



Inland Revenue

## Build Pack: Transaction Data Services (TDS) Real Time V0.80 31 January 2018

**Date:** 31/1/2018  
**Version:** v0.80

UNCLASSIFIED

## About this Document

This document is provided to Software Providers to support the build and use of the Transaction Data Service (TDS) Real Time web services. It also describes the relationship with other build packs, architecture of the technical solution, schemas (file formats), and endpoints; it also provides sample payloads.

This document is part of the suite of build packs that Software Providers need for implementing interfaces between their software and Inland Revenue TDS.

## Document Control

<b>Document Name</b>	TDS Real Time - Build Pack V0.80 31 January 2018
<b>Document Version</b>	0.80 Draft for initial Software Developer feedback
<b>Contact</b>	For feedback relating to this document and/or further information please contact the Inland Revenue Software Developers Liaison Unit (SDLU)  E: <a href="mailto:SoftwareDevelopersLiaisonUnit@ird.govt.nz">mailto: SoftwareDevelopersLiaisonUnit@ird.govt.nz</a>

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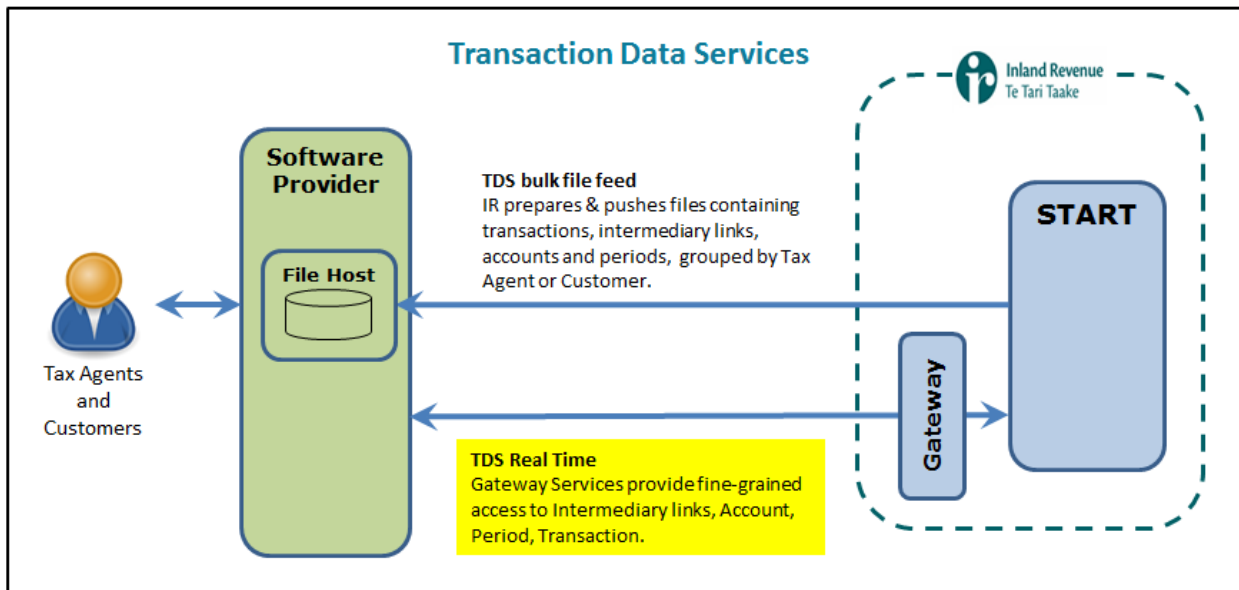
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## 1 Overview

### 1.1 Solution overview

Inland Revenue has a suite of digital services available for consumption by our partners that support electronic business interactions with Inland Revenue.

Transactional Data Services (TDS) as a business service provides the two technical services shown in the figure below:



**Figure 1: Transaction Data Services overview**

1. The *TDS Bulk File Feed* is an overnight file feed that pushes transaction data to Tax Agents or Customers via the Software Provider software they utilise. It is designed to cater for the high volumes of transactional data.
2. The *TDS Real Time Technical Service* **is documented in this build pack** and is a set of web services for querying individual customer accounts and their periods and transactions. It is intended for occasional use when the latest information is required quickly, e.g. for a new customer.

These services will only provide data for Account Types in Inland Revenue's new system, START. See [Overview Build Pack](#) for details of when particular Account Type data will be available.

## 1.2 Intended audience

This document is intended to be used by technical teams and development staff. The reader is assumed to have a reasonable level of technical knowledge in order to comprehend 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 in Appendix A – Glossary.

Please refer to the TDS Overview Build Pack for more information on the business context.

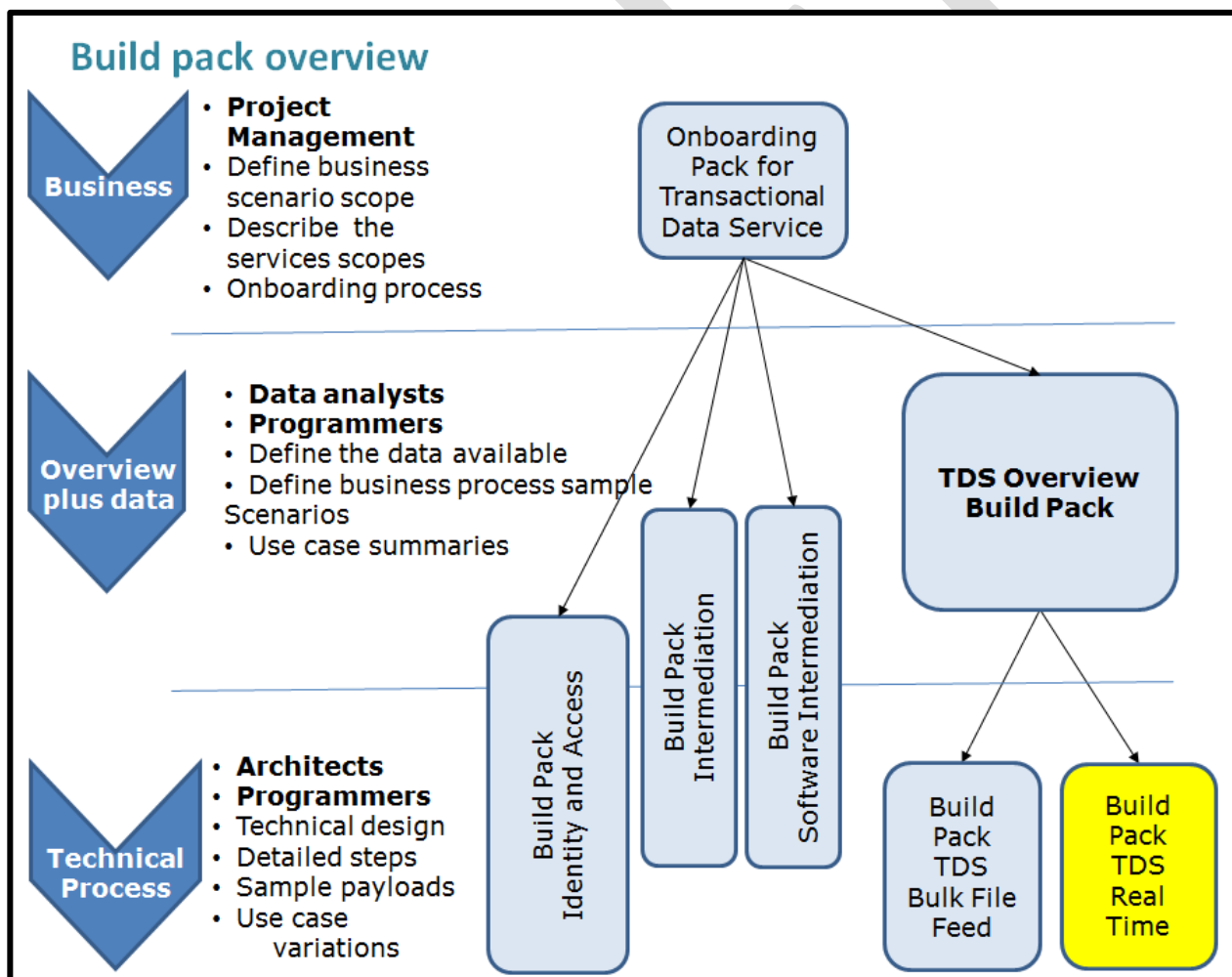
## 1.3 Related documents

All Build Packs are available on the Inland Revenue BT GitHub website here:

<https://github.com/InlandRevenue/Gateway-Services/wiki>

See Table 1 below for links to specific Build Packs

The following diagram explains the relationships between the documents supporting the TDS solution:



**Figure 2: Onboarding and build pack structure for TDS**



Name	Description
<b>TDS – Onboarding Pack</b>	Provides the onboarding guide for consumers of the various TDS components. Gives details of prerequisites, setup requirements, testing, contact lists, etc. It is intended to get an organisation up and running using the TDS solution. This document will not be available at the link above; instead it will be sent to Software Providers when necessary. Note: At this stage Onboarding information is included in the TDS Overview document.
<a href="#">TDS - Overview</a>	Describes the service components at a high level and provides an overview of the data available through TDS. Also contains information about how the component services that make up the TDS solution interact with each other. Note: At this stage there is an Overview and Transition document to support users of the existing Tax Agent Web Services. Some later variations of that document will not include Transition information.
<a href="#">TDS Bulk File Feed</a>	Details the technical requirements and specifications, processes and sample payloads for the TDS Bulk File Service
<b>TDS Real Time Feed Build Pack</b>	This document.
<a href="#">Identity and Access Build Pack</a>	Details the Authentication and Authorisation mechanisms used by IR.
<a href="#">Intermediation Build Pack</a>	Details the technical requirements and specifications querying the links between Tax Agents and Clients to enable these links to be used by the TDS Real Time queries.
<b>Software Intermediation Build Pack</b>	Details the technical requirements and specifications for the linking of Tax Agents/Customers to Software Providers to enable these links to be used by the Bulk File Feed and Bulk file History Service.

**Table 1: Related documents**

## 1.4 Prerequisites

Only onboarded parties are able to call these web services.

