



Inland Revenue  
Te Tari Taake

Inland Revenue

## Build Pack: Return Status Push Notifications Service

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## 1 Overview

### 1.1 This solution

Inland Revenue has a suite of digital services available for consumption by its service providers that supports efficient, electronic business interactions with Inland Revenue. The Return Status Push Notifications Service described in this build pack document forms part of a suite of Gateway Services.

This build pack document is intended to provide the technical information required to support the end-to-end onboarding of the Return Status Push Notifications Service. It describes the architecture of the technical solution, schemas, end points, sample payloads to use in non-production environments, and also its interaction with other build packs that cover different aspects of Gateway Services.

This build pack focuses on the Return Status Push Notifications Service which is an overnight file feed that pushes transaction data to business intermediaries or customers via the software provider software they utilise. It is intended to reduce the volume of data that passes through Inland Revenue's Income Tax Return Gateway Service.

These services will only provide data for account types (tax types) in Inland Revenue's START system.

This solution is intended to serve cloud-based software providers and not desktop-based solutions.

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Before you continue, please be sure to consult  
<http://www.ird.govt.nz/software-providers/>  
for the products that use this Service, business-level context and use cases,  
links to relevant policy, and information on how to integrate with  
Inland Revenue's products and services.

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### 1.2 Intended audience

The solution outlined in this document is intended to be used by technical teams and development staff. It describes the technical interactions, including responses, provided by the Return Status Push Notifications Service.

The reader is assumed to have a suitable level of technical knowledge in order to understand the information provided. A range of technical terms and abbreviations are used throughout this document, and while most of these will be understood by the intended readers, a [glossary](#) is provided at the end of this document.

### 1.3 Related services

The following application programming interfaces (APIs) complement this Gateway Service. Further details can be found at <https://www.ird.govt.nz/software-providers/>

**NOTE:** More details about the Software Intermediation Service and the business intermediary-to-client linking are available in the [Software Intermediation Service Build Pack](#) and the [Intermediation Service Build Pack](#).

#### 1.3.1 Transaction Data Services

The [Transaction Data Services Overview and Transition build pack](#) was created to support service providers in their transition from Tax Agent Web Services (TAWS) to the use of TDS. It provides an overview of TDS, describes the data that will be made available through the services and processes, as well as giving use cases for how these services will be employed.

## 2 Technical design

### 2.1 Overview

The Return Status Push Notification file is intended to be used by software providers where large quantities of return status data is required. Only return statuses that have changed will be included in the Return Status Push Notification file. This file will not include return statuses for unchanged returns that were changed prior to being onboarded. The Return Status Push Notification file will not backfill return statuses as this is a notification of change going forward.

The Return Status Push Notification is based around a file transfer solution, where Inland Revenue will send information via SFTP to the software provider on a daily (overnight) basis in the evening of each business day.

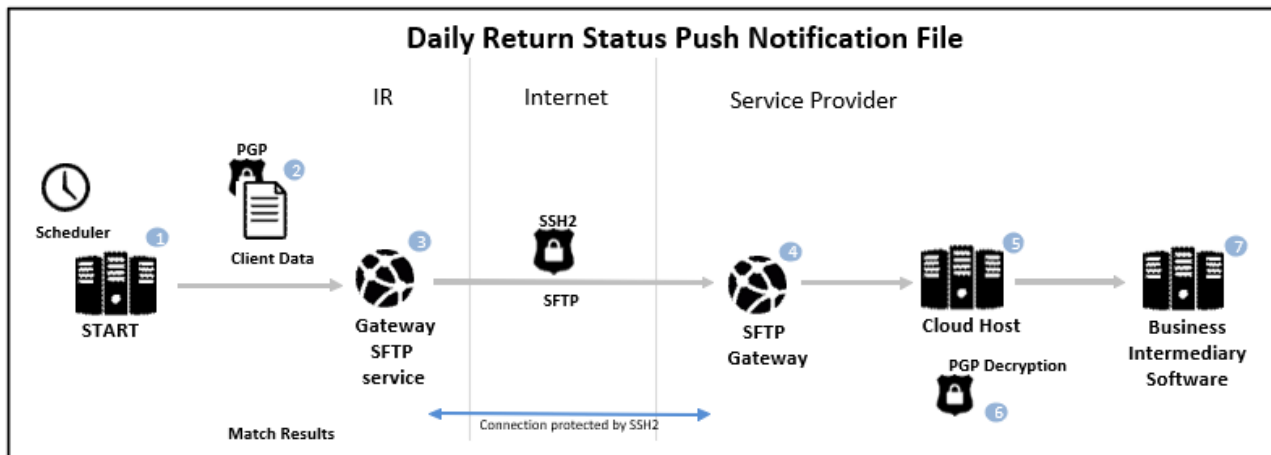
Return Status Push Notification files are sent from START via a gateway SFTP service to the software provider SFTP gateway in a central cloud location from where it can be made available to their software applications and users.

