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Inland Revenue

Build pack: Transaction Data Services—Real Time

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Contents

1 Overview

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, the architecture of the technical solution, schemas (file formats), end points and 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's TDS.

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 at the end. Business context is provided in the TDS Overview build pack (see link in box below).

Before continuing, please consult
www.ird.govt.nz/digital-service-providers/services-catalogue
for business-level context, use cases and links to relevant policy.
The information available here explains how to integrate with
Inland Revenue's services.

1.1 Solution overview

Transaction Data Services (TDS) is a business service that consists of various technical services, which in turn rely on parts of the Gateway Services suite.

TDS provides Inland Revenue Customer financial transaction data for consumption by software packages. These packages then present that data to their users.

Financial transaction data includes amounts assessed and associated credits or debits. There is no data sent with details of how an assessment has been calculated.

The service consists of the following related business services shown:

Technical Service	Description
1. **Bulk File Feed of Transaction Data**	The Bulk File Feed is an asynchronous file feed that pushes new transaction data to Business Intermediaries or Customers via the Software Providers on whose software they rely.
	It caters for the high volumes of transaction data Inland Revenue makes visible to authorised parties.
	This file is produced by a process running at a time after the completion of the Inland Revenue overnight batch process which posts transactions. It cannot therefore be relied on to be sent to Service Providers by the start of Inland Revenue's online day.

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Technical Service	Description
2. Real Time Feed of Transaction Data	The Real Time Feed gives access to transaction data to Business Intermediaries or Customers via web services.
	It caters for real time queries that need additional information to the bulk file feed or need an urgent update related to a change event.
	These web services, as the name suggests, are synchronous transactions, giving a real time reply of the actual data as held in the Inland Revenue back-end.

1.2   Data integrity

Inland Revenue will be providing all transaction data via TDS for the account types identified in this document and will be transparent about their activity with Customers and ensure Software Providers, Business Intermediaries and Customers are provided with the most up-to-date and accurate data possible.

The TDS Bulk file may not be shipped from Inland Revenue by the time the online day begins. When they are eventually shipped, these files will then be processed by the receiving Software Provider into their own systems. This means there may be occasions where the Inland Revenue transaction data is not available for Service Provider clients until later in the day, following Inland Revenue's daily batch. The TDS Real Time services provide a capability to mitigate any impact this lag may cause to Service Provider's clients.

Should a Software Provider client require assurance that the data they are viewing is fully up-to-date, then the suite of TDS Real Time services can be used. These services read from Inland Revenue's core financials system so reflect the up-to-date view of transactional data.

There is a hierarchy inherent in Inland Revenue's data structures:

> A customer has an account(s), each account is made up of periods, and each period has bills and transactions.

The Real Time transactions reflect this structure:

1. Account.RetrieveAccountSummaries lists all account types for a customer
2. Account.RetrievePeriodSummaries lists all the periods for an account
3. Transactions.RetrieveList provides all the bills and transactions for an account period.

Service Providers can use these calls to keep their software up-to-date by storing the latest date for each level of this hierarchy and comparing this with the values supplied by Inland Revenue, using the following logic:

> Call Account.RetrieveAccountSummaries for a Customer's IRD number
> *<This gives all the accounts owned by a customer>*
> For each account where fields **maxActivity** or **balance** do not match the dates stored by the Service Provider software then
> > Call Account.RetrievePeriodSummaries for each account.
> > *<This gives each period for an account>*

For each period where fields **activity** or **balance** do not match the dates stored by the Service Provider software (or period **activity =** account **maxActivity**) then

Call Transactions.RetrieveList for the account and period
<This gives all the bills and transactions for that account and period>
Transactions with a **postedDate** equal to the **maxActivity**/**activity** date for the account or period respectively are new.

A Service Provider may wish to provide their clients with a refresh capability to select Customer(s) to update at will. This is a Service Provider design decision and Inland Revenue accepts this usage pattern as valid.