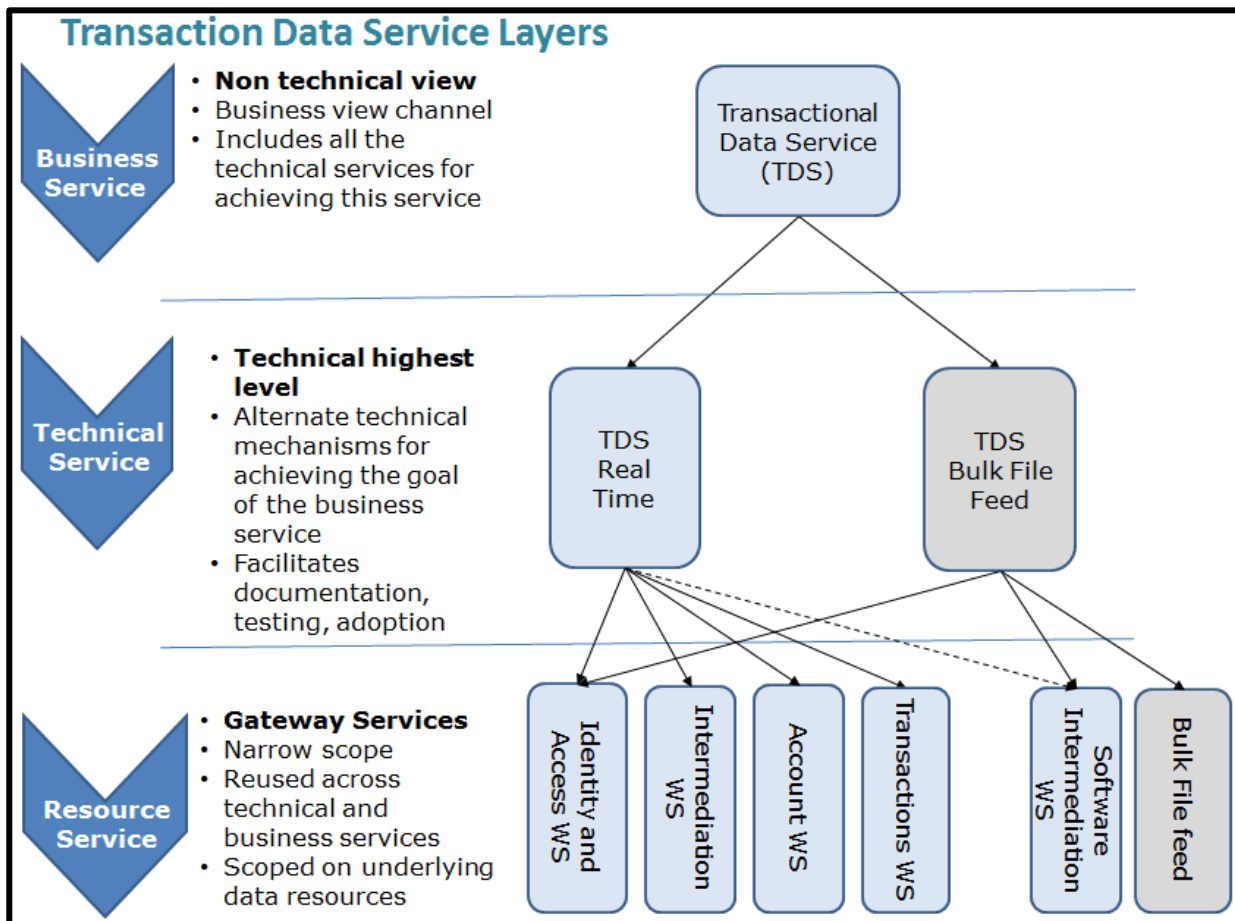
Please see the onboarding section in the TDS Overview Build Pack.

## 2 Solution design

### 2.1 Architecture

The TDS Real Time Technical Service provides similar data to the Bulk File Feed but only for one Customer's Accounts and Periods. It is not suitable for high volume usage.

The TDS Real Time Technical Service relies on a number of underlying web services as listed in the following diagram:



**Figure 3: Transaction Data Services Layers**

Accessing any of these services starts with the Software Provider application launching a user login session with Inland Revenue resulting in an OAuth token as per Use Case PUC201 Authenticate and Provide Consent – see [TDS Overview Build Pack](#). Basically:

1. Tax Agent uses their Software Provider Software application
2. The user is presented with a browser showing an Inland Revenue login the user needs to complete
3. Based on the login an OAuth token is returned to the Software Provider software
4. That token and the Software Provider's connection to Inland Revenue can optionally be used to call the Intermediation Service to obtain a list of clients accounts
5. Then TDS Real Time Queries are initiated, see a summary enumeration below under scope

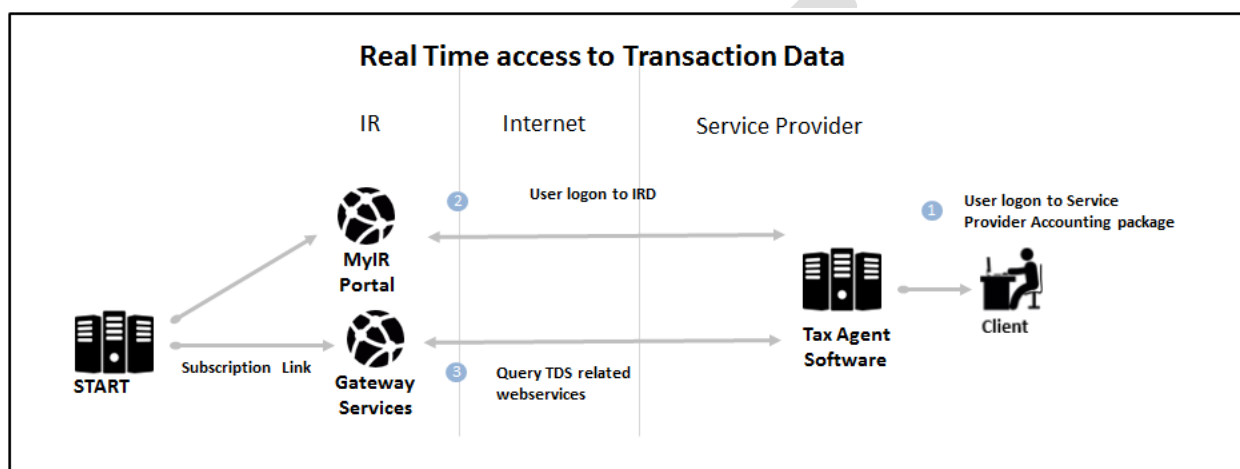
All requests thereafter rely on this OAuth token.



## 2.2 Service Scope

In any given session there could be any of the following depending on what data is urgently required (bearing in mind that this data is all available in the TDS bulk file feed sent overnight on business days):

- Optionally querying the **Intermediation Service** to get a listing of current Client Accounts for an agent (if it is the agent logged in)
- Call the **Account Service** for a specific Customer and get a list of Accounts and account summaries
- Call the **Account Service** again for a list of periods and period summaries inside an account
- Call the **Transactions Service** and get a list of transaction and transaction level data for a period



**Figure 4: Real Time Access to Transaction Data**

The diagram above depicts the following steps:

- The Tax Agent or other user logs into their Software Provider Software application
- That login is then used by the software to query TDS related web services

For the purposes of this document, it is assumed that necessary agent-client links are in place and the business context is understood; refer to the TDS Overview Build Pack for the broader context. More details about the Intermediation Service are available in the [Intermediation Build Pack](#).

More details about the Software Intermediation Service and the Software Provider linking are available in the [TDS Overview Build Pack and the Software Intermediation Build Pack](#).

## 2.3 Messaging

All SOAP messages require a SOAP header containing an **Action:** parameter (which has a default action resolving to the operation being called), as well as a SOAP body containing a structured XML payload. Please refer to the WSDL for the correct addresses.

The online WSDLs for the Gateway Services define an 'any' XML request and response structure, which then relies on a group of XSDs to define the data structure of those requests and responses. Each request and response type will define a lower, 'wrapper' element. To simplify analysis and code generation, a development oriented version of the WSDL and XSDs is provided with the build pack that has the any elements replaced with relevant types.

The Gateway Services allow the consumption of any structured XML payload but will be validated against the Inland Revenue-published XSDs.

This is a late binding validation, performed after authentication has been reviewed. The message structure of these services is a simple request/response. The XML request will be checked for well-formed XML before the schema validation. Responses to these requests will be in XML format as well and will be defined in the same schemas that define the requests. An exception to this is some scenarios where the request message does not have a well formed XML structure or is not valid or does not adhere to the SOAP protocol formats, the framework then generates a parsing exception that is not wrapped in XML nor has a response status code.

Any XML submissions in the SOAP body that do not meet the provided schemas will not be accepted by the Gateway Services. Incorrect namespaces will also fail validation against the published schemas.

### Example SOAP request structure

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:acc="https://services.ird.govt.nz/GWS/Account/"
  xmlns:ret="https://services.ird.govt.nz/GWS/Account/:types/RetrieveAccountSummariesRequest"
  xmlns:acc1="urn:www.ird.govt.nz/GWS:types/Account"
  xmlns:com="urn:www.ird.govt.nz/GWS:types/Common.v1">
  <soap:Header/>
    <a:Action>https://services.ird.govt.nz/GWS/Account/Account/RetrieveAccountSummaries</a:Action>
  <soap:Body>
    <acc:RetrieveAccountSummaries>
      <acc:RetrieveAccountSummariesRequestMsg>
        <ret:RetrieveAccountSummariesRequestWrapper>
          <acc1:retrieveAccountSummariesRequest>
            <com:softwareProviderData>
              <com:softwareProvider>START_SoftwareProvider</com:softwareProvider>
              <com:softwarePlatform>START_SoftwarePlatform</com:softwarePlatform>
              <com:softwareRelease>v1</com:softwareRelease>
            </com:softwareProviderData>
            <com:identifier IdentifierValueType="IRD">098885123</com:identifier>
          </acc1:retrieveAccountSummariesRequest>
        </ret:RetrieveAccountSummariesRequestWrapper>
      </acc:RetrieveAccountSummariesRequestMsg>
    </acc:RetrieveAccountSummaries>
  </soap:Body>
</soap:Envelope>
```

**Figure 5 : Example SOAP request structure**

## Example SOAP response structure