Each subscribing software provider will receive a number of zipped files containing information relating to business intermediaries that use their software product. The service also supports the sending of customer information related to large corporate customers (where there is no business intermediary).

To determine which customer information is sent to which software provider, a link needs to be established at Inland Revenue between the business intermediary or customer and the software provider—this link is maintained via the [Software Intermediation Service](#).

## 2.2 Transfer mechanisms

### 2.2.1 Connectivity for Return Status Push Notifications



The numbers above show the sequence in the path the daily Return Status Push Notification file travels as described in the rest of this document.

Software providers will need to host an SFTP server to which Inland Revenue will upload files daily. SFTP 3.0 and SSH version 2.0 must be used.

Inland Revenue will provide its public key from a key pair to be set up for access to the software provider SFTP site. The exact keys and their nature will be agreed on during the onboarding phase. For SFTP keys, Inland Revenue strives to be NZISM compliant and eventually to use ECDSA keys. Where a software provider cannot support ECDSA, RSA 2048 keys can be used. Inland Revenue intends to try to phase out non-ECDSA keys after 2020.

Pretty Good Privacy (PGP—as per RFC 4880) is used for payload and encryption—this is required due to the fact sensitive customer data is shared. Inland Revenue thereby ensures that once a file is transferred to an end point, it can only be interpreted by an authorised party. As per PGP convention the receiver's (software provider) keys are used by the sender (Inland Revenue). These PGP keys need to be 2048-bit RSA.

The PGP encryption will use Advanced Encryption Standard (AES) with a 256-bit key and the PGP hashing will be done with Secure Hash Algorithm (SHA) SHA-256.

## 2.3 File naming conventions

The files sent via SFTP are zipped files as described below.

### 2.3.1 Return Status Push Notification Files

Return statuses will be sent as one or more ZIP files. The data within the file/s will be batched by a configurable number of business intermediaries. Currently, this value is configured to 100, which results in a ZIP file containing the customer data of 100 business intermediaries.

The number of ZIP files generated will reflect how many business intermediaries are served by a software provider.

The contents of the ZIP file will contain one of the following file types:

- Agent File
- Customer File
- Control File.

### 2.3.2 Agent File

Each business intermediary will have an XML file created that represents their clients.

| Field                   | Description  |
|-------------------------|--|
| <b>File Format</b>      | XML  |
| <b>Example Filename</b> | PSN_DAILY_AGENT_IRD_132271782_3456612467_3456822335_201904151034150901_NZD.xml |

#### 2.3.2.1 File name convention

##### FORMAT:

<file\_type>\_<frequency>\_AGENT\_<tax\_agent\_id>\_<extract\_key>\_<batch\_key>\_<timestamp>\_<environment>.xml

##### FOR EXAMPLE:

PSN\_DAILY\_AGENT\_IRD\_132271782\_3456612467\_3456822335\_201904151034150901\_NZD.xml

| Part           | Format   | Possible values                        |
|----------------|--|--|
| <file_type>    | Constant   | PSN                                    |
| <frequency>    | Constant   | DAILY                                  |
| AGENT          | Constant   | AGENT                                  |
| <tax_agent_id> | ID allocated to tax agent (or business intermediary) by Inland Revenue | Numeric 9 digit<br>IRD Number of Agent |
| <extract_key>  | ID allocated to the total records extracted on a day                   | Numeric int64 value                    |
| <batch_key>    | ID allocated to the batch created. Batches are assigned by a           | Numeric int64 value                    |

| Part                       | Format  | Possible values   |
|----------------------------|---|---|
|                            | configurable number of business intermediaries to include in the file.<br><b>Note:</b> a single extract_key can have multiple batches |   |
| <b>&lt;timestamp&gt;</b>   | Time file was created<br><u>yyyyMMddHHmmssffff</u>  | Eg,<br><u>201710100921548813</u>  |
| <b>&lt;environment&gt;</b> | Inland Revenue environment, three letters   | Production:<br><ul style="list-style-type: none"> <li>• PRD</li> </ul> Partner testing:<br><ul style="list-style-type: none"> <li>• NZH</li> <li>• NZI</li> <li>• NZE</li> <li>• NZF</li> </ul> |

