Inland Revenue

Build Pack: Return Status Push Notifications Service

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Contents

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.

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.

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/

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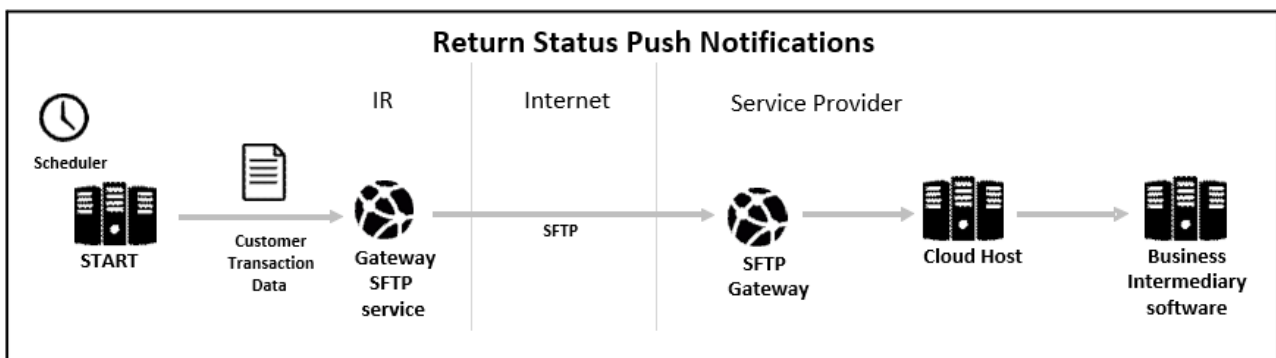
Return Status Push Notification files are sent from START via a gateway SFTP service to the software provider SFTP gateway in a central cloud location from where it can be made available to their software applications and users.

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.

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.

2.2   Transfer mechanisms

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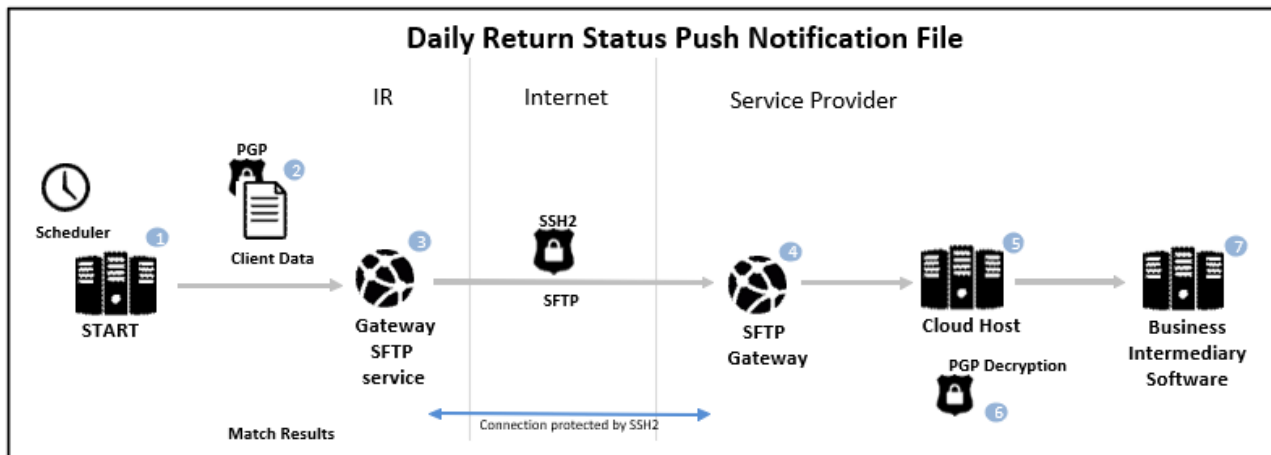
The numbers above show the sequence in the path the daily Return Status Push Notification file travels as described in the rest of this document.

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 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 encryption and signing—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.