It is also technically possible to loop through this logic for every Customer linked to every of their Intermediary Client Lists on a regular basis. Inland Revenue does not support this usage pattern and does have the ability to throttle usage of this Real Time service should it be deemed to adversely impact other users of Inland Revenue systems.

1.2.1 Channel consistency

The information retrieved using the Real Time transactions will never predate information available via myIR.

The Bulk file data may differ from the myIR information when there is a time gap between the myIR query and the completion of processing of the daily Bulk File sent each day within the Service Provider software.

1.3 Prerequisites

Only onboarded parties are able to call these web services. For more information, refer to the onboarding section of the TDS Overview build pack.

Party	Requirement	Description
Service provider	Acquire a X.509 certificate from a competent authority for the Test and Production environments	This is required when using mutual TLS with cloud-based service providers. Note that the same certificate cannot be used for the Test and Production environments.

1.3.1 Mutual Transport Layer Security and certificates

Mutual Transport Layer Security (TLS) is implemented for the TDS Real Time Service. This requires the use of a publicly-issued X509 certificate from one of the trusted certificate authorities. Inland Revenue does not issue certificates to external vendors for web service security implementations.

Inland Revenue has the following minimum requirements for accepting public X509 keys:

1. Minimum Key Length: 2048
2. Signature Algorithm: SHA256[RSA]
3. Self-signed certificates are not accepted
4. Certificates issued by a private/internal certificate authority are not accepted.

In general, shorter-lived certificates offer a better security posture since the impact of key compromise is less severe but there is no minimum requirement for certificate expiry periods.

Below is a list for examples of certificate authority providers with no recommendations or rankings incorporated. It is recommended that a business researches which certificate authority meets their requirements.

- Comodo
- GeoTrust
- DigiCert
- GlobalSign
- Network Solutions
- RapidSSL

- Symantec
- Thawte
- IdenTrust
- Entrust
- Entrust Datacard
- GoDaddy.

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:

Transaction Data Service Layers
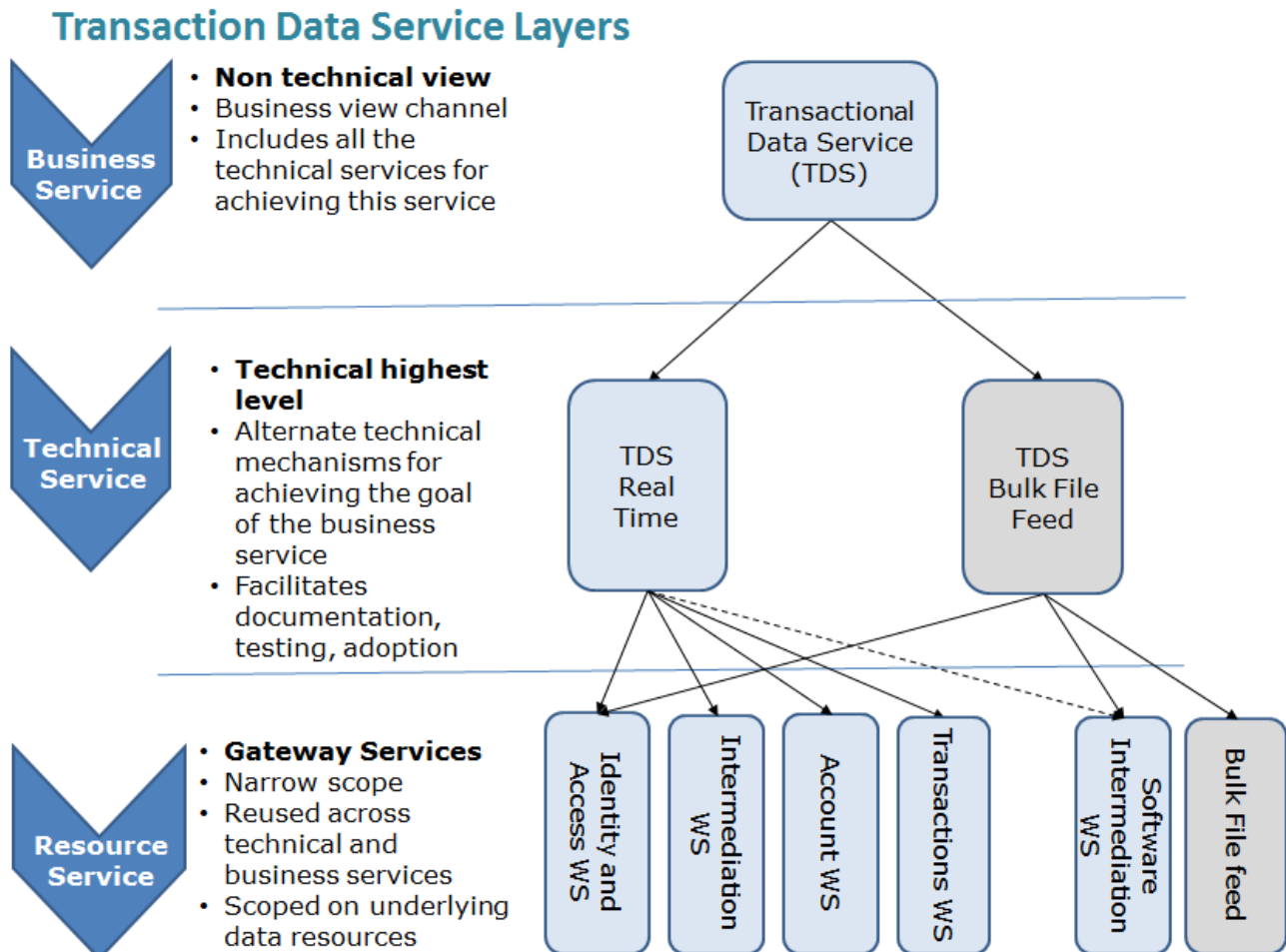
Accessing any of these services starts with the software provider application launching a user login session with Inland Revenue. This results in an OAuth token as per *Use Case PUC201 Authenticate and Provide Consent* (TDS Overview build pack):