### 2.3.3 Customer File

For software providers that manage their own tax accounts, and have direct account-level Software Intermediation links, a file will be created separate from the agent (business intermediary file).

| Field                   | Description   |
|-------------------------|---|
| <b>File Format</b>      | XML   |
| <b>Example Filename</b> | PSN_DAILY_CUSTOMER_3456612467_3456822335_201904151034150912_NZD.xml |

#### 2.3.3.1 File name convention

##### FORMAT:

<file\_type>\_<frequency>\_CUSTOMER\_<extract\_key>\_<batch\_key>\_<timestamp>\_<environment>.xml

##### FOR EXAMPLE:

PSN\_DAILY\_CUSTOMER\_3456612467\_3456822335\_201904151034150912\_NZD.xml

**NOTE:** There is no identifier (tax\_agent\_id or software\_platform\_id) in the customer file.

| Part                     | Format   | Possible values |
|--------------------------|----------|-----------------|
| <b>&lt;file_type&gt;</b> | Constant | PSN             |
| <b>&lt;frequency&gt;</b> | Constant | DAILY           |
| <b>CUSTOMER</b>          | Constant | CUSTOMER        |

| Part                                | Format   | Possible values   |
|-------------------------------------|--|---|
| <b>&lt;software_platform_id&gt;</b> | ID allocated to Software Platform by Inland Revenue during the onboarding process  | Numeric 10 digit, should remain constant for a given software provider  |
| <b>&lt;extract_key&gt;</b>          | ID allocated to the total records extracted on a day   | Numeric int64 value   |
| <b>&lt;batch_key&gt;</b>            | ID allocated to the batch created. Batches are assigned by a configurable number of business intermediaries to include in the file.<br><br><b>Note:</b> a single extract_key can have multiple batches | Numeric int64 value   |
| <b>&lt;timestamp&gt;</b>            | Time file was created<br><u>yyyyMMddHHmmssffff</u>   | Eg,<br><u>201710100921548813</u>  |
| <b>&lt;environment&gt;</b>          | Inland Revenue environment, three letters  | Production:<br><ul style="list-style-type: none"> <li>• PRD</li> </ul> Partner testing:<br><ul style="list-style-type: none"> <li>• NZH</li> <li>• NZI</li> <li>• NZE</li> <li>• NZF</li> </ul> |

#### 2.3.4 Control File

This shows all of the business intermediary-to-client account links that existed at the time the file was generated.

A control file will be sent containing a list of all ZIP files to be sent and the files inside each of them. The control file serves various purposes:

- It is used to confirm that the received ZIP files match the intended list in the control file
- Some software providers may use it to validate that all intended files in the zip files are present (other software providers may simply rely on the PGP signing to ensure this)
- Control files will be transferred after the ZIP files, so they can be used as a trigger to begin processing.

ZIP files are individually PGP-signed and encrypted, allowing verification that the content was both received and unmodified.

| Field                    | Description  |
|--------------------------|--|
| <b>File format</b>       | XML  |
| <b>Example file name</b> | PSN_DAILY_PROVIDER_1500131086_3456933072_3456625734_201904151848072877_NZD_CONTROL.xml |



### 2.3.4.1 File name convention

#### FORMAT:

<file\_type>\_<frequency>\_PROVIDER\_<software\_platform\_id>\_<extract\_key>\_<batch\_key>\_<timestamp>\_<environment>\_CONTROL.xml

#### FOR EXAMPLE:

PSN\_DAILY\_PROVIDER\_1500131086\_3456933072\_3456625734\_201904151848072877\_NZD\_CONTROL.xml

| Part                   | Format   | Possible values   |
|------------------------|--|---|
| <file_type>            | Constant   | PSN   |
| <frequency>            | Constant   | DAILY   |
| PROVIDER               | Constant   | PROVIDER  |
| <software_platform_id> | ID allocated to Software Platform by Inland Revenue during the onboarding process  | Numeric 10 digit, should remain constant for a given software provider  |
| <extract_key>          | ID allocated to the total records extracted on a day   | Numeric int64 value   |
| <batch_key>            | ID allocated to the batch created. Batches are assigned by a configurable number of business intermediaries to include in the file.<br><b>Note:</b> a single extract_key can have multiple batches | Numeric int64 value   |
| <timestamp>            | Time file was created<br><u>yyyyMMddHHmmssffff</u>   | Eg,<br><u>201710100921548813</u>  |
| <environment>          | Inland Revenue environment, three letters  | Production:<br><ul style="list-style-type: none"> <li>• PRD</li> </ul> Partner testing:<br><ul style="list-style-type: none"> <li>• NZH</li> <li>• NZI</li> <li>• NZE</li> <li>• NZF</li> </ul> |
| CONTROL                | Constant   | CONTROL   |