```
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing">
  <s:Header>
    <a:Action
s:mustUnderstand="1">https://services.ird.govt.nz/GWS/Account/Account/RetrieveAccountSum
mariesResponse</a:Action>
  </s:Header>
  <s:Body>
    <RetrieveAccountSummariesResponse
xmlns="https://services.ird.govt.nz/GWS/Account/">
      <RetrieveAccountSummariesResult
xmlns:b="https://services.ird.govt.nz/GWS/Account/:types/RetrieveAccountSummariesRespons
e" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RetrieveAccountSummariesResponseWrapper>
          <retrieveAccountSummariesResponse
xmlns="urn:www.ird.govt.nz/GWS/types/Account">
            <statusMessage xmlns="urn:www.ird.govt.nz/GWS/types/Common.v1">
              <statusCode>0</statusCode>
              <errorMessage/>
            </statusMessage>
            <responseBody>
              <account>
                <accountId>987264190GST002</accountId>
                <commenceDate>1986-10-01</commenceDate>
                <ceaseDate>9999-12-31</ceaseDate>
                <formattedAddress>C/O 26 A STEWART STREET WHAKATANE
3120</formattedAddress>
                <formattedName>Grigor, Peter W</formattedName>
                <filingFrequency>GSTM0</filingFrequency>
                <accountType>GST</accountType>
                <balance>445100.49</balance>
                <maxActivity>2017/9/22T18:49:11</maxActivity>
              </account>
              <account>
                <accountId>987264190IPE008</accountId>
                <commenceDate>1989-10-01</commenceDate>
                <ceaseDate>9999-12-31</ceaseDate>
                <formattedAddress>186 WHATAWHATA ROAD HAMILTON
3204</formattedAddress>
                <formattedName>TRUSTEES IN THE A M & A L ROBERTSON FAMILY
TRUST</formattedName>
                <filingFrequency>IPEM0</filingFrequency>
                <accountType>IPE</accountType>
                <balance>-9920.70</balance>
                <maxActivity>2017/9/27T22:58:19</maxActivity>
              </account>
              <account>
                <accountId>987264190PS0007</accountId>
                <commenceDate>1987-02-01</commenceDate>
                <ceaseDate>9999-12-31</ceaseDate>
                <formattedAddress>C/O 26 A STEWART STREET WHAKATANE
3120</formattedAddress>
                <formattedName>Grigor, Peter W</formattedName>
                <filingFrequency>PSOSEM</filingFrequency>
                <accountType>PSO</accountType>
                <balance>0.00</balance>
                <maxActivity>9999/12/31T00:00:00</maxActivity>
              </account>
            </retrieveAccountSummariesResponse>
          </b:RetrieveAccountSummariesResponseWrapper>
        </RetrieveAccountSummariesResult>
      </RetrieveAccountSummariesResponse>
    </s:Body>
  </s:Envelope>
```

```

    </account>
  </responseBody>
</retrieveAccountSummariesResponse>
</b:RetrieveAccountSummariesResponseWrapper>
</RetrieveAccountSummariesResult>
</RetrieveAccountSummariesResponse>
</s:Body>
</s:Envelope>

```

**Figure 6 : Example SOAP response structure**

## 2.4 Security

Gateway services requests are access controlled using an OAuth token to identify the user making the request. Users will authenticate using their Inland Revenue myIR credentials. For instructions on how to acquire an OAuth token, review the [Identity and Access Build Pack](#). For TDS Real Time web service requests an OAuth access token is required in the HTTP header.

Authorisation for using the Gateway Services is defined in the permissions set in myIR. Permissions will reflect those granted in myIR. For example, if a user does not have permission to file a return online, they will not be able to file a return via Gateway Services either. This applies to users granted access as staff inside an organisation or as staff in a Tax Agency.

The Gateway Services use an HTTPS transport layer, with HTTP1.1 transport protocol supported.

The Gateway Services also use the SOAP version 1.2 protocol.

The SOAP service contract is published using WSDL version 1.1.

Transport layer encryption is mandatory and Gateway Services generally use the TLS version 1.2 specification.

Inland Revenue requires the following ciphers and key strengths to be used:

<b>Encryption:</b>	Advanced Encryption Standard (AES)	FIPS 197	256-bit key
<b>Hashing:</b>	Secure Hash Algorithm (SHA-2)	FIPS 180-3	SHA-256

**Table 2: Ciphers and key strengths**

There will be two endpoints, summarised below (please see following table for more detail):

1. There is an endpoint for centralised cloud locations of Software Providers to connect to. This will involve mutual TLS certificates that need to be exchanged during the onboarding phase. On the cloud endpoint Inland Revenue has controls to shield Software Providers from issues caused by heavy usage from other providers.
2. For Software Providers connecting from desktops there is a separate endpoint that does not use mutual TLS. For this service, certificates do not need to be exchanged during onboarding. On the desktop endpoint Inland Revenue has less ability to shield consumers of the service from heavy usage by others.



Endpoint	Cloud	Desktop
Purpose	Default endpoint to connect to from Software Providers for Gateway Services	Additional endpoint provided to facilitate connecting from desktops which might be high volumes of sources addresses, transient DHCP addresses, not realistically associated with client side TLS certificates, not individually onboarded to setup certificate trust.
Client application type	Cloud applications	Desktop/native applications. For connecting from multiple decentralised clients.
Constraints	<p>Only for source locations with client side TLS certificates.</p> <p>On the cloud endpoint Inland Revenue has controls to shield Software Providers from issues caused by heavy usage from other providers.</p>	<p>Less scalable. Subject to tighter security controls.</p> <p>On the desktop endpoint Inland Revenue has less ability to shield consumers of the service from heavy usage by others. OAuth2 Refresh Tokens will not be offered to Desktop clients.</p>
Mutual TLS	Inland Revenue explicitly trusts the certificate the Software Provider associates with the TLS connection as client for Mutual TLS connections and uses it to identify the Software Provider in conjunction with the web service identification below.	Server side certificates only.
Minimum TLS version	1.2	1.0(+)
URL	Contains ../gateway/..	Contains ../gateway2/..
Port	4046	443 (Default https port)
Web service consumer Identification	<ul style="list-style-type: none"> <li>Each software provider is given a software platform ID during onboarding of type Customer ID, independent of endpoint</li> <li>To be identified in web service calls related to getting an OAuth token each cloud application will be given identity and access system client_id/client_secret credentials during onboarding to allow it to get OAuth tokens to call</li> </ul>	<ul style="list-style-type: none"> <li>Each software provider is given a software platform ID during onboarding of type Customer ID, independent of endpoint</li> <li>Desktop clients will be given different identity and access system client_id/client_secret credentials to cloud application clients.</li> </ul>

Endpoint	Cloud	Desktop
	this endpoint. <ul style="list-style-type: none"> <li>The mutual TLS certificate is used to identify the service provider</li> </ul>	
Firewalling in production	No IP address restrictions. Access limited by certificate enrolment.	No IP address restrictions.
Firewalling in non-production environments	No IP address restrictions. Access limited by certificate enrolment.	Firewalled –IP whitelisting needed

**Table 3: Endpoint details**

**Delegated permissions:** the services will allow one to retrieve all of the data for a customer that the calling user (as represented by the OAuth token) has access to. There might be additional accounts this identity does not have access to, those will not be mentioned. If an account or data in it is targeted by the request parameters but the user does not have permission an error will be returned. This access will depend on delegation permissions set up in myIR. If the token represents a user in a Tax Agency or other Intermediary the agent-client linking is also considered.

Gateway services like these typically have a 60 second timeout configured; this might be adjusted after testing.

## 2.5 End point URLs

**IMPORTANT:** The end points, schemas and WSDLs listed here are subject to change. For the authoritative definitions, please refer to the information provided on the Inland Revenue Gateway Services GitHub site: <https://github.com/InlandRevenue/Gateway-Services>

The end points for the Digital Test Environment XZT (Sliced data):

### Authentication

- Cloud: <https://q.services.ird.govt.nz>
- Desktop/native app: <https://q.services.ird.govt.nz>

### Gateway Services

- Cloud: <https://xzt.services.ird.govt.nz:4046/gateway/gws/account/> (Account service)
- Cloud: <https://xzt.services.ird.govt.nz:4046/gateway/gws/transactions/> (Transactions service)
- Desktop/native app: <https://xzt.services.ird.govt.nz/gateway2/gws/account/>
- Desktop/native app: <https://xzt.services.ird.govt.nz/gateway2/gws/transactions/>

The end points for the Digital Test Environment XZS (Un sliced data):

### Authentication

- Cloud/desktop/native apps: <https://q.services.ird.govt.nz>

### Gateway Services

- Cloud: <https://xzs.services.ird.govt.nz:4046/gateway/gws/account/>



- Cloud: <https://xzs.services.ird.govt.nz:4046/gateway/gws/transactions/>
- Desktop/native app: <https://xzs.services.ird.govt.nz/gateway2/gws/account/>
- Desktop/native app: <https://xzs.services.ird.govt.nz/gateway2/gws/transactions/>

The end points for Production are as follows:

### Authentication

- Cloud/desktop/native apps: <https://services.ird.govt.nz:443>

### Gateway Services

- Cloud: <https://services.ird.govt.nz:4046/gateway/gws/account/>
- Cloud: <https://services.ird.govt.nz:4046/gateway/gws/transactions/>
- Desktop/native app: <https://services.ird.govt.nz/gateway2/gws/account/>
- Desktop/native app: <https://services.ird.govt.nz/gateway2/gws/transactions/>

## 3 Operations, sample requests, and field descriptions

IMPORTANT: *The schemas are listed in the next chapter and are subject to change. For the authoritative definitions, please refer to the information provided on the Inland Revenue Gateway Services GitHub site:*

<https://github.com/InlandRevenue/Gateway-Services>

The structures of all Gateway Service operations are intended to produce the most efficient requests and responses. Any common structures and fields will be used across many schemas and Accounts through an intentional inheritance method. The section below describes the structure of each operation and the scenarios in which certain fields will be used in XML requests and responses.

This section contains schema aliases:

- Cmn: Common.V1.xsd
- Tds: TDSCommon.v1.xsd
- Acc: Account.V1.xsd
- Txn: Transactions.v1.xsd

All requests and responses live in the Account.xsd and Transactions.xsd.

All operations for these services will contain two standard header fields:

**softwareProviderData** and **identifier**.

For example:

```
<cmn:softwareProviderData>
  <cmn:softwareProvider>SoftwareProvider</cmn:softwareProvider>
  <cmn:softwarePlatform>SoftwarePlatform</cmn:softwarePlatform>
  <cmn:softwareRelease>v1</cmn:softwareRelease>
</cmn:softwareProviderData>
<cmn:identifier IdentifierValueType="IRD">987345678</cmn:identifier>
```

**Figure 7: Standard Header fields**

Field	Description
<b>softwareProvider</b>	The company that developed the software
<b>softwarePlatform</b>	The software package that is making the request
<b>softwareRelease</b>	The version of the software package
<b>Cmn:identifier</b>	<p>The value submitted for this field should contain only digits, with no dashes</p> <p>The identifier field is common across all gateway services but in TDS Real Time services refers to the Customer whose data is being queried. If the value cannot be resolved to a known context, or if it can but the provided OAuth token does not have the needed delegated permissions on it then the return status 4 unauthorised delegation is returned.</p>
<b>IdentifierValueType</b>	The ID type being submitted—can be IRD. The value submitted for this field should contain only digits, with no dashes.

**Table 4: Header field descriptions**

Proper use:

- The only softwareProvider data fields users will be able to input are the ones that were provided to Inland Revenue at the time of on-boarding.
- The identifier is that of the Customer whose data is being queried.

Example scenario:

- Tax agent wants to retrieve data for customer with IRD Number 898989898 and accounting package is calling the Account.RetrieveAccountSummaries operation
  - Software Provider calls /Account/RetrieveAccountSummaries with  
 <cmn:identifier IdentifierValueType="IRD">898989898</cmn:identifier>

### 3.1 Account.RetrieveAccountSummaries

The RetrieveAccountSummaries operation will be used to retrieve all of the accounts for a customer that the calling user (as represented by the OAuth token) has access to. There might be additional accounts this identity does not have access to, those will not be mentioned. This access will depend on delegation permissions set up in myIR. If the token represents a user in a tax agency or other intermediary the agent-client linking is also considered.

#### 3.1.1 Request

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
  xmlns:acc="https://services.ird.govt.nz/GWS/Account/"
  xmlns:ret="https://services.ird.govt.nz/GWS/Account/:types/RetrieveAccountS
  ummariesRequest"
  xmlns:acc1="urn:www.ird.govt.nz/GWS:types/Account"
  xmlns:com="urn:www.ird.govt.nz/GWS:types/Common.v1">
  <soap:Header/>
  <soap:Body>
```



```

<acc:RetrieveAccountSummaries>
  <acc:RetrieveAccountSummariesRequestMsg>
    <ret:RetrieveAccountSummariesRequestWrapper>
      <acc1:retrieveAccountSummariesRequest>
        <com:softwareProviderData>
          <com:softwareProvider>SoftwareProvider</com:softwareProvider>
          <com:softwarePlatform>SoftwarePlatform</com:softwarePlatform>
          <com:softwareRelease>1.0</com:softwareRelease>
        </com:softwareProviderData>
        <com:identifier
IdentifierValueType="IRD">123041028</com:identifier>
          <!--<acc1:filterByIdentifier>true</acc1:filterByIdentifier> -->
          <acc1:filterByClientListID
IdentifierValueType="IRD">123085302</acc1:filterByClientListID>
          <!--
<acc1:filterAccountType>XYZ</acc1:filterAccountType> -->
        </acc1:retrieveAccountSummariesRequest>
      </ret:RetrieveAccountSummariesRequestWrapper>
    </acc:RetrieveAccountSummariesRequestMsg>
  </acc:RetrieveAccountSummaries>
</soap:Body>
</soap:Envelope>
  
```

**Figure 8: Sample Request for Retrieve Account Summaries**

Field	Required	Description
<b>com:identifier</b>	Required	<p>Customer's IRD number always used for permission checks and sometimes used to constrain result data set(only if filterByIdentifier is true)</p> <p>In order to retrieve an entire client list across customers, then filterByIdentifier would be false, then this field won't restrict or impact the result data set.</p> <p>However, due to the overall design of the Gateway services this field still has to have a valid number, even in such a scenario where it won't be used.</p> <p>If this field does not have a valid IRD number then a response code like 4 Unauthorised Delegation will be returned since a valid context for verifying security delegation could not be established.</p>



<b>AccountType</b>	Optional, redundant	<p>Account type used for delegation permission checks only.</p> <p>Does not affect the resultant data set returned. Used only for permissions, If left blank delegation permission checks will pass if the calling OAuth token has view or higher permission on any account related to the customer specified in com:identifier. If populated delegation permission checks will pass if that specific account type has permissions granted on that customer.</p> <p>In either case the resultant data set will filter out any accounts the OAuth token does not have permissions on.</p>
<b>filterByIdentifier</b>	Optional, defaults to false	<p>If this value is omitted or set to false then the com:identifier will not filter or constrain the resultant data set, for most queries this field is expected to be set to true.</p> <p>Note that if this value is omitted or false the com:identifier still needs to contain a valid value to pass permission checks.</p>
<b>filterAccountType</b>	Optional	<p>Needs to contain a valid account type if provided</p> <p>If populated this will filter the result set to only contain Customer Accounts of the given type</p>
<b>filterByClientListID</b>	Optional	<p>Needs to contain a valid Tax Agent client list IRD number (Agency IRD number) if provided, cannot be a Tax Agent Prime IRD number</p> <p>If populated this will filter the result set to only contain Customer Accounts in the given agent client list</p>

**Table 5: Request fields for Retrieve Account Summaries**

Some sample scenarios:

Intent	Fields to use
<b>Return all accounts for a Customer</b>	com:identifier: Customer IRD number filterByIdentifier: true
<b>Return GST account for a customer</b>	com:identifier AccountType: GST (optional, affects Status Code if OAuth token does not have permission) filterByIdentifier:true filterAccountType: GST
<b>Return all accounts for a customer in a tax agent client list</b>	com:identifier filterByIdentifier: true filterByClientListID: client list IRD number



	(AgencyIRD number)
<b>Return all accounts in a tax agent client list</b>	com:identifier: any valid IRD number OAuth token has access to, does not affect result data set  filterByIdentifier: false  filterByClientListID: client list IRD number (AgencyIRD number)
<b>Return all of a Tax Agent's own accounts</b>	com:identifier: Tax Agent prime IRD number  filterByIdentifier: true

### 3.1.2 Response

```

<RetrieveAccountSummariesResponse
xmlns="https://services.ird.govt.nz/GWS/Account/">
  <RetrieveAccountSummariesResult
xmlns:b="https://services.ird.govt.nz/GWS/Account/:types/RetrieveAccountSummariesResponse" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
    <b:RetrieveAccountSummariesResponseWrapper>
      <retrieveAccountSummariesResponse
xmlns="urn:www.ird.govt.nz/GWS:types/Account">
        <statusMessage xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
          <statusCode>0</statusCode>
          <errorMessage/>
        </statusMessage>
        <responseBody>
          <account>
            <accountId>987264190GST002</accountId>
            <commenceDate>1986-10-01</commenceDate>
            <ceaseDate>9999-12-31</ceaseDate>
            <formattedAddress>C/O 26 A STEWART STREET WHAKATANE
3120</formattedAddress>
            <formattedName>Grigor, Peter W</formattedName>
            <filingFrequency>GSTM0</filingFrequency>
            <accountType>GST</accountType>
            <balance>445100.49</balance>
            <maxActivity>2017/9/22T18:49:11</maxActivity>
          </account>
          <account>
            <accountId>987264190IPE008</accountId>
            <commenceDate>1989-10-01</commenceDate>
            <ceaseDate>9999-12-31</ceaseDate>
            <formattedAddress>186 WHATAWHATA ROAD HAMILTON
3204</formattedAddress>
            <formattedName>TRUSTEES IN THE A M & A L ROBERTSON FAMILY
TRUST</formattedName>
            <filingFrequency>IPEM0</filingFrequency>
            <accountType>IPE</accountType>
            <balance>-9920.70</balance>
            <maxActivity>2017/9/27T22:58:19</maxActivity>
          </account>
          <account>
            <accountId>987264190PS0007</accountId>
            <commenceDate>1987-02-01</commenceDate>
            <ceaseDate>9999-12-31</ceaseDate>
            <formattedAddress>C/O 26 A STEWART STREET WHAKATANE
3120</formattedAddress>

```

```

    <formattedName>Grigor, Peter W</formattedName>
    <filingFrequency>PSOSEM</filingFrequency>
    <accountType>PSO</accountType>
    <balance>0.00</balance>
    <maxActivity>9999/12/31T00:00:00</maxActivity>
  </account>
</responseBody>
</retrieveAccountSummariesResponse>
</b:RetrieveAccountSummariesResponseWrapper>
</RetrieveAccountSummariesResult>
</RetrieveAccountSummariesResponse>

```

**Figure 9: Sample Response Retrieve Account Summaries**

Element	Field	Description
<b>Please see status / error messages in Section 5</b>		
<b>accountId</b>	Account ID	The Identifier of the Account
<b>commenceDate</b>	Commence	Commencement Date of the Account
<b>ceaseDate</b>	Cease	Cessation Date of Account
<b>formattedAddress</b>	Address	Note the bulk file and overview does not contain this as it is not considered material to TDS but for other usage purposes.
<b>formattedName</b>	Name	Note the bulk file and overview does not contain this as it is not considered material to TDS but for other usage purposes.
<b>filingFrequency</b>	Filing Frequency	The filing frequency for the Account – See <a href="#">TDS Overview Build Pack Appendix B Filing Frequency Codes</a>
<b>accountType</b>	Account Type	The type of account – e.g. GST, INC
<b>balance</b>	Balance	The Balance for the account in total
<b>maxActivity</b>	MaxActivity	The last date/Time of Activity on Account

**Table 6: Response field descriptions Retrieve Account Summaries**

### 3.2 Account.RetrievePeriodSummaries

The RetrievePeriodSummaries operation will be used to retrieve the periods for an account that the calling user (as represented by the OAuth token) has access to. If the user does not have access an error will be returned. This access will depend on delegation permissions set up in myIR. If the token represents a user in a tax agency or other intermediary the agent-client linking is also considered.

