WoAG Occupation Coding Service User Guide

Details the API endpoints available for the Coding Service, and provides access and integration instructions.

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Introduction

The Whole-of-Australian-Government (WoAG) Occupation Coding Service ('the Coding Service' or 'the service') was designed by the Australian Bureau of Statistics (ABS) to provide a single occupation coder across government, industry and the community.

The Coding Service codes occupation data to the latest Australian standard occupation classification titles and codes.

Design

The Coding Service was built with supervised machine-learning technology, to train hierarchical support vector machine (HSVM) models that provide high-quality and comprehensive automated coding against hierarchical classification categories. A confidence threshold is applied to the service, ensuring that outputs are high quality.

The service is called via an Application Programming Interface (API), designed to support integration across systems and platforms (including online forms and survey instruments) by offering authenticated, standards-compliant endpoints.

All API services are hosted in Australia to comply with relevant data sovereignty and privacy regulations.

Users have the option to register as a public or partner user to enable the following services:

Public user

- Single record (synchronous) coding
- Small batch synchronous coding (up to 300 records)

Partner user

- Single record (synchronous) coding
- Small batch synchronous coding (up to 300 records)
- Large-file asynchronous upload/download bulk coding (from 1 record to millions of records)

Public user real time coding API calls are throttled at 1 request per second, with a ceiling of 1,000 requests per day. Partner user API calls are throttled at 1 request per

second, with a ceiling of 10,000 requests per day. Limits can be increased on a case-by-case basis (email coding.capability@abs.gov.au in the first instance).

Security and technology standards

The Coding Service and API have been security assessed by an independent registered assessor within the Australian Signals Directorate (ASD) Information Security Registered Assessors Program (IRAP) Program. This assessment found the Coding Service and API to have met the control and security objectives defined through the Australian Government Information Security Manual (ISM).

The service has been built to comply to the ISM and the Protective Security Policy Framework (PSPF). It leverages modern web API technologies in accordance with the Australian Government's API Standard and globally recognised security frameworks. These standards ensure that the service is designed for safe, scalable integration across government and public-facing systems.

Both public and partner service users will be registered, and will be provided with relevant authorisation tokens to access the service.

See Coding Service security for more detail, including security controls to assist partner agencies in assessing their risks when using this service.

Using the guide

This user guide supports access to and use of the WoAG Occupation Coding Service. It is targeted toward software developers and technical professionals integrating the service into a client application.

The guide outlines the API endpoints available for accessing and using the service, and provides integration instructions for calling the API. It is structured to be followed sequentially from Getting started through to Gathering parameters.

Users will then proceed to Real-time (synchronous) coding for single record or small batch coding, or Asynchronous batch coding, depending on the data to be coded.

Synchronous coding

- The synchronous single-record coding service is designed for real-time usage (~1 second per record). It is suitable for small volumes and live systems such as online forms and web surveys. Synchronous coding also supports coding small batches of records (up to 300 records) with similar per-record timing.
- Note: This service is not optimised for large volumes and should not be used for high-throughput workloads. Use asynchronous coding for scalable batch processing.

Asynchronous coding

- Asynchronous batch coding is designed for large datasets (from a single record to millions of records). While asynchronous coding is the most efficient service for larger batches of data, it is not real-time, and may be queued during high load periods.
- Batch uploads are submitted via the API, and status is checked via polling (operation endpoints).
- Response times for batch requests may range from a few minutes to several hours depending on file size, system demand and current queue load at the time of submission.

Integration script examples

A set of integration script examples have been included in the Coding Service About page (Using the service). The ABS does not provide maintenance or support for end users' own applications, but these examples could help shape your approach to integrating with the coding API, or converting batch coding output.

Getting started

Coding Service access instructions.

Pre-testing readiness

Before accessing the service, you will need to register for the coding service (see Registration). You will also need to consider the following:

- What you need to set up to pass the API packet to your API endpoint (url).
- What data you are going to code.
- Whether you need single record coding, small batch coding (up to 300 records), or large batch coding.
- Whether you need to reformat your data (for example, batch data will need to fit specific formats, and you may want to add record identifiers to map back to your dataset).

See also Coding Service formats, and the following sections in Using the service: Important context for model use, Tips for getting the best predictions out of the Coding Service, and Review coding outputs.

Terms of Use

The use of the Coding Service API is governed by the Coding Service Terms of Use (which includes Service Level Expectations). All API users will be required to accept these Terms of Use prior to gaining access to the service.

Users requesting access to the service must be appropriately authorised to accept the Terms of Use on behalf of their organisation.

Registration

To register for the service and request client credentials, please read and accept the Terms of Use and complete the Registration Form.

Once you have registered, your ABS contact will email you:

- a client identifier, 'clientID', and
- a client secret, 'clientSecret'. These must be kept confidential as they are used when authenticating your requests.

The ABS will monitor registrations for usage, and users will be notified via email if their access is under review.

Authentication

Authentication information and instructions.

An authentication token is required to use the Coding Service. This is a unique, time-limited access key which is used to authenticate all API calls to the service.

Note: Authentication is only required once every hour.

Do not include an authentication script in every API call. Too many token requests may result in an error. This error may also occur for you if there have been excessive authentication requests from anyone else in the organisation. See Session Token Usage for more information.

Get an authentication token

To get an authentication token, you must first call the service's authentication endpoint with an authorisation header. More details are available in the AWS documentation, but the key input parameters are described below.

Request syntax

POST /oauth2/token HTTP/1.1

Host: string

Content-Type: application/x-www-form-urlencoded

Authorization: string

{

grant_type: "client_credentials"

}

See Integration script examples for an example PowerShell script to request an authentication token.

Request header parameters

Host:
The host name for your chosen API. This will be either https://partner-coder.auth.abs.gov.au or
https://public-coder.auth.abs.gov.au depending on whether you have registered for the partner or the
public coding service.

Authorization:
Basic authorisation method with a base64 authorisation token (encodedAuthString), computed from the
client ID and client secret provided upon registration.
encodedAuthString can be computed via the bash command:

$ echo -n "${clientID}:${clientSecret}" | base64

Type: String

Response syntax

HTTP/1.1 200 OK

Content-Type: application/json

{

access_token: "string"

}

Response elements

access_token
Your unique access token which can be used to authenticate all API calls to the coding service.
Type: String

Examples

On registering for the coding service, this user was issued with the following:

- ClientID: “client1”
- ClientSecret: “secret123”

encodedAuthString should be the base64 encoding of “client1:secret123” and the entire request is as follows:

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Sample request	POST /oauth2/token HTTP/1.1
	Host: https://partner-coder.auth.abs.gov.au
	Content-Type: application/x-www-form-urlencoded
	Authorization: Basic Y2xpZW50MTpzZWNyZXQxMjM=
	{
	grant_type: "client_credentials"
	}

Sample response	HTTP/1.1 200 OK
	Content-Type: application/json
	{
	access_token: "example token"
	}

(See Integration script examples for an example PowerShell script to request an authentication token.)

Use an authentication token

To authenticate against the coding API service, you will need to include your access token in the header of any API calls.

- Your token will last one hour from the time of issue, after which you will need to request a new token.
- You do not need to request a new token for each API call.

The API calls are of a short duration, usually less than a few seconds. When initiated,

each call will check the authentication and then continue with the rest of the call. If the call was approved at the start, it will return a response if the timer runs out.

Asynchronous batch calls may take longer to return results, and you may have to re-authorise to receive the results.