## 3 Field descriptions and examples

### 3.1 Agent File and Customer File

```
<?xml version="1.0"?>
<Customers xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" RetrievedDate="2019-04-15T10:33:45.227">
  <Customer ID="085004891" IDType="IRD">
    <ClientList ListID="132271782" ListIDType="LSTID">
      <Account Type="INC" FilingFrequency="IIT03I" ID="085-004-891-INC002" Commence="2003-04-29" Cease="9999-12-31">
        <Period FilingPeriod="2007-03-31" FilingFrequency="IIT03I" Begin="2006-04-01" End="2007-03-31">
          <returnStatus>
            <status code="OPRCD">On-time-processed</status>
            <submissionKey>1950654464</submissionKey>
            <majorFormType>INC</majorFormType>
          </returnStatus>
        </Period>
        <Period FilingPeriod="2015-03-31" FilingFrequency="IIT03I" Begin="2014-04-01" End="2015-03-31">
          <returnStatus>
            <status code="OPRCD">On-time-processed</status>
            <submissionKey>608477184</submissionKey>
            <majorFormType>INC</majorFormType>
            <minorFormType>3</minorFormType>
          </returnStatus>
        </Period>
        <Period FilingPeriod="2016-03-31" FilingFrequency="IIT03I" Begin="2015-04-01" End="2016-03-31">
          <returnStatus>
            <status code="OPRCD">On-time-processed</status>
            <submissionKey>1413783552</submissionKey>
            <majorFormType>INC</majorFormType>
            <minorFormType>3</minorFormType>
          </returnStatus>
        </Period>
      </Account>
    </ClientList>
  </Customer>
  <Customer ID="XXXXXXXXX" IDType="IRD">
    [...]
  </Customer>
</Customers>
```

#### 3.1.1 Customers Element

| Attribute            | Description  | Data type | Length |
|----------------------|--|-----------|--------|
| <b>Retrieve Date</b> | The date the information was retrieved from the database | Date      | 8      |

#### 3.1.2 Customer Element

| Attribute     | Description   | Data type | Length |
|---------------|---|-----------|--------|
| <b>ID</b>     | <ul style="list-style-type: none"> <li>IRD - A 9 digit identifier that will be zero padded</li> <li>CST - A 10-digit identifier provided to clients that do not have an IRD number</li> </ul> | String    | 9-10   |
| <b>IDType</b> | Values: <ul style="list-style-type: none"> <li>IRD - IRD number</li> <li>CST - Customer identifier, provided to clients that do not have an IRD number</li> </ul>                             | String    | 6      |

### 3.1.3 Client List Element

| Attribute         | Description  | Data type | Length |
|-------------------|--|-----------|--------|
| <b>ListID</b>     | Identifier of the client list  | String    | 9-10   |
| <b>ListIDType</b> | Values: <ul style="list-style-type: none"> <li>• CLTLID - Client List Identifier</li> <li>• LSTID - List Identifier</li> </ul> | String    | 6      |

### 3.1.4 Account Element

| Attribute              | Description   | Data type | Length |
|------------------------|---|-----------|--------|
| <b>Type</b>            | Type of account<br>See <a href="#">section 3.5</a> for supported account types.   | String    | 3      |
| <b>FilingFrequency</b> | The filing frequency for the Account<br><a href="#">See here for list of frequencies</a>                                  | String    | 12     |
| <b>ID</b>              | The Identifier of the Account<br>IRD number, appended with account type and profile number<br>Example: 085-004-891-INC002 | String    | 30     |
| <b>Commence</b>        | Commencement Date of the Account  | Date      | 8      |
| <b>Cease</b>           | Cessation Date of Account   | Date      | 8      |

### 3.1.5 Period Element

| Attribute               | Description                                 | Data type | Length |
|-------------------------|---|-----------|--------|
| <b>FilingPeriod</b>     | The filing period of the Account            | Date      | 8      |
| <b>Filing Frequency</b> | The filing frequency for the Account/period | Char      | 8      |
| <b>Period Begin</b>     | The first day of the period                 | Date      | 8      |
| <b>Period End</b>       | The last day of the period                  | Date      | 8      |