IN CONFIDENCE

2.2.2 Connectivity for subscription

Return Status Push Notification
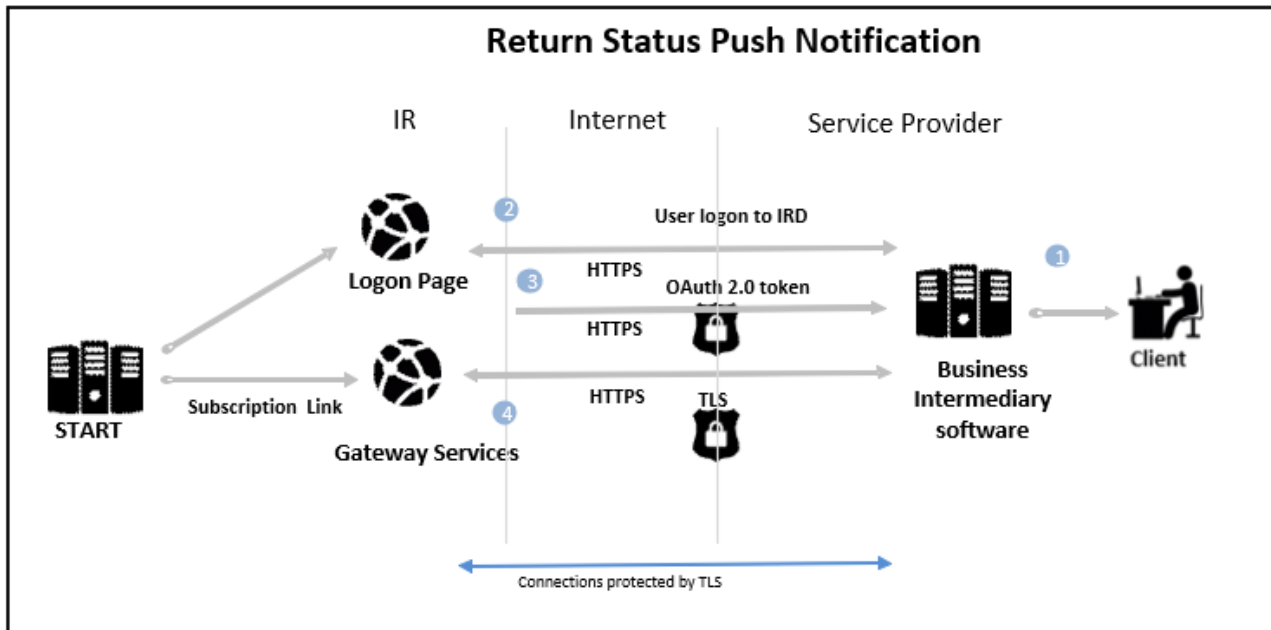
2.3 File naming conventions

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
- Software Intermediation File
- Intermediation File
- Control File.

2.3.2   Agent File

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

Field	Description
File Format	XML
Example Filename	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 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 configurable number of business intermediaries to include in the file. **Note:** a single extract_key can have multiple batches	Numeric int64 value
<timestamp>	Time file was created yyyyMMddHHmmssffff	Eg, 201710100921548813
<environment>	Inland Revenue environment, three letters	Production: • PRD Partner testing: • NZH • NZI • NZE • NZF

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
File Format	XML
Example Filename	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
<file_type>	Constant	PSN
<frequency>	Constant	DAILY
CUSTOMER	Constant	CUSTOMER
<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. **Note:** a single extract_key can have multiple batches	Numeric int64 value
<timestamp>	Time file was created yyyyMMddHHmmssffff	Eg, 201710100921548813
<environment>	Inland Revenue environment, three letters	Production: • PRD Partner testing:

Part	Format	Possible values
		• NZH • NZI • NZE • NZF

2.3.4 Software Intermediation File

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

Field	Description
File Format	XML
Example Filename	PSN_DAILY_PROVIDER_1500131086_3456612467_3456822335_201904151034148527_NZD_SOFTWARE_INTERMEDIATION.xml

2.3.4.1   File name convention

FORMAT:

<file_type>_<frequency>_PROVIDER_<software_platform_id>_<extract_key>_<batch_key>
<timestamp><environment>_ SOFTWARE_INTERMEDIATION.xml

FOR EXAMPLE:

PSN_DAILY_PROVIDER_1500131086_3456612467_3456822335_201904151034148527_NZD_SOFTWARE_INTERMEDIATION.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. **Note:** a single extract_key can have multiple batches	Numeric int64 value
<timestamp>	Time file was created	Eg,

Part	Format	Possible values
	yyyyMMddHHmmssffff	201710100921548813
\<environment\>	Inland Revenue environment, three letters	Production: • PRD Partner testing: • NZH • NZI • NZE • NZF
SOFTWARE_INTERMEDIATION	Constant	INTERMEDIATION

2.3.5 Intermediation File

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

Field	Description
File Format	XML
Example Filename	PSN_DAILY_CUSTOMER_3456612467_3456822335_201904151034150912_ NZD.xml

2.3.5.1   File name convention

FORMAT:

\<file_type\>_\<frequency\>_PROVIDER_\<software_platform_id\>_\<extract_key\>_\<batch_key\> _\<timestamp\>_\<environment\>_INTERMEDIATION.xml

FOR EXAMPLE:

PSN_DAILY_PROVIDER_1500131086_3456612467_3456822335_201904151034148527_NZD_ INTERMEDIATION.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.	Numeric int64 value

Part	Format	Possible values
	Note: a single extract_key can have multiple batches	
<timestamp>	Time file was created yyyyMMddHHmmssffff	Eg, 201710100921548813
<environment>	Inland Revenue environment, three letters	Production: • PRD Partner testing: • NZH • NZI • NZE • NZF
INTERMEDIATION	Constant	INTERMEDIATION

2.3.6 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
File format	XML
Example file name	PSN_DAILY_PROVIDER_1500131086_3456933072_3456625734_201904151848072877_NZD_CONTROL.xml

2.3.6.1   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. **Note:** a single extract_key can have multiple batches	Numeric int64 value
<timestamp>	Time file was created yyyyMMddHHmmssffff	Eg, 201710100921548813
<environment>	Inland Revenue environment, three letters	Production: • PRD Partner testing: • NZH • NZI • NZE • NZF
CONTROL	Constant	CONTROL

3 Field descriptions and examples

3.1 Agent File and Customer File

```xml
<?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">Ontime-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">Ontime-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">Ontime-processed</status>
            <submissionKey>1413783552</submissionKey>
            <majorFormType>INC</majorFormType>
            <minorFormType>3</minorFormType>
          </returnStatus>
        </Period>
      </Account>
    </ClientList>
  </Customer>
  <Customer ID="XXXXXXXXX" IDType="IRD">
        [....]
</Customers>
```

3.1.1 Customers Element

Attribute	Description	Data type	Length
Retrieve Date	The date the information was retrieved from the database	Date	8

3.1.2 Customer Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6

3.1.3 Client List Element

Attribute	Description	Data type	Length
ListID	Identifier of the client list	String	9-10
ListIDType	Values: • CLTLID - Client List Identifier • LSTID - List Identifier	String	6

3.1.4 Account Element

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

3.1.5 Period Element

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

3.1.6 ReturnStatus Element

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

Attribute	Requirement	Description	Data type	Length
minorFormType	Optional	Used to determine the form type to retrieve in the IR gateway services return service	String	10
additionalInfo.code	Optional	A code used to describe an error reason for why a return has suspended during processing	String	6
additionalInfo	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   Intermediation File

```xml
<?xml version="1.0"?>
<IntermediationSummary xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" RetrievedDate="2019-04-15T10:33:45.227">
  <AgencyLinks ID="132271782" IDType="IRD">
   <ClientList ID="132271782" IDType="LSTID">
    <Link ID="011357709" IDType="IRD" AccountType="INC" />
    <Link ID="016382574" IDType="IRD" AccountType="INC" />
    <Link ID="018171821" IDType="IRD" AccountType="INC" />
    <Link ID="075137834" IDType="IRD" AccountType="INC" />
    <Link ID="085004891" IDType="IRD" AccountType="INC" />
    <Link ID="098283242" IDType="IRD" AccountType="INC" />
    <Link ID="101370879" IDType="IRD" AccountType="INC" />
    <Link ID="116508206" IDType="IRD" AccountType="INC" />
    <Link ID="132271798" IDType="IRD" AccountType="INC" />
    <Link ID="132271801" IDType="IRD" AccountType="INC" />
   </ClientList>
  </AgencyLinks>
</IntermediationSummary>
```