Request header parameters

Authorization
The authorisation token retrieved via the Authentication mechanism.
Type: String

Host
The host name for your chosen API. This will be either https://partner-coder.api.abs.gov.au or
https://public-coder.api.abs.gov.au depending on whether you have registered for the partner or the
public coding service.
Type: String

Session token usage

For optimal performance, please reuse a single session token per hour, and avoid hitting service limits by caching tokens. Single session tokens will be valid for all users interacting with webforms or interfaces during that time.

- Token Type: AWS Cognito M2M session token.
- Token Validity: 60 minutes.
- Usage Scope: Expect shared use of a single token across all users of a webform/integration/process.
- Storage: Store locally in your backend (e.g., in-memory, file, cache).
- Rate Guidance: Max 1 token request per hour per webform.

Exceeding this limit may result in your service being blocked or degraded. Restrictions are time limited, and requests for authorisation during this time will result in HTTP 403 errors.

Please ensure that any scripts written for others to copy and paste (i.e. for coding single records or running small batches) do not include a token call. Provide authentication scripts separately to be used at need.

Recommended integration pattern

1. Backend checks for existing token.

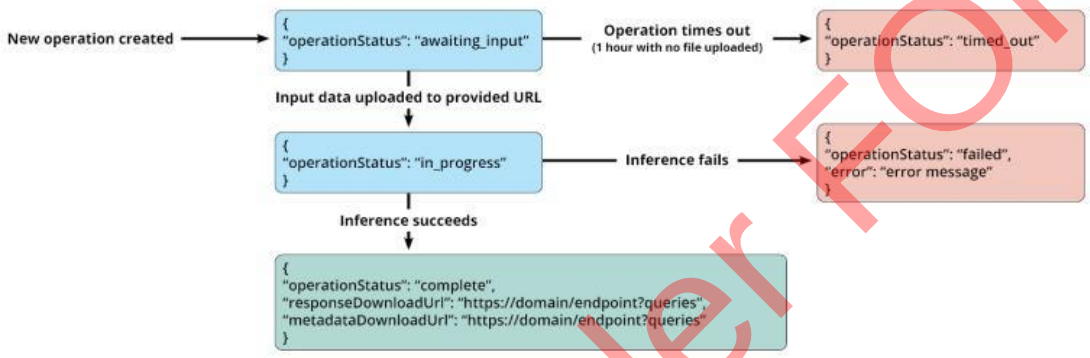
2. If token is valid, reuse it.
3. If token is expired or missing, request a new one.
4. Use the token to call the API for all users of the form.

Token re-use flow diagram

Recommended flow for session token re-use across users of a webform.

ImageDescription

View full screen



Coding service formats

Request formats and recommended text inputs.

Request formats

The coding service uses JSON format for the following services:

- Real-time (synchronous) public coding service
- Real-time partner coding service
- Real-time small batch coding service

It uses JSONL format for the large batch/bulk (asynchronous) partner coding service.

The GET Data method will return the following for each of the specified services for occupation coding:

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Service	Returns
Real-time (synchronous) public coding service	• One or more classification codes and titles for the free text supplied

Service	Returns
Real-time partner coding service	• One or more classification codes and titles for the free text supplied
Real-time small batch coding service (up to 300 records)	• The best match 1-digit to 6-digit codes and titles (moving up the classification hierarchy from 6-digit to 1-digit level) for the free text supplied • If the coder cannot code the free text supplied, it will provide 3 suggestions
Large batch/bulk (asynchronous) partner coding service	• The best match 1-digit to 6-digit codes and titles (moving up the classification hierarchy from 6-digit to 1-digit level) for the free text supplied • If the coder cannot code the free text supplied, it will provide 3 suggestions

Recommended text input for coding

- The occupation coder will perform optimally when provided with both a job title and tasks as free text inputs, as this is how the ML training was carried out.
- Large batch (asynchronous) coding requires both the occp_text and tasks_text fields in the call. If input text for one or other of the fields is not available, include the blank field. For example:

  "occp_text": "sewing machinist"
  "tasks_text": ""
- The coder will not perform as well with just one text field completed (i.e if only the job title or only the task text is entered). If results are unsuccessful, entering more information will help the service make better predictions.
- For synchronous coding, text strings can be a maximum of 100 characters only (a total of 100 characters for combined occupation and task input text entries).
- For asynchronous coding, text strings can be a total of 300 characters for the combined fields.
- The coding service API will not accept custom data queries or query string parameters.
- The service does not recognise classification codes as inputs. While it is not possible to recode a six-digit ANZSCO code to a six-digit OSCA code, datasets with only ANZSCO codes may be recoded to OSCA if the ANZSCO occupation title is reattached to each record. Including more information as a tasks text

entry, such as the occupation descriptions from the classification, will give better outcomes.

- The coding service has been trained on English inputs only. The service accepts printable ASCII characters, which includes all English letters and connectives, but excludes certain accents, foreign currency symbols and control characters like file endings or backspace. Including a bad character may result in an 'Invalid request body' error.

Contextual considerations

The contextual assumption of the input text is that the text relates to and describes a person's job. The coder is able to recognise a very broad vocabulary and will attempt to code all input text, regardless of context, so users need to ensure a contextual fit between their input data and the coding task being undertaken.

For example, if a person enters their job text as 'prisoner', the Coding Service assumes a context that the job to be coded works with prisoners in some way, and codes to 'Correctional Officer'. Likewise, the input text 'student' codes to 'Student Services Adviser'.

The OSCA 2024 model also returns non-classification codes for responses that are not occupations within the scope of the classification:

code	label
099900	Not in the labour force nfd
099988	Inadequately described
099920	Child/baby
099930	Invalid pensioner
099940	Other pensioner
099950	Housewife/husband
099960	Retired
099970	Unemployed/Not work for the dole

(Please note: the ANZSCO 2022 model also available in the Coding Service does NOT include non-classification codes.)

Multiple occupation entries

The service is designed to provide a single occupation code and title for a single record. If multiple jobs per record are entered in the occp_text field, the coder will attempt to code the provided text to a best fit single occupation code at the most detailed level.

The output will reflect the training data, and will depend on how many times the two jobs were present together in the training data. The Coding Service will default to whatever is most commonly found in the training data.

- If multiple jobs are present, you will need to format each job as a separate request.

Likewise, if people combine non-classification labels with job titles, such as 'retired boilermaker', 'unemployed postman', etc, the coder will attempt a best fit code. This may be 'retired', or 'boilermaker', or something else entirely depending on the context and the amount of times the combination of words appeared in the training data. These records may require review.

For more detail, see Using the service: Important context for model use, Tips for getting the best predictions out of the Coding Service, and Review coding outputs.

API Endpoints and HTTP methods

Coding Service endpoints and methods.

The API endpoints and their HTTP methods are outlined below in both the table and the diagram.