### 3.1.6 ReturnStatus Element

| Attribute            | Requirement | Description                            | Data type | Length |
|----------------------|-------------|--|-----------|--------|
| <b>status.code</b>   | Required    | The filing period of the Account       | Date      | 8      |
| <b>status</b>        | Required    | The decoded value of the return status | Char      | 8      |
| <b>submissionKey</b> | Required    | The first day of the period            | Date      | 8      |
| <b>majorFormType</b> | Required    | The last day of the period             | Date      | 8      |

| Attribute                  | Requirement | Description  | Data type | Length |
|----------------------------|-------------|--|-----------|--------|
| <b>minorFormType</b>       | Optional    | Used to determine the form type to retrieve in the IR gateway services return service    | String    | 10     |
| <b>additionalInfo.code</b> | Optional    | A code used to describe an error reason for why a return has suspended during processing | String    | 6      |
| <b>additionalInfo</b>      | Optional    | A description of a reason for why a return has suspended during processing               | String    | 1000   |

**NOTE:**

- A list of **additionalInfo** codes is available in the [appendix](#) of this build pack.
- Returns submitted through Inland Revenue's gateway service that are in a "submitted" status will **not be** reflected in the return status push notification file.
- A return that changes status from "expected" to "optional" **will not** be present in the return status push notification file.

The status name is the external decode for each status. Please note that while it is subject to wording changes, the code attribute will remain constant for each status.

## 3.2 Control File

```
<?xml version="1.0"?>
<FileTransfers xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" TotalReturnCount="47"
TotalPeriodCount="31">
  <FileTransfer FileName="PSN_DAILY_PROVIDER_1500131086_3456933072_3456625734_201904151848065112_NZD.zip" ReturnCount="47"
PeriodCount="31">
    <ChildFile FileName="PSN_DAILY_CUSTOMER_3456933072_3456625734_201904151848067017_NZD.xml" ReturnCount="4" PeriodCount="4" />
    <ChildFile FileName="PSN_DAILY_AGENT_IRD_132271782_3456933072_3456625734_201904151848067007_NZD.xml" ReturnCount="43"
PeriodCount="27" />
  </FileTransfer>
</FileTransfers>
```

### 3.2.1 FileTransfers Element

| Attribute               | Description   | Data type | Length |
|-------------------------|---|-----------|--------|
| <b>TotalReturnCount</b> | The total number of return statuses included in the ZIP file. This is the total number for the extract. | Integer   | 8      |
| <b>TotalPeriodCount</b> | The total number of periods included in the ZIP file. This is the total number for the extract.         | Integer   | 8      |

### 3.2.2 FileTransfer Element

| Attribute       | Description   | Data type | Length |
|-----------------|---|-----------|--------|
| <b>FileName</b> | The file name of return status push notification ZIP file | String    | 255    |

| Attribute          | Description   | Data type | Length |
|--------------------|---|-----------|--------|
| <b>ReturnCount</b> | The number of return statuses included in ZIP, summarising the count of all child XML files | Integer   | 8      |
| <b>PeriodCount</b> | The number of periods included in the ZIP, summarising the count of all child XML files     | Integer   | 8      |

### 3.2.3 ChildFile Element

| Attribute          | Description   | Data type | Length |
|--------------------|---|-----------|--------|
| <b>FileName</b>    | The XML file name of the agent file or customer file.                               | String    | 255    |
| <b>ReturnCount</b> | The number of return statuses included in child file                                | Integer   | 8      |
| <b>PeriodCount</b> | The number of periods included in the ZIP, summarising the count of all child files | Integer   | 8      |

### 3.3 Account types supported

Income tax will be the first account type supported in the Return Service Push Notification service. Other account types will be extended in the future after Income Tax is adopted.