1. Business intermediary uses their software provider software application
2. The user is presented with a browser showing an Inland Revenue login they need to complete
3. Based on the login, an OAuth token is returned to the software provider's software
4. That token and the software provider's connection to Inland Revenue can be used optionally to call the Intermediation Service to obtain a list of client accounts
5. TDS Real Time queries are then initiated (see the Service scope section below).

All requests thereafter rely on this OAuth token.

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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):

1. Optionally querying the **Intermediation Service** to get a listing of current client accounts for an agent (if it is the agent logged in) or a specific client list
2. Call the **Account Service** for a specific customer and get a list of accounts and account summaries
3. Call the **Account Service** again for a list of periods and period summaries inside an account
4. Call the **Transactions Service** and get a list of transaction and transaction level data for a period.
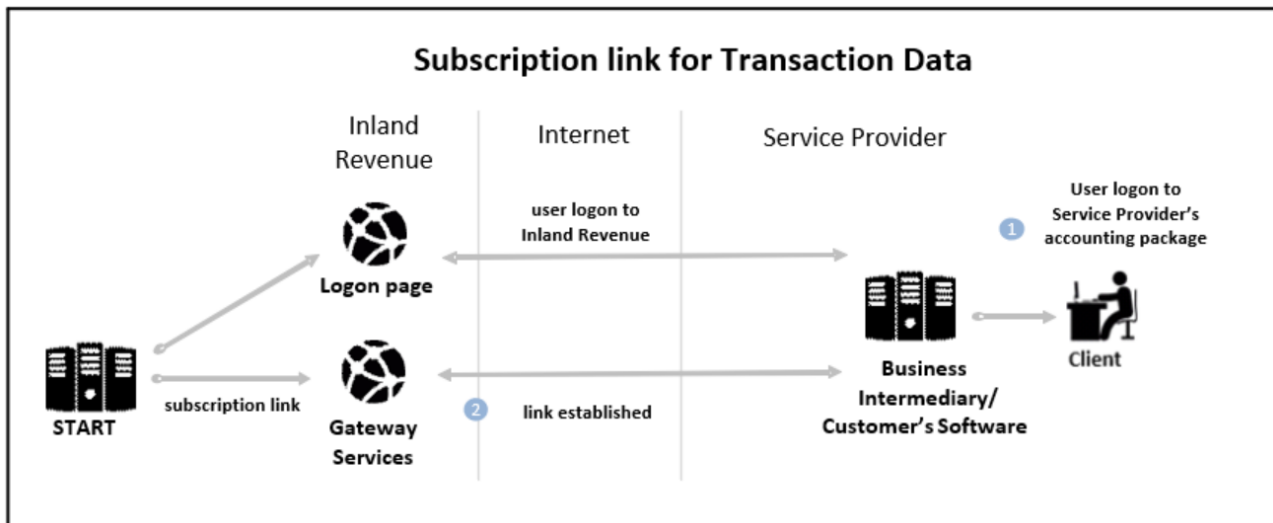
The diagram above depicts the following steps:

1. The business intermediary or other user logs into their software provider software application
2. 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.

More details about the Intermediation Service are available in the Intermediation Service 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 Service 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

```xml
<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>
```

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Example SOAP response structure

```xml
<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/RetrieveAccountSummariesResponse</
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/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>
              <list>
                <header>
                  <retrieveDate>2018-03-05T13:11:48</retrieveDate>
                </header>
                <account>
                  <accountId>123-088-883-NRT008</accountId>
                  <commenceDate>2017-01-01</commenceDate>
                  <ceaseDate>9999-12-31</ceaseDate>
                  <formattedAddress>1 WOOD STREET WALLACEVILLE UPPER HUTT 5018</formattedAddress>
                  <formattedName>Audioslave</formattedName>
                  <filingFrequency>NRTMO</filingFrequency>
                  <accountType>NRT</accountType>
                  <balance>0.00</balance>
                  <forecastedTotalBalance>0.00</forecastedTotalBalance>
                  <maxActivity>1900-01-01T00:00:00</maxActivity>
                </account>
              </list>
            </responseBody>
          </retrieveAccountSummariesResponse>
        </b:RetrieveAccountSummariesResponseWrapper>
      </RetrieveAccountSummariesResult>
    </RetrieveAccountSummariesResponse>
  </s:Body>
</s:Envelope>
```

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 view data for a customer online, they will not be able to view that data 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.

Regarding transport layer security (TLS), note that while TLS1.3 is now an industry standard, it is not yet widely adopted, as doing so requires upgrades to perimeter security devices and software. Inland Revenue will upgrade to TLS1.3 once it is adopted widely enough, and where practical, external software partners should also anticipate upgrading to this version. TLS1.0 and TLS1.1 are not supported by myIR or Gateway Services.

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

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

There are end points, summarised below:

1. There is an end point 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 end point, 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 end point that does not use mutual TLS. For this service, certificates do not need to be exchanged during onboarding. On the desktop end point Inland Revenue has less ability to shield consumers of the service from heavy usage by others.

End point	Cloud	Desktop
Purpose	• Default end point to connect to from software providers for Gateway Services	• Additional end point 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	• Only for source locations with client-side TLS certificates • On the cloud end point Inland Revenue has controls to shield software providers from issues caused by heavy usage from other providers.	• Less scalable • Subject to tighter security controls • On the desktop end point Inland Revenue has less ability to shield consumers of the service from heavy usage by others

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End point	Cloud	Desktop
		• OAuth2 Refresh Tokens will not be offered to Desktop clients
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 poftware 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	• Each software provider is given a software platform ID during onboarding of type Customer ID, independent of end point • 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 this end point • The mutual TLS certificate is used to identify the service provider	• Each software provider is given a software platform ID during onboarding of type Customer ID, independent of end point • Desktop clients will be given different identity and access system client_id/client_secret credentials to cloud application clients
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

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, although this may be adjusted after testing.