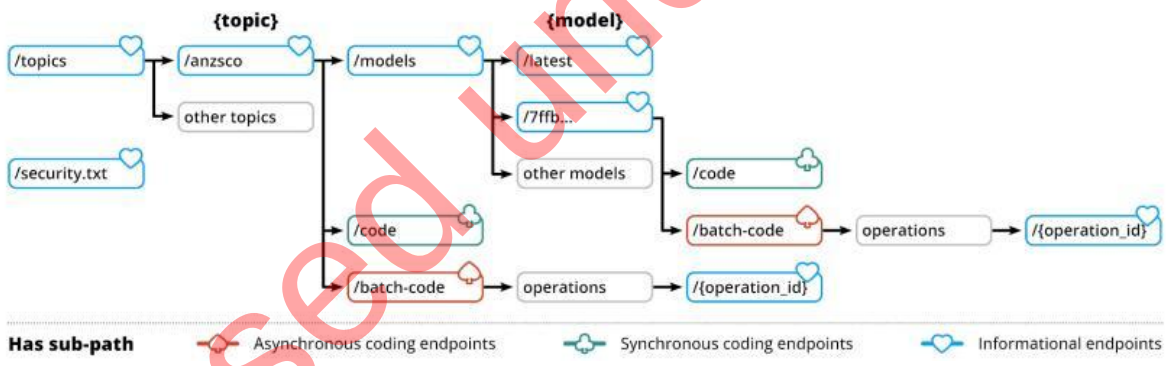
Download

Endpoint	Description	HTTP verb
/v1/topics	Retrieve a list of available topics.	GET
/v1/topics/{topic}	Describes the input format for the given topic.	GET
/v1/topics/{topic}/code	Synchronously codes a single record or small batch of records against the latest model for a given topic.	POST
/v1/topics/{topic}/models	Lists the available models and their input formats for a given topic.	GET
/v1/topics/{topic}/models/latest	Describes the input format for the latest model for a given topic.	GET
/v1/topics/{topic}/models/{model}/code	Synchronously codes a single record or small batch of records against a specific model for the given topic.	POST

Endpoint	Description	HTTP verb
/v1/topics/{topic}/batch-code	Creates a new asynchronous batch inference operation against the latest model for a given topic.	POST
/v1/topics/{topic}/models/{model}/batch-code	Creates a new asynchronous batch inference operation against a specific model for the given topic.	POST
/v1/topics/{topic}/batch-code/operations/{operation_id}	Checks the status of a batch inference operation.	GET
/v1/topics/{topic}/models/{model}/batch-code/operations/{operation_id}	Checks the status of a batch inference operation.	GET
/v1/security.txt	Returns contact details for reporting issues.	GET

ImageDescription

View full screen



Gathering parameters

Information on topics and models.

Listing available topics

Before coding against a topic (classification), you must confirm that the topic is supported by the application. You will also need to record its corresponding uriName for further calls to the API.

Request syntax

GET /v1/topics HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

URI request parameters

The request does not use any URI parameters.

Request body

The request does not have a request body.

Response syntax

HTTP/1.1 200 OK

Content-type: application/json

```
[
  {
    "uriName": "string",
    "fullName": "string"
  }
]
```

Response elements

If the action is successful, the service sends back an HTTP 200 response. The API returns an array of Topic objects representing all the coding topics currently supported by the API.

Errors

For information about errors selecting topics, see Errors and suggested actions.

Example

Download

Sample request

```
GET /v1/topics HTTP/1.1
Host: https://partner-coder.api.abs.gov.au
Content-type: application/json
Authorization: example token
```

Sample response

```
HTTP/1.1 200 OK
Content-type: application/json
[
  {
    "uriName": "osca",
    "fullName": "OSCA - Occupation Standard Classification
    for Australia"
  }
]
```

Getting the input format for the latest model for a topic

Different models are coded against different input formats. If you are using the latest (default) model for your specified topic, you can get the input format via the following mechanism.

If you are using another model, the input format will be provided as part of the list of available models.

Request syntax

```
GET /v1/topics/{topic}/models/latest HTTP/1.1
Host: string
Content-type: application/json
Authorization: string
```

URI request parameters

Download

URI request parameters

topic The uriName for the coding topic of interest. This can be acquired by listing the available topics.

Required: Yes

Request body

The request does not have a request body.

Response syntax

HTTP/1.1 200 OK

Content-type: application/json


```
{
   "modelId": "string",
   "modelVersion": number,
   "modelReleaseDate": "string",
   "modelType": "string",
   "inputFormat":  [
      "string"
   ],
   "topicStandard": "string",
   "topicVersion": "string"
}
```


Response elements

If the action is successful, the service sends back an HTTP 200 response. The API returns a Model object representing the latest model for the given topic, which includes the expected input format.

Errors

For information about errors selecting models, see Errors and suggested actions.

Example

Getting the latest occupation model:

Download

Sample request	GET /v1/topics/osca/models/latest HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-type: application/json Authorization: example token
Sample response	HTTP/1.1 200 OK Content-type: application/json

```
{
  "modelId": "00000000-0000-0000-0000-000000000000",
  "modelVersion": 2,
  "modelReleaseDate": "2023-12-20T06:06:44.514Z",
  "modelType": "hsvm2",
  "inputFormat": [
    "occp_text",
    "tasks_text"
  ],
  "topicStandard": "OSCA - Occupation Standard Classification
  for Australia",
  "topicVersion": "2024"
}
```


Listing available models for a given topic

To code against a specific machine learning model, you can browse the available models and their input formats by calling this endpoint.

Request syntax

GET /v1/topics/{topic}/models HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

URI request parameters

Download

URI request parameters

topic The uriName for the coding topic of interest. This can be acquired by listing the available topics.

Required: Yes

Request body

The request does not have a request body.

Response syntax

HTTP/1.1 200 OK

Content-type: application/json

```
[
  {
    "modelId": "string",
    "modelVersion": number,
    "modelReleaseDate": "string",
    "modelType": "string",
    "inputFormat": [
      "string"
    ],
    "topicStandard": "string",
    "topicVersion": "string"
  }
]
```

Response elements

If the action is successful, the service sends back an HTTP 200 response. The API returns either a SynchronousCodeResponse object or an array of SynchronousCodeResponse objects corresponding to the input records.

Errors

For information about errors selecting models, see Errors and suggested actions.

Example

Listing all ANZSCO models:

Download

Sample request	GET /v1/topics/anzsco/models HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-type: application/json

Authorization: example token

Sample response

```
HTTP/1.1 200 OK
Content-type: application/json
[
  {
    "modelId": "00000000-0000-0000-0000-000000000002",
    "modelVersion": 2,
    "modelReleaseDate": "2023-12-20T06:06:44.514Z",
    "modelType": "hsvm2",
     "inputFormat": [
       "occp_text",
       "tasks_text"
     ],
    "topicStandard": " ANZSCO - Australian and New Zealand
    Standard Classification of Occupations",
     "topicVersion": "2022"
  },
  {
    "modelId": "00000000-0000-0000-0000-000000000001",
    "modelVersion": 1,
    "modelReleaseDate": "2025-05-20T06:06:44.514Z",
    "modelType": "hsvm2",
    "inputFormat": [
       "occp_text",
       "tasks_text"
     ],
    "topicStandard": " ANZSCO - Australian and New Zealand
```

```
        Standard Classification of Occupations",
        "topicVersion": "2022"
      }
    ]
```

Real-time (synchronous) coding

Single record and small batch coding.

Single record coding

The coding service has been designed to apply a classification code and title to a free text entry. The synchronous single record coding feature will enable public facing webforms and other points of data collection to have codes and titles suggested in real time (~1 second).

- The service will provide multiple responses within a classification category, as long as at least one response has a confidence level above the threshold.
- It may only provide one response - for example, if there is only one six-digit code in the relevant category.
- If no responses are above the confidence threshold, the service will not return any results.

Small batch coding

A small JSON file of up to 300 text records can also be coded synchronously.

Note: when you are running a synchronous small batch, the whole packet needs to be syntactically correct. If the syntax fails, the whole batch will fail. As the operation is combined for the whole group of records, none of the records will be able to be coded if there is an error in any record.

When to use synchronous or asynchronous coding

Synchronous coding should only be used for single record coding or small batches of data. If you are coding 900 records, for example, it will be possible to run them in three small batch submissions.

Asynchronous large batch coding is recommended if you need to code or recode a large volume of data. (Large batch coding can be used to code from 1 record to millions of records.)