|   | FIRST tax type | START account type | Description  |
|---|----------------|--------------------|--|
| <b>Account types currently supported</b>  | INC            | INC                | Income Tax   |
|   | ICA            |                    | Imputation Credit Account  |
|   | MAC            |                    | Maori Authority Credit Account                                     |
| <b>Account types <u>not</u> supported</b> | GST            | GST                | Goods and Services tax   |
|   |                | GSD                | GST on Goods sold in satisfaction of debt                          |
|   | DWT            | DWT                | Dividend withholding tax   |
|   | RWT            | RWT                | Resident Withholding Tax   |
|   | NRT            | NRT                | Non-Resident Withholding Tax                                       |
|   | IPS            | IPS                | RWT deductions on interest   |
|   | RLT            | RLT                | Resident Land Withholding Tax (RLWT)                               |
|   | AIL            | AIL                | Approved issuer levy   |
|   | FBT            | FBT                | Fringe Benefit Tax   |
|   | FBA            |                    | FBA – Annual   |
|   | FBI            |                    | FBI–Income Year  |
|   | GMD            | GMD                | Gaming machine duty  |
|   |                |                    | Problem Gambling Levy – PGL  |
|   |                |                    | GST on PGL   |
|   | PIE            | PIE                | Portfolio investment entity tax                                    |
|   |                | MPO                | Multi Payment Option<br>(also known as BPA – Bulk Payment Account) |

## 4 Glossary

| Acronym/term          | Definition   |
|-----------------------|--|
| <b>API</b>            | Application Programming Interface—a set of functions and procedures that allow applications to access the data or features of another application, operating system or other service   |
| <b>Authentication</b> | The process that verifies the identity of the party attempting to access Inland Revenue  |
| <b>Authorisation</b>  | The process of determining whether a party is entitled to perform the function or access a resource  |
| <b>Build Pack</b>     | Details the technical requirements and specifications, processes and sample payloads for the specified activity  |
| <b>Client</b>         | As used in this build pack client generally refers to the party licensing and using the business intermediary/software provider's software   |
| <b>Credentials</b>    | Information used to authenticate identity, for instance an account username and password   |
| <b>Customer</b>       | <p>A customer a tax payer or a participant in the social policy products that are operated by Inland Revenue. The customer might be a person (an "individual") or a non-individual entity such as a company, trust, society etc.</p> <p>Practically all of the service interactions with Inland Revenue are about a customer (eg their returns, accounts, entitlements etc) even though these interactions might be undertaken by an intermediary such as a tax agent on their behalf.</p> |
| <b>ECDSA</b>          | <p>Elliptic Curve Digital Signature Algorithm—an alternative approach to public-key cryptography over the common RSA standard.</p> <p>See also <b>RSA</b> in this glossary.</p>  |
| <b>Encryption</b>     | Cryptographic transformation of data (called "plaintext") into a form (called "cipher text") that conceals the data's original meaning to prevent it from being known or used. If the transformation is reversible, the corresponding reversal process is called "decryption", which is a transformation that restores encrypted data to its original state. [RFC 2828]  |
| <b>End points</b>     | A term used to describe a web service that has been implemented.   |
| <b>FIRST</b>          | The predecessor to Inland Revenue's START system   |
| <b>GWS</b>            | Gateway Services—the brand name for the suite of web services Inland Revenue is providing. The Return Status Push Notifications Service is a Gateway Service.  |
| <b>HTTP, HTTPS</b>    | Hyper Text Transmission Protocol (Secure)—the protocol by which web browsers and servers interact with each other. When implemented over TLS1.2 HTTP becomes HTTPS.  |
| <b>IP</b>             | Internet Protocol—the principal communication protocol in the Internet protocol suite for relaying datagrams across networks   |
| <b>NZISM</b>          | NZ Information Security Manual—the security standards and best practices for Government agencies. Maintained by the NZ Government Communications Security Bureau (GCSB).   |