#### 3.2.1 Request

```

<acc:RetrievePeriodSummaries>
  <acc:RetrievePeriodSummariesRequestMsg>
    <ret:RetrievePeriodSummariesRequestWrapper>
      <acc1:retrievePeriodSummariesRequest>
        <com:softwareProviderData>
          <com:softwareProvider>SoftwareProvider</com:softwareProvider>
          <com:softwarePlatform>SoftwarePlatform</com:softwarePlatform>
          <com:softwareRelease>v1</com:softwareRelease>
        </com:softwareProviderData>
        <com:identifier IdentifierValueType="IRD">987885123</com:identifier>
      </acc1:retrievePeriodSummariesRequest>
    </ret:RetrievePeriodSummariesRequestWrapper>
  </acc:RetrievePeriodSummariesRequestMsg>
</acc:RetrievePeriodSummaries>

```

```

    <!--Required-->
    <com:accountType>GST</com:accountType>
  </acc1:retrievePeriodSummariesRequest>
</ret:RetrievePeriodSummariesRequestWrapper>
</acc:RetrievePeriodSummariesRequestMsg>
</acc:RetrievePeriodSummaries>

```

**Figure 10: Sample Request Retrieve Period Summaries**

Field	Required	Description
<b>Identifier</b>	Required	Customer IRD number
<b>AccountType</b>	<b>Required</b> - Note that the schema saying it is optional is not accurate for this operation	Account type

**Table 7: Request field descriptions Retrieve Period Summaries**

### 3.2.2 Response

Please also see RetrievePeriodSummariesResponse.xml.

```

    <endDate>2017-05-31</endDate>
    <filingFrequency>RWTMO</filingFrequency>
    <tax>0.00</tax>
    <penalty>0.00</penalty>
    <penaltyForecast>0.00</penaltyForecast>
    <interest>0.00</interest>
    <interestForecast>0.00</interestForecast>
    <other>0.00</other>
    <otherForecast>0.00</otherForecast>
    <credit>0.00</credit>
    <creditForecast>0.00</creditForecast>
    <balance>0.00</balance>
    <activity>9999-12-31T00:00:00Z</activity>
  </period>
  <period>
    <beginDate>2017-06-01</beginDate>
    <endDate>2017-06-30</endDate>
    <filingFrequency>RWTMO</filingFrequency>
    <tax>0.00</tax>
    <penalty>0.00</penalty>
    <penaltyForecast>0.00</penaltyForecast>
    <interest>0.00</interest>
    <interestForecast>0.00</interestForecast>
    <other>0.00</other>
    <otherForecast>0.00</otherForecast>
    <credit>0.00</credit>
    <creditForecast>0.00</creditForecast>
    <balance>0.00</balance>
    <activity>9999-12-31T00:00:00Z</activity>
  </period>

```

```

    <period>
      <beginDate>2017-07-01</beginDate>
      <endDate>2017-07-31</endDate>
      <filingFrequency>RWTMO</filingFrequency>
      <tax>0.00</tax>
      <penalty>0.00</penalty>
      <penaltyForecast>0.00</penaltyForecast>
      <interest>0.00</interest>
      <interestForecast>0.00</interestForecast>
      <other>0.00</other>
      <otherForecast>0.00</otherForecast>
      <credit>0.00</credit>
      <creditForecast>0.00</creditForecast>
      <balance>0.00</balance>
      <activity>9999-12-31T00:00:00Z</activity>
    </period>
  </period>
  <period>
    <beginDate>2017-08-01</beginDate>
    <endDate>2017-08-31</endDate>
    <filingFrequency>RWTMO</filingFrequency>
    <tax>0.00</tax>
    <penalty>0.00</penalty>
    <penaltyForecast>0.00</penaltyForecast>
    <interest>0.00</interest>
    <interestForecast>0.00</interestForecast>
    <other>0.00</other>
    <otherForecast>0.00</otherForecast>
    <credit>0.00</credit>
    <creditForecast>0.00</creditForecast>
    <balance>0.00</balance>
    <activity>9999-12-31T00:00:00Z</activity>
  </period>
</responseBody>
</retrievePeriodSummariesResponse>
</b:RetrievePeriodSummariesResponseWrapper>
</RetrievePeriodSummariesResult>
</RetrievePeriodSummariesResponse>
</s:Body>
</s:Envelope>
  
```

**Figure 11: Sample Response Retrieve Period Summaries**

Parent Element	Element	Description
<b>statusMessage</b>	statusCode	Please see status / error messages in chapter 5
<b>period</b>	beginDate	The first day of the period
<b>period</b>	endDate	The last day of the period
<b>period</b>	filingFrequency	The filing frequency for the Account – See <a href="#">TDS Overview Build Pack Appendix B Filing Frequency Codes</a>
<b>period</b>	tax	The amount assessed
<b>period</b>	penalty	The amount of Penalty applied
<b>period</b>	penaltyForecasted	The additional amount of Penalty forecasted for date of request, since the time of last posted transaction



<b>period</b>	interest	The amount of interest applied
<b>period</b>	interestForecasted	The additional amount of interest forecasted for date of request, since the time of last posted transaction
<b>period</b>	other	Amounts other than penalty, interest, payments or credit transfers in that have been applied to this period e.g. remission, write off or credit transfer out
<b>period</b>	otherForecasted	The additional amount of other amounts forecasted for date of request, since the time of last posted transaction
<b>period</b>	credit	Payments or credit transfers in which have been made for this period
<b>period</b>	creditForecasted	The additional amount of credit amounts forecasted for date of request, since the time of last posted transaction
<b>period</b>	balance	The Balance for the period
<b>period</b>	activity	The last date/time of activity on the period. This date should be compared to the last set of data received – not the last transaction Process date

**Table 8: Response field descriptions Retrieve Period Summaries**

### 3.3 Transactions.RetrieveList

The RetrieveList operation will be used to retrieve all of the transactions and transaction level data that the calling user (as represented by the OAuth token) has access to. This access will depend on delegation permissions set up in myIR. If the token represents a user in a tax agency or other intermediary the agent-client linking is also considered.

#### 3.3.1 Request

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
xmlns:tran="https://services.ird.govt.nz/GWS/Transactions/"
xmlns:ret="https://services.ird.govt.nz/GWS/Transactions/:types/RetrieveListRequest">
  <soap:Header/>
  <soap:Body>
    <tran:RetrieveList>
      <tran:RetrieveListRequestMsg>
        <ret:RetrieveListRequestWrapper>
          <retrieveListRequest
xmlns="urn:www.ird.govt.nz/GWS/types/Transactions">
            <softwareProviderData
xmlns="urn:www.ird.govt.nz/GWS/types/Common.v1">
              <softwareProvider>SoftwareProvider</softwareProvider>
              <softwarePlatform>SoftwarePlatform</softwarePlatform>
              <softwareRelease>1</softwareRelease>
            </softwareProviderData>
            <identifier IdentifierValueType="ACCIRD"
xmlns="urn:www.ird.govt.nz/GWS/types/Common.v1">011264190</identifier>
            <accountType
xmlns="urn:www.ird.govt.nz/GWS/types/Common.v1">GST</accountType>
            <filingPeriod>2016-12-31</filingPeriod>
          </retrieveListRequest>
        </ret:RetrieveListRequestWrapper>
      </tran:RetrieveListRequestMsg>
    </tran:RetrieveList>
  </soap:Body>
</soap:Envelope>
```



```

    </ret:RetrieveListRequestWrapper>
  </tran:RetrieveListRequestMsg>
</tran:RetrieveList>
</soap:Body>
</soap:Envelope>

```

**Figure 12: Sample Request Retrieve Transactions**

Field	Required	Description
<b>Identifier</b>	Required	Customer IRD number
<b>AccountType</b>	<b>Required</b> Note that the schema saying it is optional is not accurate for this operation	Account type
<b>filingPeriod</b>	Required	End date for the filing period

**Table 9: Request field descriptions Retrieve Transactions**

### 3.3.2 Response

This response is shortened below; please see TransactionListExample.xml for the full example

```

<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:a="http://www.w3.org/2005/08/addressing">
  <s:Header>
    <a:Action
s:mustUnderstand="1">https://services.ird.govt.nz/GWS/Transactions/Transactions/Retrieve
ListResponse</a:Action>
  </s:Header>
  <s:Body>
    <RetrieveListResponse xmlns="https://services.ird.govt.nz/GWS/Transactions/">
      <RetrieveListResult
xmlns:b="https://services.ird.govt.nz/GWS/Transactions/:types/RetrieveListResponse"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RetrieveListResponseWrapper>
          <retrieveListResponse xmlns="urn:www.ird.govt.nz/GWS:types/Transactions">
            <statusMessage xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <statusCode>0</statusCode>
              <errorMessage/>
            </statusMessage>
            <responseBody>
              <list>
                <pendingPayments>
                  <payment>
                    <paymentID>1414376704</paymentID>
                    <amount>194384.25</amount>
                    <pendingDate>2017-04-13</pendingDate>
                  </payment>
                </pendingPayments>
                <bankAccounts>
                  <bankAccount>
                    <transactionID>185100320</transactionID>
                    <nzBankStandard>
                      <bank>02</bank>

```





```

    <branch>0568</branch>
    <account>00195445</account>
    <suffix>0000</suffix>
  </nzBankStandard>
</bankAccount>
<bankAccount>
  <transactionID>831736832</transactionID>
  <otherBankStandard>
    <branch>021000021</branch>
    <account>0175380001</account>
  </otherBankStandard>
</bankAccount>

<bankAccount>
  <transactionID>1905478656</transactionID>
  <ibanBankStandard>
    <twoCharCountryCode>AT</twoCharCountryCode>
    <checkDigit>61</checkDigit>
  </ibanBankStandard>
</bankAccount>
<bankAccount>
  <transactionID>160648192</transactionID>
  <ausBankStandard>
    <BSB>032062</BSB>
    <account>00413090</account>
  </ausBankStandard>
</bankAccount>
<bankAccount>
  <transactionID>1234390016</transactionID>
  <nzBankCreditUnion>
    <bank>02</bank>
    <branch>3044</branch>
    <account>04005813</account>
    <suffix>0000</suffix>
    <referenceNumber>345435345</referenceNumber>
  </nzBankCreditUnion>
</bankAccount>
<bankAccount>
  <transactionID>429083648</transactionID>
  <usCanBankBankStandard>
    <routingNumber>021000021</routingNumber>
    <accountNumber>9101209543</accountNumber>
  </usCanBankBankStandard>
</bankAccount>
<bankAccount>
  <transactionID>1898745344</transactionID>
  <swiftBankStandard>
    <swiftBICcode>04456456</swiftBICcode>
  </swiftBankStandard>
</bankAccount>
<basicBankAccountNumber>456456456</basicBankAccountNumber>
  </swiftBankStandard>
</bankAccount>

</bankAccounts>
<transfers>
  <transfer>
    <transactionID>449269792</transactionID>
    <otherAccountID>011264190</otherAccountID>
    <otherAccountType>GST</otherAccountType>
  </transfer>
</transfers>

```