Coding against the latest model for a topic

This endpoint is used to code a single or small batch of free text records against the specified coding topic, using the latest model for that topic.

Request syntax

Depending on whether you are coding a single record or a small batch of records, your request will follow one of the following formats:

1. Coding a single free text record

```
POST /v1/topics/{topic}/code HTTP/1.1
Host: string
Content-type: application/json
Authorization: string
{
  "record": {
    "occp_text": "string",
    "tasks_text": "string"
  },
  "numberOfSuggestions": number
}
```

2. Coding a small batch of free text records

```
POST /v1/topics/{topic}/code HTTP/1.1
Host: string
Content-type: application/json
Authorization: string
{
  "records": [
    {
      "recordId": "string",
      "occp_text": "string",
      "tasks_text": "string"
```

```
    },
  ],
  "numberOfSuggestions": number
}
```

See Integration script examples for example PowerShell single record and small batch coding scripts.

URI request parameters

Download

URI request parameters

topic	The uriName of the topic against which the record is coded. This can be acquired by listing the available topics. Required: Yes

Request body

Download

Request body

record	The free text record to be coded. Type: Record object, following the input format specified by the model. Required: No, but either record or records must be provided.
records	The free text records to be coded. Type: Array of Record objects, following the input format specified by the model. Each item may optionally specify an additional string value recordId. Length Constraints: Minimum length of 1. Maximum length of 300. Required: No, but either record or records must be provided.
numberOfSuggestions	The number of suggested codes to be provided if the record cannot be coded successfully. The maximum value of this field is 16. Type: Number Required: No

Response syntax

The response of this endpoint will depend on whether your input request contained a single record or a small batch of records.

1. Coding a single free text record

HTTP/1.1 200 OK

Content-type: application/json


```
{
  "codeStatus": "string",
  "input": {
    "occp_text": "string",
    "tasks_text": "string"
  },
  "result": [
    {
      "codeCategory": "string",
      "codeLabel": "string",
      "codeConfidence": number
    }
  ],
}
```


2. Coding a small batch of free text records

HTTP/1.1 200 OK

Content-type: application/json


```
[
  {
    "recordId": "string",
    "codeStatus": "string",
    "input": {
      "occp_text": "string",
```

```
      "tasks_text": "string"
    },
    "result": [
      {
        "codeCategory": "string",
        "codeLabel": "string",
        "codeConfidence": number
      }
    ],
  }
]
```

Response elements

If the action is successful, the service sends back an HTTP 200 response. The API returns either a SynchronousCodeResponse object or an array of SynchronousCodeResponse objects corresponding to the input records.

Errors

For information about synchronous coding errors, see Errors and suggested actions.

Examples

(Also see Integration script examples for example PowerShell single record and small batch coding scripts.)

Download

	Successfully coded a single record using only one free text field:
Sample request	POST /v1/topics/osca/code HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-type: application/json Authorization: example token {

Successfully coded a single record using only one free text field:

Sample response


```
  "record": {
    "occp_text": "Software developer. Writes code, tests"
  },
  "numberOfSuggestions": 3
}
```

```
HTTP/1.1 200 OK
Content-type: application/json
{
  "codeStatus": "successful",
  "input": {
    "occp_text": "Software developer. Writes code, tests"
  },
  "result": [{
    "codeCategory": "261313",
    "codeLabel": "Software Engineer",
    "codeConfidence": 0.6093962788581848
  },{
    "codeCategory": "261312",
    "codeLabel": "Developer Programmer",
    "codeConfidence": 0.43940293565392494
  },{
    "codeCategory": "261399",
    "codeLabel": "Software and Applications Programmers nec",
    "codeConfidence": 0.43756575286388397
  }]
}
```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	Successfully coded a single record using all free text fields:

Sample request	POST /v1/topics/osca/code HTTP/1.1
	Host: https://partner-coder.api.abs.gov.au
	Content-type: application/json
	Authorization: example token
	{
	"record": {
	"occp_text": "software developer",
	"tasks_text": "writing code and unit tests"
	},
	"numberOfSuggestions": 3
	}

Sample response	HTTP/1.1 200 OK
	Content-type: application/json
	{
	"codeStatus": "successful",
	"input": {
	"occp_text": "software developer",
	"tasks_text": "writing code and unit tests"
	},
	"result": [{
	"codeCategory": "261313",
	"codeLabel": "Software Engineer",
	"codeConfidence": 0.6093962788581848
	},{
	"codeCategory": "261312",

Successfully coded a single record using all free text fields:


```
      "codeLabel": "Developer Programmer",
      "codeConfidence": 0.43940293565392494
    },{
      "codeCategory": "261399",
      "codeLabel": "Software and Applications Programmers nec",
      "codeConfidence": 0.43756575286388397
    }]
  }
```


Download

Unsuccessfully coded a single record using only one free text field:

Sample request

```
POST /v1/topics/osca/code HTTP/1.1
Host: https://partner-coder.api.abs.gov.au
Content-type: application/json
Authorization: example token
{
  "record": {
    "occp_text": "Software developer. Writes code, tests"
  },
  "numberOfSuggestions": 3
}
```

Sample response


```
HTTP/1.1 200 OK
Content-type: application/json
{
  "codeStatus": "unsuccessful",
  "input": {
```

Unsuccessfully coded a single record using only one free text field:

```
      "occp_text": "Software developer. Writes code, tests"
    },
    "result": [ ]
}
```

Download

Coding a small batch of records:

Sample request

```
POST /v1/topics/osca/code HTTP/1.1
Host: https://partner-coder.api.abs.gov.au
Content-type: application/json
Authorization: example token
{
  "records": [
    {
      "occp_text": "software developer",
      "tasks_text": "writing code and unit tests"
    }, {
      "occp_text": "Paramedic, respond to emergencies"
    }, {
      "recordId": "1",
      "occp_text": "Sales assistant"
    }
  ],
  "numberOfSuggestions": 3
}
```

Sample response

```
HTTP/1.1 200 OK
```

Coding a small batch of records:

```
Content-type: application/json

[
  {
    "codeStatus": "successful",
    "input": {
      "occp_text": "software developer",
       "tasks_text": "writing code and unit tests"
    },
    "result": [{
      "codeCategory": "261313",
      "codeLabel": "Software Engineer",
      "codeConfidence": 0.6093962788581848
    },{
      "codeCategory": "261312",
      "codeLabel": "Developer Programmer",
      "codeConfidence": 0.43940293565392494
    },{
      "codeCategory": "261399",
      "codeLabel": "Software and Applications Programmers",
      "codeConfidence": 0.43756575286388397
    }]
  }, {
    "codeStatus": "unsuccessful",
    "input": {
      "occp_text": "Paramedic, respond to emergencies"
    },
```

Coding a small batch of records:

```
    "result": [ ]
  }, {
    "recordId": "1",
    "codeStatus": "unsuccessful",
    "input": {
      "occp_text": "Sales assistant"
    },
    "result": [ ]
  }
]
```

Coding against a specific model

This endpoint is used to code a single or small batch of free text records against the specified coding topic, using the specified model.