| Acronym/term                      | Definition   |
|-----------------------------------|--|
| <b>OAuth 2.0</b>                  | OAuth 2.0 is an industry-standard protocol for authorisation   |
| <b>Pattern</b>                    | A constraint on data type values that require the string literal used in the data type's lexical space to match a specific pattern   |
| <b>Payloads</b>                   | This refers to the data contained within the messages that are exchanged when a web service is invoked. Messages consist of a header and a payload.  |
| <b>PGP</b>                        | Pretty Good Privacy—an encryption programme that provides cryptographic privacy and authentication for data communication.   |
| <b>RFC 4880</b>                   | An RFC (Request For Comment) is a type of peer-reviewed publication produced within the technology community that describes matters relating to the Internet or Internet-connected systems. <a href="#">RFC 4880</a> relates to OpenPGP software and is recommended as a protocol for the Internet community.<br>See also <b>PGP</b> above.  |
| <b>RSA</b>                        | Rivest-Shamir-Adleman—a common public key cryptography algorithm. RSA can be used for encryption and digital signing, whereas the alternative elliptic curve cryptography (ECDSA) can only be used for signing.  |
| <b>Schemas</b>                    | An XML schema defines the syntax of an XML document, in particular of a payload. The schema specifies what a valid payload (such as a GST return) must/can contain, as well as validating the payload.   |
| <b>SHA</b>                        | Secure Hashing Algorithm. There is a family of these that provide different strengths. SHA-2 is currently favoured over SHA-1, which has been compromised.   |
| <b>Software provider</b>          | The organisation developing the software connecting to Inland Revenue gateway services (also known as software intermediary, software developer or service provider)   |
| <b>Software provider software</b> | A client application is an operating instance of software that is deployed in one or more sites. A number of deployment patterns are possible: <ol style="list-style-type: none"> <li>1. A single cloud based instance with multiple tenants and online users</li> <li>2. An on premise instance (such as an organisation's payroll system)</li> <li>3. A desktop application with an online user.</li> </ol> This is the computer software that contains interfaces to consume the services that Inland Revenue exposes. Software is developed and maintained by a software developer and subsequently deployed as one or more client applications. |
| <b>SFTP</b>                       | Secure File Transport Protocol. SFTP 3.0 is used.  |
| <b>Solution</b>                   | The technology components, systems and interface specifications constituting the Tax Agent Web Services capability which enables integration and communication across the gateway channel between Inland Revenue and tax agents for the purpose of providing the service   |



| Acronym/term             | Definition  |
|--------------------------|---|
| <b>SOAP</b>              | Simple Object Access Protocol—a set of standards for specifying web services. Gateway Services uses SOAP version 1.2  |
| <b>SSH</b>               | Secure Shell—an internet communication protocol used mainly to allow users to log into other computers and run commands   |
| <b>SSL</b>               | Secure Sockets Layer certificates—used to establish an encrypted connection between a browser or user’s computer and a service or website   |
| <b>START</b>             | Simplified Taxation and Revenue Technology—Inland Revenue’s new core tax processing application. It is an implementation of the GenTax product from FAST Enterprises.   |
| <b>Tax agent</b>         | A tax agent who is formally registered as such with Inland Revenue  |
| <b>TDS</b>               | Transaction Data Services   |
| <b>TLS1.2</b>            | Transport Layer Security version 1.2—the protocol that is observed between adjacent servers for encrypting the data that they exchange. Prior versions of TLS and all versions of SSL have been compromised and are superseded by TLS1.2.   |
| <b>URL</b>               | Universal Resource Locator—also known as a web address  |
| <b>User</b>              | The user referred to in this document is the user of the software provider accounting or tax package. This user needs delegated permissions on customer tax accounts (potentially via a tax agency or other intermediary) in order to use TDS. The web logon used in eServices needs to be used in making Inland Revenue queries. This web logon must be granted permission there to access customer accounts.  |
| <b>WSDL</b>              | Web Service Definition Language—an XML definition of a web service interface  |
| <b>X.509 certificate</b> | An international standard for encoding and describing a digital certificate. In isolation a public key is just a very large number, the X509 certificate to which it is bound identifies whose key it is, who issued it, when it expires etc. When a counterparty’s X509 digital certificate is received, the recipient takes their public key out of it and store the key in their own keystore. The recipient can then use this key to encrypt and sign the messages that they exchange with this counterparty. |
| <b>XIAMS</b>             | External IAMS—an instance of IAMS that authenticates and authorises access by external parties, for example customers, trading partners etc, as opposed to internal parties such as staff.  |
| <b>XML</b>               | eXtensible Mark-up Language—a language used to define a set of rules used for encoding documents in a format that can be read by humans and machines  |
| <b>XSD</b>               | XML Schema Definition—the current standard schema language for all XML data and documents   |

## 5 Change log

This table lists all changes that have been made to this build pack document since version 0.8 was created.

| Version    | Date of change | Document section | Description  |
|------------|----------------|------------------|--|
| <b>0.8</b> | 05/09/2019     | Multiple         | <ul style="list-style-type: none"> <li>Removed sections 2.3.4 'Software Intermediation File', 2.3.5 'Intermediation File', 3.2 'Intermediation File', and 3.3 'Software Intermediation File', as they referred to the intermediation and software intermediation files that have been removed</li> </ul> |
|            | 02/09/2019     | 2.2.2            | <ul style="list-style-type: none"> <li>Removed section 2.2.2 'Connectivity for subscription' as there's no OAuth token for this connection</li> </ul>  |
|            | 08/08/2019     | 3.1.6            | <ul style="list-style-type: none"> <li>Added note to clarified that a return that changes status from "expected" to "optional" will not be present in the file</li> </ul>  |
|            | 21/05/2019     | 6.1              | <ul style="list-style-type: none"> <li>RTNWCH and RTNWCS codes added to table of additional codes</li> </ul>   |
|            | 16/04/2019     |                  | <ul style="list-style-type: none"> <li>Build pack version produced</li> </ul>  |