3 Operations, sample requests and field descriptions

IMPORTANT
The schemas and samples provided here are subject to change. For the authoritative definitions, please visit
www.ird.govt.nz/digital-service-providers/services-catalogue

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
- 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>
```

Field	Description
softwareProvider	The company that developed the software
softwarePlatform	The software package that is making the request
	NOTE: 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
softwareRelease	The version of the software package
Cmn:identifier	The value submitted for this field should contain only digits, with no dashes.
	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

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Field	Description
	can but the provided OAuth token does not have the needed delegated permissions on it then the return status 4 unauthorised delegation is returned.
IdentifierValueType	The ID type being submitted—can be IRD. The value submitted for this field should contain only digits, with no dashes. Possible values in this context include "IRD" and "ACCIRD", see proper use notes below and individual operation request parameter sections.

Proper use:

- The identifier is that of the customer whose data is being queried.
- Operations that require AccountType do security validation on the account access and "ACCIRD" or "ACC" is the value to use for IdentifierValueType.
- Operations that don't use AccountType do security validation only on the customer access and "IRD" is the value to use for IdentifierValueType.

Example scenario:

- A business intermediary wants to retrieve data for customer with IRD Number 898989898 and accounting package is calling the Account.RetrieveAccountSummaries operation
  - A 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 to which the calling user (as represented by the OAuth token) has access. There may be additional accounts to which this identity does not have access—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, then the agent-client linking is also considered. Operation does not use AccountType, and security validation for access happens on the customer level.

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/RetrieveAccountSummariesRequest">
  <soap:Header/>
  <soap:Body>
    <acc:RetrieveAccountSummaries>
      <acc:RetrieveAccountSummariesRequestMsg>
        <ret:RetrieveAccountSummariesRequestWrapper>
          <retrieveAccountSummariesRequest
           xmlns="urn:www.ird.govt.nz/GWS:types/Account">
            <softwareProviderData
             xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <softwareProvider>SoftwareProvider</softwareProvider>
              <softwarePlatform>SoftwarePlatform</softwarePlatform>
              <softwareRelease>1</softwareRelease>
            </softwareProviderData>
            <identifier IdentifierValueType="IRD"
             xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">123110358</identifier>
```

```
        <filterByIdentifier>true</filterByIdentifier>
        <filterByClientListID IdentifierValueType="IRD">123070789
        </filterByClientListID>
        <filterAccountType>GST</filterAccountType>
    </retrieveAccountSummariesRequest>
  </ret:RetrieveAccountSummariesRequestWrapper>
 </acc:RetrieveAccountSummariesRequestMsg>
 </acc:RetrieveAccountSummaries>
 </soap:Body>
</soap:Envelope>
```

Field	Required	Description
com:identifier	Required	Customer's IRD number always used for permission checks and sometimes used to constrain result data set (only if filterByIdentifier is true). 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. 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. 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.
Identifier.IdentifierValueType	Required	The ID type being submitted. This can be IRD, ACCIRD or ACC. The value submitted for this field should contain only digits, with no dashes (with the exception of the ACC field, which may contain letters to identify the account type). IRD numbers that are eight digits must be padded with a leading zero.
AccountType	Not used, not supported	
filterByIdentifier	Optional, defaults to false	Format is one of: false, 0, true, 1 (true). 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. Note that if this value is omitted or false the com:identifier still needs to contain a valid value to pass permission checks.
filterAccountType	Optional	Needs to contain a valid account type if provided.