Request syntax

Depending on whether you are coding a single record or a small batch of records, your request will follow one of the following formats:

1. Coding a single free text record against a specific model

POST /v1/topics/{topic}/models/{model}/code HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

```
{
  "record": {
    "occp_text": "string",
    "tasks_text": "string"
  }
  "numberOfSuggestions": number
```

}

2. Coding records against a specific model

POST /v1/topics/{topic}/models/{model}/code HTTP/1.1

Host: string

Content-type: application/json

Authorization: string


```
{
  "records": [
    {
      "recordId": "string",
      "occp_text": "string",
      "tasks_text": "string"
    }
  ],
  "numberOfSuggestions": number
}
```


URI request parameters

Download

URI request parameters

topic	The uriName of the topic against which the record is coded. This can be acquired by listing the available topics. Required: Yes
model	The model GUID for the model you would like to use to code records. This can be acquired by listing the available models for your topic. Required: Yes

Request body

Download

Request body

record	The free text record to be coded. Type: Record object, following the input format specified by the model. Required: No, but either record or records must be provided.
records	The free text records to be coded. Type: Array of Record objects, following the input format specified by the model. Each item may optionally specify an additional string value recordId. Length Constraints: Minimum length of 1. Maximum length of 300. Required: No, but either record or records must be provided.
numberOfSuggestions	The number of suggested codes to be provided if the record cannot be coded successfully. The maximum value of this field is 16. Type: Number Required: No

Response syntax

The response of this endpoint will depend on whether your input request contained a single record or a small batch of records.

1. Coding a single free text record

HTTP/1.1 200 OK

Content-type: application/json


```
{
   "codeStatus": "string",
   "input": {
      "occp_text": "string",
      "tasks_text": "string"
   },
    "result": [
     {
        "codeCategory": "string",
```

```
      "codeLabel": "string",
      "codeConfidence": number
    }
  ],
}
```


2. Coding a small batch of free text records


```
HTTP/1.1 200 OK
Content-type: application/json
[
  {
    "recordId": "string",
    "codeStatus": "string",
    "input": {
      "occp_text": "string",
      "tasks_text": "string"
    },
    "result": [
      {
        "codeCategory": "string",
        "codeLabel": "string",
        "codeConfidence": number
      }
    ],
  }
]
```


Response elements

If the action is successful, the service sends back an HTTP 200 response. The API returns either a SynchronousCodeResponse object or an array of SynchronousCodeResponse objects corresponding to the input records.

Errors

For information about synchronous coding errors, see Errors and suggested actions.

Examples

(Also see Integration script examples for example PowerShell single record and small batch coding scripts.)

Download

	Successfully coded a single record against a specific model:

Sample request	POST /v1/topics/osca/models/GUID/code HTTP/1.1
	Host: https://partner-coder.api.abs.gov.au
	Content-type: application/json
	Authorization: example token
	{
	"record": {
	"occp_text": "software developer",
	"tasks_text": "writing code and unit tests"
	},
	"numberOfSuggestions": 3
	}

Sample response	HTTP/1.1 200 OK
	Content-type: application/json
	{
	"codeStatus": "successful",
	"input": {
	"occp_text": "software developer",
	"tasks_text": "writing code and unit tests"
	},
	"result": [{

Successfully coded a single record against a specific model:


```
      "codeCategory": "261313",
      "codeLabel": "Software Engineer",
      "codeConfidence": 0.6093962788581848
    },{
      "codeCategory": "261312",
      "codeLabel": "Developer Programmer",
      "codeConfidence": 0.43940293565392494
    },{
      "codeCategory": "261399",
      "codeLabel": "Software and Applications Programmers nec",
      "codeConfidence": 0.43756575286388397
    }]
  }
```


Download

Coding a small batch of records against a specific model:

Sample request

```
POST /v1/topics/osca/models/GUID/code HTTP/1.1
Host: https://partner-coder.api.abs.gov.au
Content-type: application/json
Authorization: example token
{
  "records": [
    {
      "occp_text": "software developer",
      "tasks_text": "writing code and unit tests"
    }, {
      "occp_text": "Paramedic, respond to emergencies"
```

Coding a small batch of records against a specific model:

	}, {
	"recordId": "1",
	"occp_text": "Sales assistant"
	}
	],
	"numberOfSuggestions": 3
	}

Sample response	HTTP/1.1 200 OK
	Content-type: application/json
	[
	{
	"codeStatus": "successful",
	"input": {
	"occp_text": "software developer",
	"tasks_text": "writing code and unit tests"
	},
	"result": [{
	"codeCategory": "261313",
	"codeLabel": "Software Engineer",
	"codeConfidence": 0.6093962788581848
	},{
	"codeCategory": "261312",
	"codeLabel": "Developer Programmer",
	"codeConfidence": 0.43940293565392494
	},{
	"codeCategory": "261399",

Coding a small batch of records against a specific model:


```
        "codeLabel": "Software and Applications Programmers",
        "codeConfidence": 0.43756575286388397
      }]
    }, {
      "codeStatus": "unsuccessful",
      "input": {
        "occp_text": "Paramedic, respond to emergencies"
      },
      "result": [ ]
    }, {
      "recordId": "1",
      "codeStatus": "unsuccessful",
      "input": {
        "occp_text": "Sales assistant"
      },
      "result": [ ]
    }
  ]
```


Asynchronous batch coding

Coding a large volume of data.

In addition to real-time coding of single records and small batches of data, the Coding Service has been designed to code large datasets through asynchronous batching (that is, returning data after a short period of time).

The asynchronous service can be used for as little as one record, up to millions of records.

Note: Asynchronous batch coding should be used if you need to code or recode a large volume of data. While it is the most efficient method of coding larger datasets, it is not real-time, and may be subject to queueing during high load periods.

Getting an upload URL for input data to a batch coding operation

This endpoint is used to create an asynchronous batch inference operation. The API will return a location where you can upload your input file and begin your batch inference operation.

Request syntax

Depending on whether you are specifying a model against which to code your records, your request will follow one of the following formats:

1. Coding records against the latest model

POST /v1/topics/{topic}/batch-code HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

2. Coding records against a specific model

POST /v1/topics/{topic}/models/{model}/batch-code HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

URI request parameters

Download

URI request parameters

topic	The uriName of the topic against which the record is coded. This can be acquired by listing the available topics. Required: Yes
model	The model GUID for the model you would like to use to code records. This can be acquired by listing the available models for your topic. Required: No

Request body

The request does not have a request body.

Response syntax

HTTP/1.1 200 OK

Content-type: application/json

```
{
   "requestUploadUrl": "string",
   "operationId": "string",
   "bucketKmsKeyArn": "string"
}
```

Response elements

Download

If the action is successful, the service sends back an HTTP 200 response. The following data is returned in JSON format by the service:

Response elements

requestUploadUrl	A URL where the records file is to be uploaded. Type: String
operationId	The identifier of the operation, to be used to check the status of this job. This must be recorded at this point to maintain access to the operation. Type: String, in GUID format.
bucketKmsKeyArn	A parameter used by the ABS system to ensure the operation's input data is from the same user who created the operation. This must be passed into the x-amz-server-side-encryption-aws-kms-key-id header when uploading your input file. Type: String

Errors

For information about asynchronous coding errors, see Errors and suggested actions.

Examples

Download

	Creating a new operation to code against the latest model:
Sample request	POST /v1/topics/osca/batch-code HTTP/1.1

	Creating a new operation to code against the latest model:
	Host: https://partner-coder.api.abs.gov.au Content-Type: application/json Authorization: example token

Sample response	HTTP/1.1 200 OK
	Content-type: application/json
	{
	"requestUploadUrl": "https://domain/endpoint?queries",
	"operationId": "00000000-0000-0000-0000-000000000000",
	"bucketKmsKeyArn": "xyz"
	}

Download	
	Creating a new operation to code against a specified model:
Sample request	POST /v1/topics/anzsco/models/GUID/batch-code HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-Type: application/json Authorization: example token

Sample response	HTTP/1.1 200 OK
	Content-type: application/json
	{
	"requestUploadUrl": "https://domain/endpoint?queries",
	"operationId": "00000000-0000-0000-0000-000000000000",
	"bucketKmsKeyArn": "xyz"
	}

Uploading data for inference

Once you have created an inference operation, you will need to upload your data to the provided requestUploadUrl. This is a pre-signed HTTP request which is managed by the AWS S3 server, and the expected input is outlined below.