```

    <otherPeriod>2017-01-31</otherPeriod>
  </transfer>
</transfer>
  <transactionID>717705248</transactionID>
  <otherAccountID>011264190</otherAccountID>
  <otherAccountType>GST</otherAccountType>
  <otherPeriod>2017-01-31</otherPeriod>
</transfer>

</transfers>
<bills>
  <bill>
    <billID>1653458944</billID>
    <billDisplay>2</billDisplay>
    <dueDate>2018-01-03</dueDate>
    <tax>0.00</tax>
    <penalty>0.00</penalty>
    <penaltyForecast>0.00</penaltyForecast>
    <interest>0.00</interest>
    <interestForecast>0.00</interestForecast>
    <other>1253.75</other>
    <otherForecast>0.00</otherForecast>
    <credit>-1253.75</credit>
    <creditForecast>0.00</creditForecast>
    <balance>0.00</balance>
    <transactions>
      <transaction>
        <amount>76.26</amount>
        <transactionID>160648192</transactionID>
        <transactionType>DSBIAC</transactionType>
        <postedDate>2017-11-30</postedDate>
        <effectiveDate>2017-11-30</effectiveDate>
        <linkID>781405184</linkID>
      </transaction>
      <transaction>
        <amount>184.60</amount>
        <transactionID>429083648</transactionID>
        <transactionType>DSBIAC</transactionType>
        <postedDate>2017-12-01</postedDate>
        <effectiveDate>2017-12-01</effectiveDate>
        <linkID>1058229248</linkID>
      </transaction>
    </transactions>
  </bill>
  <bill>
    <billID>258672768</billID>
    <billDisplay>1</billDisplay>
    <dueDate>9999-12-31</dueDate>
    <tax>0.00</tax>
    <penalty>50.00</penalty>
    <penaltyForecast>0.00</penaltyForecast>
    <interest>0.00</interest>
    <interestForecast>0.00</interestForecast>
    <other>824449.94</other>
    <otherForecast>0.00</otherForecast>
    <credit>-824499.94</credit>
    <creditForecast>0.00</creditForecast>
    <balance>0.00</balance>
    <transactions>
      <transaction>

```



```

    <amount>518708.30</amount>
    <transactionID>185100320</transactionID>
    <transactionType>DSBDIR</transactionType>
    <postedDate>2017-04-03</postedDate>
    <effectiveDate>2017-04-03</effectiveDate>
    <linkID>923426240</linkID>
  </transaction>
  <transaction>
    <amount>7791.43</amount>
    <transactionID>449269792</transactionID>
    <transactionType>FWDGST</transactionType>
    <postedDate>2017-03-31</postedDate>
    <effectiveDate>2017-02-28</effectiveDate>
    <linkID>1814421312</linkID>
  </transaction>

</bill>
</bills>
<transaction>
  <amount>-13189.27</amount>
  <transactionID>9653248</transactionID>
  <transactionType>RECGST</transactionType>
  <postedDate>2017-11-30</postedDate>
  <effectiveDate>2017-11-20</effectiveDate>
  <linkID>0</linkID>
</transaction>
<transaction>
  <amount>-207623.52</amount>
  <transactionID>69590848</transactionID>
  <transactionType>RECGST</transactionType>
  <postedDate>2017-02-28</postedDate>
  <effectiveDate>2016-11-28</effectiveDate>
  <linkID>0</linkID>
</transaction>

</list>
</responseBody>
</retrieveListResponse>
</b:RetrieveListResponseWrapper>
</RetrieveListResult>
</RetrieveListResponse>
</s:Body>
</s:Envelope>
  
```

**Figure 13: Sample Response Retrieve Transactions**

Parent Element	Element	Field	Description
<b>statusMessage</b>	<b>statusCode</b>		Please see status / error messages in chapter 5
<b>pendingPayments</b>	<b>payment.paymentID</b>	Payment ID	The unique identifier for the payment
<b>pendingPayments</b>	<b>payment.amount</b>	Pending Amount	The amount of the payment
<b>pendingPayments</b>	<b>payment.pendingDate</b>	Pending Date	The date the payment was made pending



Parent Element	Element	Field	Description
<b>bankAccounts</b>	<b>bankAccount</b>		
<b>bankAccount</b>	<b>transactionID</b>	Transaction ID	Transaction ID of the Refund which used this Bank Account
<b>bankAccount</b>	<b>nzBankStandard.bank</b>	Bank Account Bank Number	The Bank where the Account is held
<b>bankAccount</b>	<b>nzBankStandard.branch</b>	Bank Account Branch Number	The branch number of the bank
<b>bankAccount</b>	<b>nzBankStandard.account</b>	Bank Account Number	Number of the bank account
<b>bankAccount</b>	<b>nzBankStandard.suffix</b>	Bank Account Number Suffix	Suffix to the bank account number
<b>transfers</b>	<b>transfer</b>		
<b>transfer</b>	<b>transactionID</b>	Transaction ID	The unique identifier for the transaction
<b>n/a</b>	<b>(Implied by the context)</b>	IRD Number	The IRD number of the account to which the money went or from which it came
<b>transfer</b>	<b>otherAccountID</b>	Transfer Account	The IRD number part of the Account to which the amount was applied or from which it was received
<b>transfer</b>	<b>transfer.otherAccountType</b>	Transfer Account	The Account type part of the Account to which the amount was applied or from which it was received
<b>transfer</b>	<b>otherPeriod</b>	Transfer Period	The period for that Account to which the amount has been applied – Period above
<b>bills</b>	<b>bill</b>		
<b>bill</b>	<b>billID</b>	Bill ID	The Bill Number
<b>bill</b>	<b>billDisplay</b>	Bill Display ID	Easy to use ID for bill
<b>bill</b>	<b>dueDate</b>	Bill Due Date	The due date for the Bill
<b>bill</b>	<b>balance</b>	Bill Balance	The Balance due on the Bill
<b>bill</b>	<b>credit</b>	Bill Credit	The credits applied towards the Bill
<b>bill</b>	<b>creditForecasted</b>	Bill Credit Forecasted	Additional credit amount forecasted for date of request applied



Parent Element	Element	Field	Description
			towards the bill
<b>bill</b>	<b>other</b>	Bill Balance	Amounts other than penalty, interest, payments or credit transfers in that have been applied to this bill e.g. remission, write off or credit transfer out
<b>bill</b>	<b>otherForecasted</b>	Bill Forecasted Other	Additional amount forecasted for date of request for type other applied towards the bill
<b>bill</b>	<b>penalty</b>	Bill Penalty	The penalty amount on the Bill as at last posted transaction
<b>bill</b>	<b>penaltyForecasted</b>	Bill Forecasted Penalty	Additional penalty forecasted for date of request applied on the bill
<b>bill</b>	<b>interest</b>	Bill Interest	The interest amount on the Bill as at last posted transaction
<b>bill</b>	<b>interestForecasted</b>	Bill Forecasted Interest	Additional interest forecasted for date of request applied on the bill
<b>bill</b>	<b>transactions</b>		List of transactions related to bill contributing to same due date
<b>list</b>	<b>transactions</b>		Transactions not directly related to a bill and its due date
<b>transactions</b>	<b>transaction</b>		
<b>transaction</b>	<b>amount</b>	Amount	The amount of the transaction
<b>transaction</b>	<b>transactionID</b>	Transaction ID	The unique identifier for the transaction
<b>transaction</b>	<b>transactionType</b>	Transaction Type	The code for the Type of Transaction
<b>transaction</b>	<b>postedDate</b>	Posted Date	The Posted Date for this transaction
<b>transaction</b>	<b>effectiveDate</b>	Effective Date	The Effective Date for this transaction
<b>transaction</b>	<b>linkID</b>	Link ID	The unique identifier for a linked transaction e.g. a transaction which has been reversed by this



Parent Element	Element	Field	Description
			transaction

**Table 10: Response field descriptions Retrieve Transactions**

## Schemas and WSDLs

**IMPORTANT:** The schemas and WSDLs listed here are subject to change. For the authoritative definitions, please refer to the information provided on the Inland Revenue Gateway Services GitHub site: <https://github.com/InlandRevenue/Gateway-Services>

### 4.1 Schemas

All schemas for the Account and Transactions services import a common.xsd which has some data types specific to Inland Revenue. This common.xsd will be used in other gateway services outside of the /Account/ or /Transactions/ namespace so it must be kept up-to-date, without numerous redundant versions remaining.

The Account.xsd and Transactions.xsd import the Common.xsd and TDSCommon.xsd and creates data types to be used within the operations. It also includes the request and response root elements for the supported operations.



DevWSDLandSchemas\_TDS.zip

### 4.2 WSDLs

The Account Gateway Service has one WSDL, which has a target namespace of <https://services.ird.govt.nz/GWS/Account/> and can be found at

<https://services.ird.govt.nz/GWS/Account/?singleWSDL>.

The Transactions Gateway Service has one WSDL, which has a target namespace of <https://services.ird.govt.nz/GWS/Transactions/> and can be found at

<https://services.ird.govt.nz/GWS/Transactions/?singleWSDL>.

As explained in section 2.3 "Messaging" the online WSDLs have any elements, the development version of the WSDLs shipped with the build pack are more strongly typed to facilitate development and analysis and testing.

All WSDL messages follow this naming convention:

Return\_<operation>\_InputMessage or Return\_<operation>\_OutputMessage.