Field	Required	Description
		If populated this will filter the result set to only contain customer accounts of the given type. *Note: A request for a Multi Payment Option Account type must be made using the BPA Account Type rather than MPO.*
filterByClientListID	Optional	Needs to contain a valid business intermediary client list IRD number (agency IRD number) if provided, cannot be a business intermediary prime IRD number. If populated this will filter the result set to only contain customer accounts in the given agent client list.
filterByClientListID. IdentifierValueType	Required only if filterByClientListID is present	CLTLID—Client List Identifier LSTID—List Identifier (IRD format) IRD—IRD number

The following Client ID types are supported for each intermediary type:

Intermediary type	Client list ID type
Payroll bureau	CLTLID—Client List Identifier Other
Bookkeeper	CLTLID—Client List Identifier
Other respresentative	CLTLID—Client List Identifier
Payroll intermediary	IRD—IRD number LSTID—List Identifier
Business intermediary	IRD—IRD number LSTID—List Identifier

Some sample scenarios:

Intent	Fields to use
Return all accounts for a customer	com:identifier: Customer IRD number filterByIdentifier: true
Return GST account for a customer	com:identifier filterByIdentifier: true filterAccountType: GST
Return all accounts for a customer in a business intermediary client list	com:identifier filterByIdentifier: true filterByClientListID: client list IRD number (AgencyIRD number)
Return all accounts in a business intermediary client list	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)

Intent	Fields to use
Return all of a business intermediary's own accounts	com:identifier: Business intermediary prime IRD number filterByIdentifier: true

3.1.2 Response

```
<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/RetrieveAccountSummariesResponse</
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/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>
              <list>
                <header>
                  <retrieveDate>2018-03-12T18:57:40</retrieveDate>
                </header>
                <account>
                  <accountId>123-110-358-GST002</accountId>
                  <commenceDate>2017-09-10</commenceDate>
                  <ceaseDate>9999-12-31</ceaseDate>
                  <formattedAddress>121 PAPANUI CRESCENT AOTEA PORIRUA 5024</formattedAddress>
                  <formattedName>Thomas, Carol</formattedName>
                  <filingFrequency>GSTMO</filingFrequency>
                  <accountType>GST</accountType>
                  <balance>0.00</balance>
                  <forecastedTotalBalance>0.00</forecastedTotalBalance>
                  <maxActivity>1900-01-01T00:00:00</maxActivity>
                </account>
              </list>
            </responseBody>
          </retrieveAccountSummariesResponse>
        </b:RetrieveAccountSummariesResponseWrapper>
      </RetrieveAccountSummariesResult>
    </RetrieveAccountSummariesResponse>
  </s:Body>
</s:Envelope>
```

Parent element	Element	Field	Description
header	retrieveDate		When timestamp data was retrieved. Format: xsd:dateTime: YYYY-MM-DDThh:mm:ss
account	accountId	Account ID	The identifier of the account
account	commenceDate	Commence	Commencement date of the account

Parent element	Element	Field	Description
account	ceaseDate	Cease	Cessation date of account
account	formattedAddress	Address	Note the bulk file and overview does not contain this as it is not considered material to TDS but for other usage purposes
account	formattedName	Name	Note the bulk file and overview does not contain this as it is not considered material to TDS but for other usage purposes
account	filingFrequency	Filing Frequency	The filing frequency for the Account (see the TDS Overview build pack appendix with filing frequency codes)
account	accountType	Account Type	The type of account (eg GST, INC)
account	Balance	Balance	The balance for the account in total at last posted transaction
account	forecastedTotalBalance	Forecasted Total Balance	The total balance including amount forecasted for date of request, since the time of last posted transaction
account	maxActivity	MaxActivity	The last date/time of activity on Account

3.2 Account.RetrievePeriodSummaries

The RetrievePeriodSummaries operation will be used to retrieve the periods for an account to which the calling user (as represented by the OAuth token) has access. 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. Operation requires AccountType and does security validation on the Account access.