3.2.1 IntermediationSummary Element

Attribute	Description	Data type	Length
Retrieve Date	The date the information was retrieved from the database	Date	8

3.2.2 AgencyLinks Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number String 9-10	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6

3.2.3 ClientList Element

Attribute	Description	Data type	Length
ListID	Identifier of the client list	String	9-10
ListIDType	Values: • CLTLID - Client List Identifier • LSTID - List Identifier	String	6

3.2.4 Link Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number String 9-10	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6
AccountType	Account type of the client account	String	3

3.3 Software Intermediation File

```xml
<?xml version="1.0"?>
<SoftwareIntermediationSummary xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" RetrievedDate="2019-04-15T10:33:45.227">
  <CustomerLink ID="011357709" IDType="IRD" AccountType="INC" />
  <AgentLink ID="132271782" IDType="IRD" />
</SoftwareIntermediationSummary>
```

3.3.1 SoftwareIntermediationSummary Element

Attribute	Description	Data type	Length
Retrieve Date	The date the information was retrieved from the database	Date	8

3.3.2 CustomerLink Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number String 9-10	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6
AccountType	Account type of the client account	String	3

3.3.3 AgentLink Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number String 9-10	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6

3.3.4 Link Element

Attribute	Description	Data type	Length
ID	• IRD - A 9 digit identifier that will be zero padded • CST – A 10-digit identifier provided to clients that do not have an IRD number String 9-10	String	9-10
IDType	Values: • IRD – IRD number • CST – Customer identifier, provided to clients that do not have an IRD number	String	6
AccountType	Account type of the client account	String	3

3.4   Control File

```xml
<?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_PROVIDER_1500131086_3456933072_3456625734_201904151848065112_NZD_INTERMEDIATION.xml"
ReturnCount="0" PeriodCount="0" />
    <ChildFile FileName="PSN_DAILY_PROVIDER_1500131086_3456933072_3456625734_201904151848065112_NZD_SOFTWARE_INTERMEDIATION.xml"
ReturnCount="0" PeriodCount="0" />
    <ChildFile FileName="PSN_DAILY_AGENT_IRD_132271782_3456933072_3456625734_201904151848067007_NZD.xml" ReturnCount="43"
PeriodCount="27" />
  </FileTransfer>
</FileTransfers>
```

3.4.1 FileTransfers Element

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

3.4.2 FileTransfer Element

Attribute	Description	Data type	Length
FileName	The file name of return status push notification ZIP file	String	255
ReturnCount	The number of return statuses included in ZIP, summarising the count of all child XML files	Integer	8
PeriodCount	The number of periods included in the ZIP, summarising the count of all child XML files	Integer	8

3.4.3 ChildFile Element

Attribute	Description	Data type	Length
FileName	The XML file name of the agent file, customer file, intermediary file, or software intermediary file.	String	255
ReturnCount	The number of return statuses included in child file **Note:** Intermediation and software intermediation files will always show 0 (zero)	Integer	8
PeriodCount	The number of periods included in the ZIP, summarising the count of all child files **Note:** Intermediation and software intermediation files will always show 0 (zero)	Integer	8

3.5   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
Account types currently supported	INC	INC	Income Tax
	ICA		Imputation Credit Account
	MAC		Maori Authority Credit Account
Account types <u>not supported</u>	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 (also known as BPA – Bulk Payment Account)