```
<wsdl:portType name="Transactions">
...
    <wsdl:operation name="RetrieveList">
...
</wsdl:service name="Transactions">
```

**Figure 14: WSDL messages naming Convention**



## 5 Responses

The response message from the Gateway Services always includes a status code and status message that describes how successfully the gateway service call was carried out. Following the status message will be the responseBody, which will return the operations response.

### 5.1 Gateway Services response codes

The following response codes are used by the Account and Transactions Services:

Standard codes	Standard message	Description	Account Service	Transaction Service
<b>-1</b>	An unknown error has occurred	This is generally what we'll return for internal errors that are not due to the service request. This error will be logged by the Gateway Services and evaluated the next business day.	Y	Y
<b>0</b>	Success	This resembles a successful web service call.	Y	Y
<b>1</b>	Authentication Failure	General authentication failure status. Authentication failure means the token provided is not a valid token.	Y	Y
<b>2</b>	Missing Authentication Token(s)	No OAuth token in HTTP header as expected.	Y	Y
<b>3</b>	Unauthorised Access	Token could not be validated, might be invalid format, or infrastructure failure.	Y	Y
<b>4</b>	Unauthorised Access	Access is not permitted to delegate. Could also happen due to invalid context e.g. invalid IRD number	Y	Y
<b>5</b>	Unauthorised Vendor	The vendor provided is not authorised to use this service (not onboarded).	Y	Y
<b>6</b>	Authentication Expired	Token authentication has expired and needs to be refreshed.	Y	Y
<b>20</b>	Unrecognized XML Request	The XML submitted is not recognisable and no schema can be determined.	Y	Y
<b>21</b>	XML Request Failed Validation	The XML structure did not meet the definition laid out by the schemas published by Inland Revenue.	Y	Y
<b>100</b>	Could not extract data from xml payload	Could not extract data from xml payload	Y	Y
Note the following error codes are each only used by 1 service				
<b>104</b>	Invalid Filing Period	The filing period provided did not match a valid filing period for the account		Y
<b>109</b>	Filter account type not found	Filter account type is not found in configuration	Y	
<b>110</b>	The provided IRD Number has no	The provided IRD Number has no matching accounts based on filter criteria and relevant to	Y	



accounts.		TDS.	
<b>111</b>	Filter account type is not supported in this service	Filter account type is not configured to provide data through TDS.	Y
<b>111</b>	The provided account type is not supported for this operation	The provided account type is not authorised in the current operation	Y
In some scenarios where the request message does not have a well formed XML structure or is not valid or does not adhere to the SOAP protocol formats, the framework generates a parsing exception that is not wrapped in XML nor has a response status code.			

**Table 11: Gateway Services Response Codes**

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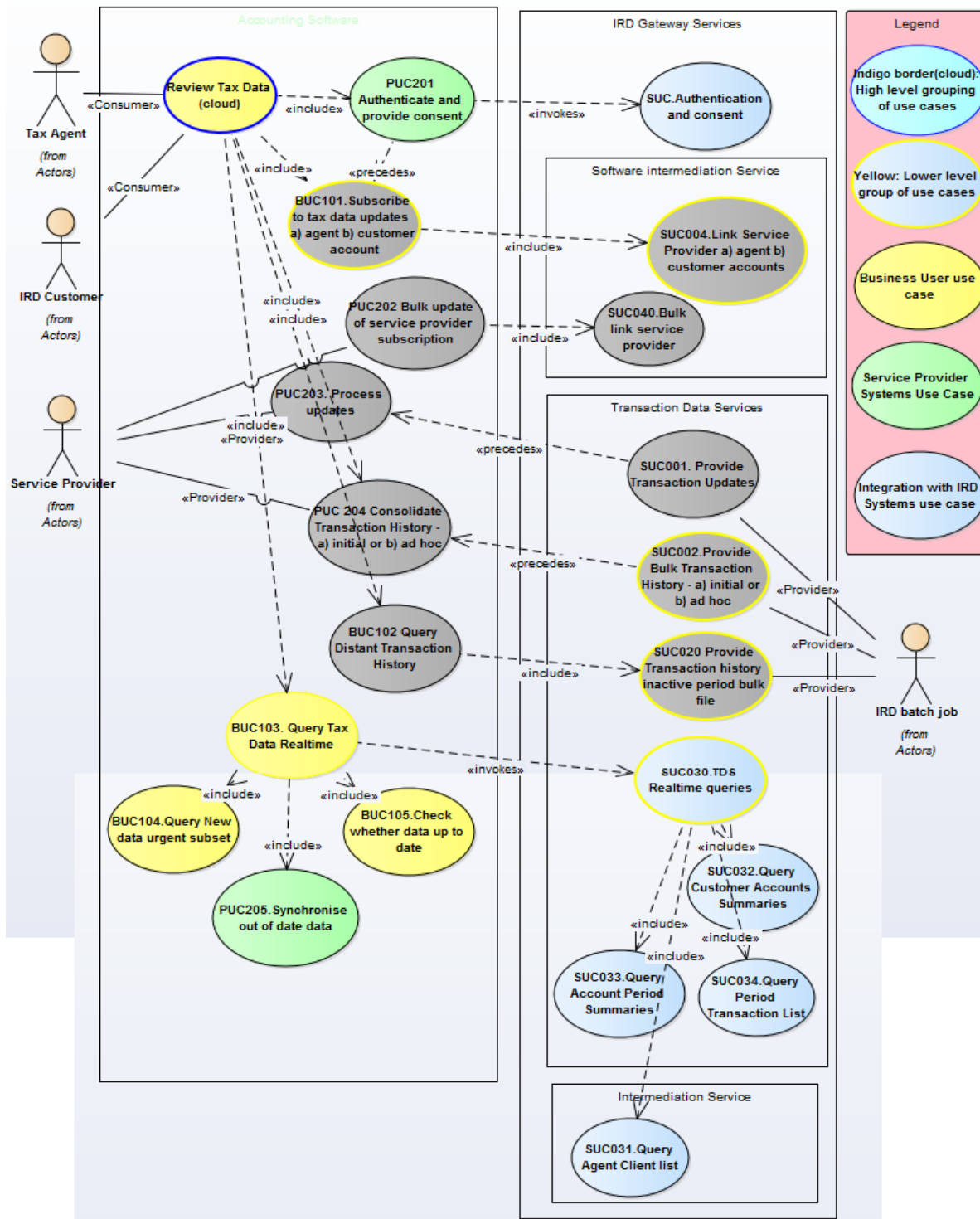


## 6 Use cases and scenarios

This section:

- summarises overall TDS use cases as further described in the TDS overview build pack,
- summarises the technical steps in the Software Provider and user business use cases and scenarios that are described in the TDS overview build pack
- and summarises the operations described above as systems use cases - It does not repeat all the information provided on these higher up in this document

### 6.1 TDS Use case overview



**Figure 15: Use case overview**

Use cases have been classified into the following types:

(Note: High level use cases are broken down in the Build Pack concerned)

Use case Group	Description	Colour	Use Case	Build Pack
<b>Tax Agent /Customer</b>	Use cases specific to the Customer / Tax Agent point of view	Yellow	BUC101 Subscribe to tax data updates	TDS Overview Build Pack
			BUC102 Query Distant Transaction History	TDS Overview Build Pack
			BUC103 Query Tax Data real-time	TDS Overview Build Pack
			BUC104 Query New data urgent subset	TDS Overview Build Pack
			BUC105 Check whether data up to date	TDS Overview Build Pack
<b>Software Provider</b>	Some systems use cases on the Software Provider side are not user driven and broader than the integration with IR	Green	PUC201 Authenticate and provide and consent	TDS Overview Build Pack
			PUC202 Bulk update of Software Provider subscription	TDS Overview Build Pack
			PUC203 Process updates	TDS Overview Build Pack
			PUC204 Consolidate Transaction History - a) initial or b) ad hoc	TDS Overview Build Pack
			PUC205 synchronise out of date data	TDS Overview Build Pack
<b>Systems use cases</b>	The corresponding technical steps inside the above use cases which are required to integrate with IR	Blue	SUC Authentication and consent	Identity & Access Build Pack
			SUC Link Software Provider	Software Intermediation Build Pack
			SUC Bulk Link Software Provider	TDS Overview Build Pack
			SUC001 Provide Transaction Updates	TDS Bulk File Build Pack
			SUC002 Provide Bulk Transaction History - a) initial or b) ad hoc	TDS History Bulk File Build Pack
			SUC020 Provide transaction history inactive period bulk file	TDS History Bulk File Build Pack
			SUC030 TDS real-time queries	This document



Use case Group	Description	Colour	Use Case	Build Pack
			SUC031 Query Agent Client List	Intermediation Build Pack
			SUC032 Query Customer Account Summaries	This document, operation Account.RetrieveAccountSummaries
			SUC033 Query Account Period Summaries	This document, operation Account.RetrievePeriodSummaries
			SUC034 Query Period Transaction List	This document, operation Transactions.RetrieveList

**Table 12: Use cases and their relevant documentation**

In the [TDS Overview Build Pack](#) sample process scenarios provide some organisational/business summary goal context.

## 6.2 TDS Real time scenarios and use cases

Possible scenarios or business use cases where Tax Agents/Customers might want to use this service (see [TDS Overview Build Pack](#)).

Scenario	Typical sequence
<p><b>A. BUC104. Tax Agent has new client or new software package and wishes to retrieve data for specific Accounts and specific Periods before the overnight bulk file push.</b></p> <p><b>(If the tax agent wants to do a double check on an existing client for some reason that would be BUC105 below)</b></p>	<ol style="list-style-type: none"> <li>1. User is a tax agent who might have linked a new client through eServices. There might be some urgent periods to look at and agent decides to not wait for overnight bulk feed but to look at a small subset of the data through real time queries.</li> <li>2. User signs onto Software Provider software and navigates to look at IRD data</li> <li>3. Software Provider software user starts an independent browser session for the user to log onto the Inland Revenue site</li> <li>4. At the end of this logon sequence an OAuth token is returned for use in further calls to the Gateway Services. See the <a href="#">Identity and Access Build Pack</a> for more information</li> <li>5. The Software Provider software optionally uses this token in a call to the Inland Revenue Intermediation Gateway service to request a Client List</li> <li>6. The User receives the Client List and selects a Client</li> <li>7. The Software Provider software reuses the token in a call to <b>Account.RetrieveAccountSummaries</b> to request Account Summaries for a Client</li> <li>8. The User receives the Account Summary data and selects an Account for the Client</li> <li>9. The Software Provider software reuses the token (possibly has to renew the token depending on the time that has passed) in a call to <b>Account.RetrievePeriodSummaries</b> to request the</li> </ol>



Scenario	Typical sequence
	<p>Period summaries for that Account</p> <ol style="list-style-type: none"> <li>10. The User receives the Period Summary data and chooses to request a Transaction listing for one specific Period</li> <li>11. The Software Provider software reuses the token (possibly has to renew the token depending on the time that has passed) in a call to <b>Transactions.RetrieveList</b> to request the transactions for that period for that Client Account</li> <li>12. User might do other work in the Tax Agent software and eventually logs off and terminates session</li> </ol>
<p><b>B. BUC105. Tax Agent wanting to check if the data received from the bulk file push overnight is up to date - i.e. has Inland Revenue recorded a very recent payment, assessed return, paid refund, disbursed Bulk Payment since.</b></p> <p><b>Alternatively, The tax agent might have noticed on eServices there is a newer transaction not reflected in their accounting package and decides to bring up to date the data in the accounting package. This would happen automatically after the overnight bulk file feed but might be for the few transactions that come in during a day like for a large payment run.</b></p>	<ol style="list-style-type: none"> <li>1. User signs onto Software Provider software and navigates to look at IRD data</li> <li>2. Software Provider software starts an independent browser session for the user to log onto the Inland Revenue site</li> <li>3. At the end of this logon sequence an OAuth token is returned for use in further calls to the Gateway Services. See the <a href="#">Identity and Access Build Pack</a> for more information</li> <li>4. The Software Provider software uses this token in a call to <b>Account.RetrieveAccountSummaries</b> to request an Account Summary for the relevant Account</li> <li>5. If the max activity date returned for that account is not newer than what was already in the accounting package it will show that there is no new data to retrieve.</li> <li>6. If the max activity date returned for that account is newer than what was already in the accounting package it will call <b>Account.RetrievePeriodSummaries</b> to retrieve Period Summaries for that account.</li> <li>7. Only on those periods where there is a newer max activity date than what is already in the accounting package will it call <b>Transactions.RetrieveList</b> to get a full up to date list of all transactions and store that and display that as new in the accounting package.</li> <li>8. If the user mistrusts the overall process or system they might be able to go into a period and request the accounting package to refresh of the transactions there by a call to <b>Transactions.RetrieveList</b>. Hopefully they will find over time the software and process is mature and reliable enough that this is not necessary.</li> <li>9. For any of the calls above as new data is returned it is stored in the accounting package which also ensure the latest max activity date is stored is it is returned, so future sessions don't unnecessarily repeat the same requests.</li> </ol>