- Both occp_text and tasks_test fields are required (although one may be empty, indicated by “”).

Request Syntax

PUT requestUploadUrl HTTP/1.1

x-amz-server-side-encryption: aws:kms

x-amz-server-side-encryption-aws-kms-key-id: string

{ "recordId": "string", "occp_text": "string", "tasks_text": "string" }

...

URI Request Parameters

Download

URI Request Parameters

requestUploadUrl	The location where the input file is being uploaded. This is provided when you first create the inference operation. Type: String

Request Header Parameters

Download

Please note: the x-amz-server-side-encryption header is not variable and should always have the value aws:kms.

Request Header Parameters

x-amz-server-side-encryption-aws-kms-key-id	A parameter used by the ABS system to ensure the input data is from the same user who created the operation. This is provided in the bucketKmsKeyArn field when you first create your inference operation. Type: String

Request Body

Download

The request accepts your input file in JSONL format. The maximum input file size is 5GB. All lines of input must contain the same fields, and these fields should satisfy the Record type for the relevant topic/model as specified when creating the upload URL. You may specify the additional field outlined below:

Request Body

recordId	An identifier for the record being coded. This need not be unique. Type: String Required: No

Response Syntax

HTTP/1.1 200 OK

Errors

For information about the errors that are common to all actions, see Errors and suggested actions.

Examples

	Specifying a record identifier:
Sample request	PUT https://domain/endpoint?queries HTTP/1.1 x-amz-server-side-encryption: aws:kms x-amz-server-side-encryption-aws-kms-key-id: xyz { "recordId": "1", "occp_text": "software developer", "tasks_text": "writing code and unit tests" } { "recordId": "2", "occp_text": "Paramedic", "tasks_text": "responding to medical emergencies" } { "recordId": "3", "occp_text": "Brickie", "tasks_text": "" } ...
Sample response	HTTP/1.1 200 OK
	Specifying no record identifier:
Sample request	PUT https://domain/endpoint?queries HTTP/1.1 x-amz-server-side-encryption: aws:kms x-amz-server-side-encryption-aws-kms-key-id: xyz { "occp_text": "software developer", "tasks_text": "writing code and unit tests" } { "occp_text": "Paramedic", "tasks_text": "responding to medical emergencies" } { "occp_text": "Brickie", "tasks_text": "" }

	Specifying a record identifier:
	...
Sample response	HTTP/1.1 200 OK

Checking the status of a batch inference operation

This endpoint is used to check the status of your batch inference job. When the status of your job is complete, the service will return a URL to copy into your web browser to retrieve your coded data.

Request Syntax

Depending on whether you are specifying a model against which to code your records, your request will follow one of the following formats. The application backend handles these requests identically, so you don't need to worry about recording the model which you used when you began the operation.

1. Checking an operation by specifying the topic only

GET /v1/topics/{topic}/batch-code/operations/{operation_id} HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

2. Checking an operation by specifying both the topic and model

GET /v1/topics/{topic}/models/{model}/batch-code/operations/{operation_id} HTTP/1.1

Host: string

Content-type: application/json

Authorization: string

URI Request Parameters

topic	The uriName of the topic against which the record is coded. This can be acquired by listing the available topics. Required: Yes

model	The model GUID for the model you would like to use to code records. This can be acquired by listing the available models for your topic. Required: No
operation_id	The GUID of the operation to get the status of. This value is provided when you first create your inference operation. Required: Yes

Request Body

The request does not have a request body.

Response Syntax

HTTP/1.1 200 OK

Content-type: application/json

```
{
   "operationStatus": "string",
   "responseDownloadUrl": "string",
   "error": "string"
}
```

Response Elements

If the specified operation exists, the service sends back an HTTP 200 OK status code. The status of the operation will dictate the contents of the response. This data is returned in JSON format by the service:

Response Elements

operationStatus	The status of the operation. Type: String Valid Values: awaiting_input | in_progress | complete | timed_out | failed
responseDownloadUrl	A URL where the output data file can be downloaded. This field is optional and is returned only if operationStatus is complete. Type: String
metadataDownloadUrl	A URL where the output metadata file can be downloaded. This file includes information about the model used to code your data.This field is optional and is returned only

	if operationStatus is complete. Type: String
error	Information on why the operation failed. This field is optional and is returned only if operationStatus is failed.

A note about presigned URLs

The responseDownloadUrl and metadataDownloadUrl are presigned URLs. Anyone with this link will be able to download your output file, so it is your responsibility to keep the link secret.

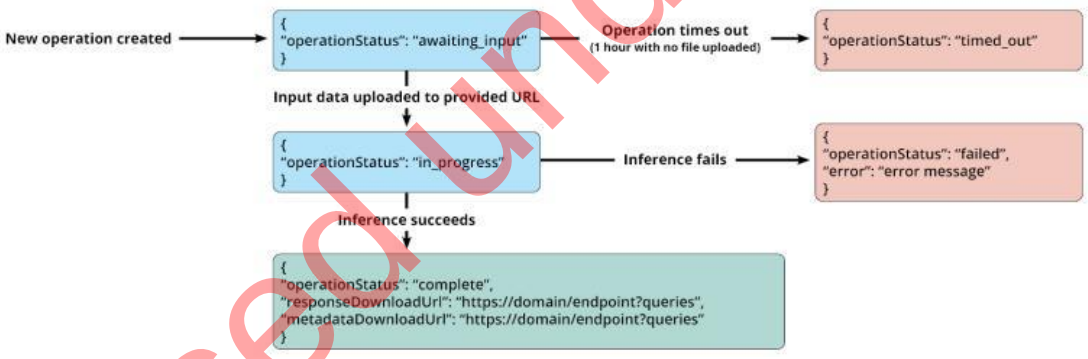
The link will expire after one hour, after which you will have to get a new URL for your output file.

Your output files will be deleted from the system within 24 hours after your inference operation succeeds.

A state machine indicating the progression of operations is shown below:

ImageDescription

View full screen



Errors

For information about asynchronous coding errors, see Errors and suggested actions.

Examples

Download

	Getting the status of an operation:
Sample request	GET /v1/topics/osca/batch-code/operations/GUID HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-type: application/json

	Getting the status of an operation:
	Authorization: example token
Sample request specifying the model used	GET /v1/topics/anzsco/models/GUID/batch-code/operations/GUID HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Content-type: application/json Authorization: example token
Sample responses	HTTP/1.1 200 OK Content-type: application/json and any of the following:

Download

Request sample	**Expected response body**	**Interpretation**
New operation (data not yet uploaded)	{ "operationStatus": "awaiting_input" }	• The server acknowledges the operation exists. • No input data file has yet been received. • The operation is pending your next action - typically an upload via PUT request.
Just uploaded	{ "operationStatus": "in_progress" }	• The server has received the input data file. • The specified operation is now running, or may be queued to run soon. • You should keep checking in periodically (for example, up to once every ten minutes) to see how the operation is progressing. • The output files will be deleted within 24 hours.

Request sample	Expected response body	Interpretation

Never uploaded	{
	"operationStatus": "timed_out"
	}
		• The server acknowledges the operation exists.
		• No input data has yet been received.
		• The operation has timed out due to inactivity and can no longer accept input data.
		• If you wish to run an asynchronous batch operation, you will need to create a new operation.