4   Glossary

Acronym/term	Definition
API	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
Authentication	The process that verifies the identity of the party attempting to access Inland Revenue
Authorisation	The process of determining whether a party is entitled to perform the function or access a resource
Build Pack	Details the technical requirements and specifications, processes and sample payloads for the specified activity
Client	As used in this build pack client generally refers to the party licensing and using the business intermediary/software provider's software
Credentials	Information used to authenticate identity, for instance an account username and password
Customer	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. 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.
ECDSA	Elliptic Curve Digital Signature Algorithm—an alternative approach to public-key cryptography over the common RSA standard. See also **RSA** in this glossary.
Encryption	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]
End points	A term used to describe a web service that has been implemented.
FIRST	The predecessor to Inland Revenue's START system
GWS	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.
HTTP, HTTPS	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.
IP	Internet Protocol—the principal communication protocol in the Internet protocol suite for relaying datagrams across networks
NZISM	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
OAuth 2.0	OAuth 2.0 is an industry-standard protocol for authorisation
Pattern	A constraint on data type values that require the string literal used in the data type's lexical space to match a specific pattern
Payloads	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.
PGP	Pretty Good Privacy—an encryption programme that provides cryptographic privacy and authentication for data communication.
RFC 4880	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. RFC 4880 relates to OpenPGP software and is recommended as a protocol for the Internet community. See also **PGP** above.
RSA	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.
Schemas	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.
SHA	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.
Software provider	The organisation developing the software connecting to Inland Revenue gateway services (also known as software intermediary, software developer or service provider)
Software provider software	A client application is an operating instance of software that is deployed in one or more sites. A number of deployment patterns are possible: 1. A single cloud based instance with multiple tenants and online users 2. An on premise instance (such as an organisation's payroll system) 3. A desktop application with an online user. 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.
SFTP	Secure File Transport Protocol. SFTP 3.0 is used.
Solution	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
SOAP	Simple Object Access Protocol—a set of standards for specifying web services. Gateway Services uses SOAP version 1.2
SSH	Secure Shell—an internet communication protocol used mainly to allow users to log into other computers and run commands
SSL	Secure Sockets Layer certificates—used to establish an encrypted connection between a browser or user's computer and a service or website
START	Simplified Taxation and Revenue Technology—Inland Revenue's new core tax processing application. It is an implementation of the GenTax product from FAST Enterprises.
Tax agent	A tax agent who is formally registered as such with Inland Revenue
TDS	Transaction Data Services
TLS1.2	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.
URL	Universal Resource Locator—also known as a web address
User	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.
WSDL	Web Service Definition Language—an XML definition of a web service interface
X.509 certificate	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.
XIAMS	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.
XML	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
XSD	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
0.8	08/08/2019	3.1.6	• Added note to clarified that a return that changes status from "expected" to "optional" will not be present in the file
	21/05/2019	6.1	• RTNWCH and RTNWCS codes added to table of additional codes
	16/04/2019		• Build pack version produced

6 Appendices

6.1 Additional info codes (for "ReturnStatus" element)

Code	Description
FAMNIL	Nil income calculated for FAM
PRVWAT	Waiting for final provisional instalment
RTNCOR	There is correspondence submitted with the return
RTNCSE	The customer indicated that their return will be the last return they submit on the account
RTNERE	Generic error with the return
RTNWAT	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
RTNWPT	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
SELIIT	Income information required for the customer
RTNBDT	Superannuation Fund's income tax return shows a different balance date to that registered on their income tax account
RTNRAD	The customer is registered for research and development but an application has not been submitted
RTNSUP	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
3	1	2013+
CALC	1	2019+
3NR	1	2013+
4	1	2013+
4J	1	2013+
6	1	2013+
7	1	2015+
8	1	2015+
8J	1	2015+
9	1	2015+
44	1	2015+
44E	1	2013+
3F	1	2013+
3B	1	2013+
3R	1	2013+
3K	1	2013+
10	1	2013+
215	1	2015+
307	1	2013+
308	1	2013+
833	1	2016+
CFC	1	2013+
PTS	1	2013 to 2018

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6.3   Return Status Codes

Status	Code	Description
Default assessment	EST	This status is displayed when the return is a default assessment
Expected	EXP	This status is displayed when a return is expected to be filed
Interim-processing	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.
Interim return	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.
Late-processing	LPRCG	This status is displayed when the return is received late and processing
Late-processed	LPRCD	This status is displayed when the return is processed late
Optional	NRQD	This status is displayed when the return is not required to be filed, but the customer may choose to file anyway
Ontime-processing	OPRCG	This status is displayed when the return is received on time and processing
Ontime-processed	OPRCD	This status is displayed when the return is processed on time
Overdue	OVERDU	This status is displayed when the return is overdue
Submitted	SUB	This status is displayed when the return is submitted but is not yet processed