<p><b>C. PUC205. Software provider software has identified a difference in the Last Activity date and kicks off this process to fix it being out of synch.</b></p> <p><b>This process is a workaround</b></p>	<ol style="list-style-type: none"> <li>1. The bulk file feed might have had a day where the Software Provider missed an update and a subsequent weekly update showing the max activity date on an account is newer than what is kept in the accounting provider records for the package. It then flags that this process is required and kicks it off or schedules it for when the user logs in.</li> <li>2. Alternately a daily update included only new transactions</li> </ol>



Scenario	Typical sequence
<p><b>for a potential malfunction and might be manually facilitated depending on Software Provider risk aversion and investment level around this.</b></p>	<p>but a balance that showed there was a gap due to a previous daily update being missed.</p> <ol style="list-style-type: none"> <li>3. Either A(step 4) an existing user session, or B(step 5) a new user session, is used to get an OAuth token to allow the software provider software to call the real-time web services:</li> <li>4. Option A) the software provider software kept an existing user session alive in the background using a refresh token (available only on cloud endpoint). Refer to the identity and access build pack for more information.</li> <li>5. Option B) he tax agent user logs in to Software Provider software and gets a message the software needs to connect to IRD so synchronise data. Software Provider software starts an independent browser session for the user to log onto the Inland Revenue site. At the end of this logon sequence an OAuth token is returned for use in further calls to the Gateway Services. See the <a href="#">Identity and Access Build Pack</a> for more information</li> <li>6. The Software Provider software uses this token in a call to <b>Account.RetrieveAccountSummaries</b> to request an Account Summary for the relevant Account</li> <li>7. If the max activity date returned for that account is not newer than what was already in the accounting package it imply that there is no new data to retrieve, but still the existing gap.</li> <li>8. It will call <b>Account.RetrievePeriodSummaries</b> to retrieve Period Summaries for that account.</li> <li>9. Only on those periods where there is the identified gap or a newer max activity date than what is already in the accounting package will it call <b>Transactions.RetrieveList</b> to get a full list of all transactions and update its records</li> <li>10. The user might be visually shown what data was updated in the process.</li> <li>11. For any of the calls above as new data is returned it is stored in the accounting package which also ensure the latest max activity date is stored is it is returned at Account and Period level, so future sessions don't unnecessarily repeat the same requests.</li> </ol>

**Table 13: Real time scenarios and use cases**

### 6.3 Systems Use Cases SUC030 / 32/33/34– TDS Real Time Queries

Systems Use Case	Operation
<b>SUC032 Query Customer Account Summaries</b>	Account.RetrieveAccountSummaries
<b>SUC033 Query Account Period Summaries</b>	Account.RetrievePeriodSummaries
<b>SUC034 Query Period Transaction List</b>	Transactions.RetrieveList

**Table 14: Systems use cases**

Use Cases under SUC030 TDS Real Time Queries (SUC032/ SUC034/ SUC034)	
<b>User/Actors</b>	Software Provider
<b>Secondary Actor</b>	Software Provider User of Software Provider
<b>Description</b>	The use case goal is to retrieve data for the Tax Agent or Customer/Account/Period, format and package it as described in chapters above and send the response to the Software Provider central location
<b>Inland Revenue systems</b>	START
<b>Pre-Conditions</b>	The user requests from the accounting package transaction detail for a specific Customer by Account and by Period through the Software Provider or Accounting Software, or the accounting package in the background calculates that the user needs it.  On prompting from the Software Provider software the user is facilitated in signing in to IRD and an OAuth token is returned at the end of that sequence.
<b>Triggers</b>	Inland Revenue receives a request for a specific Customer by Account and/or by Period through the Software Provider Accounting Software
<b>Constraints</b>	
<b>Post-Conditions</b>	The data has been sent to the Software Provider Software location to be integrated into its records and/or dispersed to the User making the request
Use Case Scenarios	
1. Normal Flow	<ol style="list-style-type: none"> <li>1. Inland Revenue receives the request and validates the structure of the request as per schema and as per operation documentation in chapter 3</li> <li>2. Data is formatted as described above in this document and in the TDS overview build pack</li> <li>3. Response sent to Software Provider calling system as described above in this document</li> <li>4. This system use case ends</li> </ol>
2. Exception Flows	See chapter 5 Responses
3. Alternatives	



**Table 15: Use Case SUC030**

## Appendix A – Glossary

Term	Definition
<b>Authentication</b>	The process of verifying an identity claimed by or for a system entity. [RFC 2828]
<b>Authorisation</b>	A right or a permission that is granted to a system entity to access a system resource. [RFC 2828]
<b>Build Pack</b>	Details the technical requirements and specifications, processes and sample payloads for the specified activity
<b>Business Processing</b>	Processing by Inland Revenue systems in retrieving data and constructing the Payload (business information content) of a message.
<b>Business Service</b>	An integration interface (description) of the Solution which provides a set of business data and information in fulfilling the Service and is specified in this document. The Solution may offer more than one Business Service.
<b>Confidential Information</b>	Means, in relation to a party, any information (in any form whether written, electronic or otherwise): (a) relating to the business or operations of that party or its suppliers or customers; (b) disclosed by that party to the other party on the express basis that such information is confidential; or (c) which might reasonably be expected by that party to be confidential in nature;
<b>Customer</b>	A Customer is the party who is 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 (e.g. their returns, accounts, entitlements etc.) even though these interactions might be undertaken by an Intermediary such as a tax agent on their behalf.
<b>Credentials</b>	Information used to authenticate identity, for instance an account username and password.
<b>Data integrity</b>	The property that data has not been changed, destroyed, or lost in an unauthorized or accidental manner. [RFC 2828]
<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>GWS</b>	Gateway Services—the name for the suite of web services that Inland Revenue is providing.
<b>HTTP</b>	Hypertext Transfer Protocol is a networking protocol and is the foundation of data communication for the World Wide Web.



Term	Definition
<b>HTTPS</b>	HTTP that uses SSL.
<b>IAS Build Pack</b>	Identity and Access Build Pack
<b>Intermediary</b>	A party who interacts with Inland Revenue on behalf of a Customer. Inland Revenue's Customer is a Client of the Intermediary. There are several types of Intermediary including Tax Agents, PTSIs, PAYE Intermediaries etc.
<b>Intermediation Service</b>	The Intermediation Service is a new Gateway Service for creating and maintaining delegated access relationships between intermediaries and their clients. These relationships enable access by the intermediary to a resource (e.g. an account, correspondence etc.) that belongs to their client. There are several types of intermediaries such as Tax Agents, book keepers, PAYE Intermediaries.
<b>IP</b>	Internet Protocol—the principal communication protocol in the Internet protocol suite for relaying datagrams across networks.
<b>MSH</b>	Messaging Service Handler.
<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).
<b>OAuth 2.0</b>	OAuth 2.0 is an industry-standard protocol for authorization
<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>Payload</b>	The business information content of the message and/or file(s) between Inland Revenue and a Business Partner.
<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 must/can contain, as well as validating the payload.
<b>Service</b>	The exchange, as enabled by the Solution, of information, data and/or funds for the purpose of Clients' tax administration by Tax Agents.
<b>Software Provider</b>	The organisation developing the software connecting to Inland Revenue gateway services Also known as Software Intermediary Also known as Software Developer Also known as Software 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 (e.g. 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





Term	Definition
	as one or more Client applications.
<b>SFTP</b>	Secure File Transport Protocol. SFTP 3.0 is used.
<b>SOAP</b>	Simple Object Access Protocol (SOAP) is a protocol specification for exchanging structured information in the implementation of Web Services in computer networks.
<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.
<b>Software Developer</b>	The developer of a Tax Agent software package and its Gateway Channel integration capability which forms part of the Solution.
<b>SSL</b>	Secure Sockets Layer (SSL) is a cryptographic protocol that provides security for communications over networks such as the Internet.
<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>System</b>	The parts of the Solution operated by a single Business Partner; typically this term means the Business Partner's MSH.
<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 Services Description Language (WSDL) is an XML-based language that provides a model for describing Web Services.
<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 Markup Language

Term	Definition
<b>XSD</b>	XML Schema Definition—the current standard schema language for all XML data and documents.

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## Appendix B—Change log

This table lists all changes that have been made to this build pack document since the release of version 0.5 (most recent changes listed first).

Version	Date of change	Document section	Description
<b>0.8</b>	24/01/2018	1.1	Described purpose of service
			Described development WSDL
		2.1	Updated endpoint consumer identification
		2.4	Described identifier parameter and permissions in more detail
		3	Explained com:identifier field in more detail
			Documented additional RetrieveAccountSummaries parameters
			Documented additional RetrievePeriodSummaries fields
			Documented additional Transaction.RetrieveList fields
		5	Minor changes to response status codes
<b>0.5</b>	20/12/17	<a href="#">5.1</a>	Gateway services response codes updated