Operation complete	{
	"operationStatus": "complete",
	"responseDownloadUrl": "https://domain/endpoint?queries",
	"metadataDownloadUrl": "https://domain/endpoint?queries",
	}
		• The specified operation is now complete.
		• The output files are now available at the provided URLs.
		• You should download the output files now as they will be deleted within 24 hours.
		• There may be unsuccessfully coded records in the output file. Errors will be reported on a record-by-record basis where possible. This reduces the need to recode the entire input file.

Operation failed	{
	"operationStatus": "failed",
	"error": "error message"
	}
		• The specified operation has failed inference.
		• Check your input file for any errors or invalid records and try again.
		• The error message may provide context on what caused the operation failure. If the error message does not help resolve

Request sample	Expected response body	Interpretation
		the issue, please note your operation id when contacting us for support. • If you wish to run another asynchronous batch operation, you will need to create a new operation.

Downloading processed data from a complete operation

Once your asynchronous inference operation is complete, you can download the output file by accessing (copying into a web browser) the responseDownloadUrl that is provided when you check the status of a complete operation. The same process may be used to view the operation metadata, available at the metadataDownloadUrl.

This is a generic HTTP GET request which is managed by the AWS S3 server, and the expected format is outlined below.

Response Elements

The asynchronous batch coding service outputs a jsonl file with each line corresponding to the record from the original input file. Each line is an AsynchronousCodeResponse object.

Examples

In response to input which specifies a record identifier:

Sample request

GET https://domain/endpoint?queries HTTP/1.1

Sample response

HTTP/1.1 200 OK

Date: Thu, 20 Jun 2024 02:26:34 GMT

Last-Modified: Thu, 20 Jun 2024 02:24:04 GMT

Accept-Ranges: bytes

Content-Type: application/octet-stream

Server: AmazonS3

Content-Length: 7660

...

{ "recordId": "1", “codeStatus”: “successful”, “input”: { “occp_text”: “software developer”, “tasks_text”: “writing code and unit tests” }, "result": { "codeCategory": "261313", " codeLabel": "Software Engineer", "codeConfidence": 0.98 } }

{ "recordId": "2", “codeStatus”: “unsuccessful”, “input”: { “occp_text”: “Paramedic”, “tasks_text”: “responding to medical emergencies” }, "suggestions": [{ "codeCategory": "411111", "codeLabel": "Ambulance Officer", "codeConfidence": 0.26 }, { "codeCategory": "411112", "codeLabel": "Intensive Care Ambulance Paramedic", "codeConfidence": 0.24 }]

{ "recordId": "unknown", "codeStatus": "unsuccessful", "input": "this is not a json string", "error": "Invalid JSON data format. "}

In response to input which specifies no record identifier:

Sample request

GET https://domain/endpoint?queries HTTP/1.1

Sample response

HTTP/1.1 200 OK

Date: Thu, 20 Jun 2024 02:26:34 GMT

Last-Modified: Thu, 20 Jun 2024 02:24:04 GMT

Accept-Ranges: bytes

Content-Type: application/octet-stream

Server: AmazonS3

Content-Length: 7660

...

{ "recordId": null, “codeStatus”: “successful”, “input”: { “occp_text”: “software developer”, “tasks_text”: “writing code and unit tests” }, "result": { "codeCategory": "261313", " codeLabel": "Software Engineer", "codeConfidence": 0.98 } }

{ "recordId": null, “codeStatus”: “unsuccessful”, “input”: { “occp_text”: “Paramedic”, “tasks_text”: “responding to medical emergencies” }, "suggestions": [{ "codeCategory": "411111", "codeLabel": "Ambulance Officer", "codeConfidence": 0.26 }, { "codeCategory": "411112", "codeLabel": "Intensive Care Ambulance Paramedic", "codeConfidence": 0.24 }] }

{ "recordId": "unknown", "codeStatus": "unsuccessful", "input": "this is not a json string", "error": "Invalid JSON data format. "}

Reporting issues

Coding Service support.

If you encounter bugs or have feedback on the service, please report these via the following mechanism:

Request syntax

GET /v1/security.txt HTTP/1.1

Host: string

Authorization: string

URI request parameters

The request does not use any URI parameters.

Request body

The request does not have a request body.

Response syntax

HTTP/1.1 200 OK

Content-type: text/html

<information on reporting errors>

Example

Download

Example

Sample request	GET /v1/security.txt HTTP/1.1 Host: https://partner-coder.api.abs.gov.au Authorization: example token
Sample response	HTTP/1.1 200 OK Content-type: text/html <p>contact: mailto:security@abs.gov.au

expires: 2025-08-27T05:45:00.000Z</p>

Support for other service issues

Please contact coding.capability@abs.gov.au for other service support. Business hours are 9 am to 5 pm Monday to Friday.

Errors and suggested actions

Glossary of common errors, explanations and solutions

These codes help identify issues on both the client and server sides, allowing for troubleshooting and resolution of HTTP request problems.

Error message	Why this happened	You should...
Common errors possible on all API calls		
Invalid request body HTTP Status Code: 400	Something was wrong with your request body syntax. Example: small batch records exceed length limit of 300/you tried to code too many records at once using the synchronous small batch service.	• check the request body syntax for the API call and try again. • remove any special characters from free text inputs (see Recommended text input for coding) • If your small batch has this error, retry with a smaller batch size, or consider using the asynchronous batch coding service.
User is not authorized to access this resource with an explicit deny HTTP Status Code: 403	You have either not authenticated or your authentication token has expired. This error may also occur if there have been excessive authentication requests from others across your organisation.	• authenticate again if your token is over an hour old, or • review your authentication logic, and reuse your token between users and API calls (see Session token usage).

Error message	Why this happened	You should...
Limit Exceeded HTTP Status Code: 429	You have made too many calls to the API.	• wait 24 hours before calling the API again, or • contact us to discuss increasing your request quota.
Too Many Requests HTTP Status Code: 429	You have made too many API calls in a short period of time.	• space out your requests over a longer timeframe, and • consider using the asynchronous coding service if coding many records.
Error performing request HTTP Status Code: 500	This happens when something unexpected goes wrong on the server. In some instances, further context is provided.	• retry after a short delay; report persistent issues to support.
Problems selecting model or topic		
The specified topic does not exist HTTP Status Code: 404	No topics matched the provided topic parameter.	• check the available topics before proceeding.
The specified model does not exist HTTP Status Code: 404	No models matched the provided model parameter. You'll see this if the system can't locate the specified model - maybe due to a typo or outdated ID.	• verify that the model name or ID is correct and still active. • check which models are available or use the default (latest) model for the topic.
Selected model does not match the input topic.	The given model GUID does not correspond to the specified coding topic.	• check which models are available or use the default (latest) model for the topic.

Error message	Why this happened	You should...
HTTP Status Code: 409		
Errors on the get models endpoint		
No models found for topic HTTP Status Code: 500	No models are available for the provided topic parameter.	• reach out to your ABS contact to investigate why no model is available.
Synchronous coding errors		
Malformed record found in request HTTP Status Code: 400	The free text input did not match the expected format for the model.	• check what the expected format is for a given topic here.
Batch input contained no records HTTP Status Code: 400	You tried to code a small batch of records but the records array was empty.	• check that you have provided at least one record to be coded, and • check that your request body is correctly formatted.
There are record(s) outside the min or max char limit: Record with index x has a total text length under 3 min Record with index y has a total text length over 100 max ...	One or more records provided had too many or too few characters.	• check that each record to be coded has 3-100 (inclusive) characters across the two input fields. • See Recommended text input for coding.

