U	U	U,C	U	U	U	U	U	C
Education, Training, and Experience Categories						C							
Job Zones		N	U	U	U,C	U,C	U,C	U	U,C	U	U	U	C
Job Zone Reference						C					C		
Interests	N						C			U	U		C
Work Values	N						C			U	U		C
Work Styles	N	N	U	U	U	U	U,C	U	U	U	U	U	C
Tasks	U,N	U,N,C	U,N,C	U,N,C	U,N,C	U,N,C	U,N,C	U	U				
Task Statements										U,C	U	U	C
Task Ratings										U,C	U	U	C
Task Categories										C			
Work Activities	U,N	N	U	U	U	U	U,C	U	U	U	U	U	C
Work Context	U,N	N	U	U	U	U	U,C	U	U	U	U	U	C
Work Context Categories						C							
Occupation Data			U,C		C	C	C				C	U	C
Content Model Reference						C		C		N,C			
Occupation Level Metadata		N	U	U	U	U	U,C	U	U	U	U	U	C
Level Scale Anchors		N	U		C	C							
Scales Reference		C								C			
Survey Booklet Locations	N									N,C			