## 6 Appendices

### 6.1 Additional info codes (for "ReturnStatus" element)

| Code          | Description   |
|---------------|---|
| <b>FAMNIL</b> | Nil income calculated for FAM   |
| <b>PRVWAT</b> | Waiting for final provisional instalment  |
| <b>RTNCOR</b> | There is correspondence submitted with the return   |
| <b>RTNCSE</b> | The customer indicated that their return will be the last return they submit on the account   |
| <b>RTNERE</b> | Generic error with the return   |
| <b>RTNWAT</b> | Waiting for their partner's return to be filed in order for their FAM end of year square up calculations to process before posting their income tax return      |
| <b>RTNWPT</b> | Waiting for their PCG's return to be filed in order for their FAM end of year square up calculations to process before posting their income tax return          |
| <b>SELIIT</b> | Income information required for the customer  |
| <b>RTNBDT</b> | Superannuation Fund's income tax return shows a different balance date to that registered on their income tax account   |
| <b>RTNRAD</b> | The customer is registered for research and development but an application has not been submitted   |
| <b>RTNSUP</b> | Registered superannuation fund files a return, but the supplied Financial Markets Authority number does not match the Government Actuary Number stored in START |

## 6.2 Minor form types and years supported

| minorFormType | Version | Years supported |
|---------------|---------|-----------------|
| <b>3</b>      | 1       | 2013+           |
| <b>CALC</b>   | 1       | 2019+           |
| <b>3NR</b>    | 1       | 2013+           |
| <b>4</b>      | 1       | 2013+           |
| <b>4J</b>     | 1       | 2013+           |
| <b>6</b>      | 1       | 2013+           |
| <b>7</b>      | 1       | 2015+           |
| <b>8</b>      | 1       | 2015+           |
| <b>8J</b>     | 1       | 2015+           |
| <b>9</b>      | 1       | 2015+           |
| <b>44</b>     | 1       | 2015+           |
| <b>44E</b>    | 1       | 2013+           |
| <b>3F</b>     | 1       | 2013+           |
| <b>3B</b>     | 1       | 2013+           |
| <b>3R</b>     | 1       | 2013+           |
| <b>3K</b>     | 1       | 2013+           |
| <b>10</b>     | 1       | 2013+           |
| <b>215</b>    | 1       | 2015+           |
| <b>307</b>    | 1       | 2013+           |
| <b>308</b>    | 1       | 2013+           |
| <b>833</b>    | 1       | 2016+           |
| <b>CFC</b>    | 1       | 2013+           |
| <b>PTS</b>    | 1       | 2013 to 2018    |

### 6.3 Return Status Codes

| Status                    | Code   | Description  |
|---------------------------|--------|--|
| <b>Default assessment</b> | EST    | This status is displayed when the return is a default assessment   |
| <b>Expected</b>           | EXP    | This status is displayed when a return is expected to be filed   |
| <b>Interim-processing</b> | IPRCG  | This status is displayed when forms have been received and are processing, but the customer has not yet fulfilled their filing obligation. For example, an imputation return is received without an income tax return. |
| <b>Interim return</b>     | IPRCD  | This status is displayed when forms have been received, but the customer has not yet fulfilled their filing obligation. For example, an imputation return is received without an income tax return.                    |
| <b>Late-processing</b>    | LPRCG  | This status is displayed when the return is received late and processing   |
| <b>Late-processed</b>     | LPRCD  | This status is displayed when the return is processed late   |
| <b>Optional</b>           | NRQD   | This status is displayed when the return is not required to be filed, but the customer may choose to file anyway   |
| <b>Ontime-processing</b>  | OPRCG  | This status is displayed when the return is received on time and processing  |
| <b>Ontime-processed</b>   | OPRCD  | This status is displayed when the return is processed on time  |
| <b>Overdue</b>            | OVERDU | This status is displayed when the return is overdue  |
| <b>Submitted</b>          | SUB    | This status is displayed when the return is submitted but is not yet processed   |