Error message	Why this happened	You should...
HTTP Status Code: 400		
Asynchronous coding errors		
User is not authorised to retrieve operation GUID HTTP Status Code: 401	The specified operation does not belong to the current user. You may have authenticated with the wrong user or specified the wrong operation_id.	• authenticate again and check you have the right credentials, and • confirm your operation id.
Unable to retrieve operation for given id HTTP Status Code: 404	No operations were found to match the given operation_id. This is most likely due to a typo.	• confirm the operation ID is correct. • if you have lost your operation ID, you will have to create a new operation.

See more information on HTTP errors at HTTP response status codes - HTTP | MDN.

Glossary of inputs and responses

Model details, Record and Response objects.

Model details

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These fields are returned by various methods in Gathering parameters:

Model details

Field	Description	Type
modelId	Unique identifier used to reference the ML model.	String (GUID format)
modelVersion	Version number of the model trained on the topic. Distinct from topicVersion.	Number
modelReleaseDate	Date the model was released, in ISO8601 format.	String

Model details

Field	Description	Type
modelType	ML algorithm used (e.g., hsvm).	String
inputFormat	List of expected input field names.	Array of strings
topicStandard	Full name of the classification topic.	String
topicVersion	Version number of the topic classification used in model training.	String

RecordObject

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These are the fields expected when submitting data to the coding service:

RecordObject

Field	Description	Type
occp_text	Free-text description of an occupation.	String
tasks_text	Tasks or duties related to the occupation.	String
recordId	Optional identifier for each input record.	String

Response objects

These are returned after synchronous or asynchronous coding operations:

SynchronousCodeResponse

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SynchronousCodeResponse

Field	Description	Type
recordId	Identifier for the submitted input record (if originally provided).	String
codeStatus	Coding outcome. Valid values: successful, unsuccessful.	String
input	Input record submitted to the model.	RecordObject
result	List of predicted codes and labels. Min length: 0; Max: 16 (or value of numberOfSuggestions)	Array of CodedRecord

AsynchronousCodeResponse

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AsynchronousCodeResponse

Field	Description	Type
recordId	Identifier for the record or null if none provided.	String
codeStatus	Coding outcome. Valid values: successful, unsuccessful.	String
input	Input record submitted to the model.	RecordObject
result	Top code assigned if coding was successful.	CodedRecord object
suggestions	List of alternate codes if coding was unsuccessful. Min length: 1; Max: 3	Array of CodedRecord

CodedRecord

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CodedRecord

Field	Description	Type
codeCategory	Code assigned to the input.	String
codeLabel	Description of the code category.	String
codeConfidence	Confidence score (e.g., 0.92). May be rounded or multiplied by 100 for a percentage.	

Coding Service security

Coding Service system security controls.

The WoAG Occupation Coding Service and API have been security assessed by an independent registered assessor within the Australian Signals Directorate (ASD) Information Security Registered Assessors Program (IRAP) Program. This assessment found the Coding Service and API to have met the control and security objectives defined through the Australian Government Information Security Manual (ISM).

Agencies may need to sign off in-house on using an external API, for business, legal, or security reasons. They may also need to check on their own behalf that the API response is from the address they sent the request to.

The following security controls, drawn from the ISM, are included to assist partner agencies in assessing their risks when using this service.

Control name	System security controls
Cryptography	• Data is encrypted in transit to and from the API. All APIs created with Amazon API Gateway expose HTTPS endpoints only. API Gateway does not support unencrypted (HTTP) endpoints. • API Gateway has been configured to choose a minimum Transport Layer Security (TLS) protocol version of TLS 1.2. • Data is encrypted at rest if it is to be stored by the request action; only file-based batch requests require the storage of request data. KMS Keys will be created for each environment and applied to data (or metadata) storage components e.g., S3 buckets, DynamoDB tables.
Data transfers	• Bulk data transfers only occur for asynchronous requests. This occurs through the AWS WAF and the AWS ABS Gateway. • Data transferred as part of an asynchronous request is scanned. • Resources involved in the coding of file-based requests (e.g. Lambda, SageMaker) are able to read data from bucket(s) containing post-scanned/validated data, not raw ingress data, and are only able to write to a specific egress bucket. • For file-based batch coding, consumers are provided S3 pre-signed URLs for data file ingress and egress. This aligns with ISM cryptographic control requirements (ISMF 1123–1126), access control measures for external interfaces (ISMF 1295–1300), and secure transmission/storage of sensitive data (ISMF 1352–1354). • These URLs are configured with expiration times aligned with the time required to perform a coding request. This is a dynamic value and is configured based on performance data from implemented models. • Data stored in service of file-based batch coding (e.g. ingressed request data and egressed coded response data) is configured for automated expiry (deletion). Minimal expiry time is configured based on the time required to perform a coding request, pending performance data from implemented models.

Control name	System security controls
Data sovereignty	• No data will be stored or processed outside Australia. • Services will never failover to services outside of Australia.
Machine Learning (ML)	• There is no external connection (outside of the dedicated ABS accounts) or other ML reference used in the WoAG Coding Service or in the training of the ML models. • Only isolated instances of Machine Learning within ABS-owned secure AWS accounts are used to train the models that underpin the Coding Service. • While the ABS is exploring the use of Distilbert - Large Language Models (LLM) combined with Census data to train coder models, only more traditional ML models such as Hierarchical Support Vector Machine (HSVM) models, trained only using Census data, will be used in the external service. • Only specific response text, separated from all other response data, is used to create the ML models and in the Coding Service. • The service can only respond with the classification codes and labels defined in the relevant classification standard and version, unless a record identifier is also provided by the user. In this instance, the record identifier is returned to the user with the data. • The application of the models used in the Coding Service, and all data passed through the coders, remains within the ABS secure accounts at all times. No user data is stored or retained. User data is temporarily stored within ABS secure accounts while being processed, and then deleted.

Contact us

Contact information for user support

Please contact the ABS for support via email: coding.capability@abs.gov.au. We aim to respond to all enquiries as soon as possible. Our business hours are 9am to 5pm Monday to Friday.

Document 2

Release of the Whole of AustralianGovernment Occupation Coding Service [SEC=OFFICIAL]
s47E s22 22/10/2025 03:39 PM

OFFICIAL

Basics

s47E 22/10/2025 03:48 PM
Sent by s22

Send	To	
	cc	
	bcc	s47F
Subject	Release of the Whole of AustralianGovernment Occupation Coding Service [SEC=OFFICIAL]	
Protective Mark	OFFICIAL	
Information management markers	☐ Personal privacy ☐ Legal privilege ☒ Legislative secrecy	Caveat ☐
Categories	External Coding Service Management\Project management and governance\Notifications	

Dear all,

After being in Public Beta since June, we're excited to announce that the ABS Whole of Australian Government Occupation Coding Service went live today, **Wednesday 22 October**. Thank you to all the wonderful people that have helped us get where we are today!

s22

Learn more:

- Have a look at our stakeholder pack:RITM0349863 - WoAG Stakeholder pack (A4 Landscape)15Oct.pdf

s22

Kind regards

s22

s22 (she/her)

Stakeholder Relationship Manager, Census and WoAG Coding Capability Project

Business Register and Statistical Standards Branch| **Australian Bureau of Statistics**

(E) s22 **@abs.gov.au (W) www.abs.gov.au**

The ABS Privacy Policy outlines how the ABS handles any personal information that you provide to us.

The Australian Bureau of Statistics acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respects to their Elders, past and present, their histories and cultures.

Australian Bureau of Statistics

Whole of Australian Government

Occupation Coding Service

Stakeholder Pack

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Adoption

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How to register

s22

4. Read and follow the API integration instructions in the **User Guide**, as this supports reliable and fair use of the service.

s22