3.2.1 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/RetrievePeriodSummariesRequest">
  <soap:Header/>
  <soap:Body>
    <acc:RetrievePeriodSummaries>
      <acc:RetrievePeriodSummariesRequestMsg>
        <ret:RetrievePeriodSummariesRequestWrapper>
          <retrievePeriodSummariesRequest xmlns="urn:www.ird.govt.nz/GWS:types/Account">
            <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">123110358</identifier>
            <accountType xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">GST</accountType>
```

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```
            <filterPeriodFrom>1850-02-02</filterPeriodFrom>
            <filterPeriodTo>2020-03-02</filterPeriodTo>
          </retrievePeriodSummariesRequest>
        </ret:RetrievePeriodSummariesRequestWrapper>
      </acc:RetrievePeriodSummariesRequestMsg>
    </acc:RetrievePeriodSummaries>
  </soap:Body>
</soap:Envelope>
```

Field	Required	Description
Identifier	Required	Customer IRD number
IdentifierValueType	Required	"ACCIRD" is usually the value to use.
AccountType	Required - Note that the schema saying it is optional is not accurate for this operation	Account type
Filter Period from	Optional	Only filing periods (periods with end dates) on or after this date will be included
Filter Period to	Optional	Only filing periods (periods with end dates) on or before this date will be included

3.2.2 Response

Please also see RetrievePeriodSummariesResponse.xml.

```
<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/RetrievePeriodSummariesResponse</a:Action>
  </s:Header>
  <s:Body>
    <RetrievePeriodSummariesResponse xmlns="https://services.ird.govt.nz/GWS/Account/">
      <RetrievePeriodSummariesResult
xmlns:b="https://services.ird.govt.nz/GWS/Account/:types/RetrievePeriodSummariesResponse"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:RetrievePeriodSummariesResponseWrapper>
          <retrievePeriodSummariesResponse 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>
              <list>
                <header>
                  <retrieveDate>2018-03-12T18:59:55</retrieveDate>
                  <accountId>123-110-358-GST002</accountId>
                </header>
                <period>
                  <filingPeriod>2017-09-30</filingPeriod>
                  <beginDate>2017-09-10</beginDate>
                  <endDate>2017-09-30</endDate>
```

```
                    <filingFrequency>GSTMO</filingFrequency>
                    <tax>0.00</tax>
                    <penalty>0.00</penalty>
                    <penaltyForecasted>0.00</penaltyForecasted>
                    <interest>0.00</interest>
                    <interestForecasted>0.00</interestForecasted>
                    <other>0.00</other>
                    <otherForecasted>0.00</otherForecasted>
                    <credit>0.00</credit>
                    <creditForecasted>0.00</creditForecasted>
                    <balance>0.00</balance>
                    <forecastedTotalBalance>0.00</forecastedTotalBalance>
                    <activity>1900-01-01T00:00:00Z</activity>
                  </period>
                  <period>
                    <filingPeriod>2017-10-31</filingPeriod>
                    <beginDate>2017-10-01</beginDate>
                    <endDate>2017-10-31</endDate>
                    <filingFrequency>GSTMO</filingFrequency>
                    <tax>0.00</tax>
                    <penalty>0.00</penalty>
                    <penaltyForecasted>0.00</penaltyForecasted>
                    <interest>0.00</interest>
                    <interestForecasted>0.00</interestForecasted>
                    <other>0.00</other>
                    <otherForecasted>0.00</otherForecasted>
                    <credit>0.00</credit>
                    <creditForecasted>0.00</creditForecasted>
                    <balance>0.00</balance>
                    <forecastedTotalBalance>0.00</forecastedTotalBalance>
                    <activity>1900-01-01T00:00:00Z</activity>
                  </period>
                </list>
              </responseBody>
            </retrievePeriodSummariesResponse>
          </b:RetrievePeriodSummariesResponseWrapper>
        </RetrievePeriodSummariesResult>
      </RetrievePeriodSummariesResponse>
    </s:Body>
  </s:Envelope>
```

Parent element	Element	Description
statusMessage	statusCode errorMessage	Please see status codes and error messages in section 5
header	retrieveDate	When timestamp data was retrieved. Format: xsd:dateTime: YYYY-MM-DDThh:mm:ss
header	accountId	Account ID eg 123-025-148-RWT002 Format: <ACCIRD>-<TYPE><Profile No.>
period	filingPeriod	The last day of the period
period	beginDate	The first day of the period
period	endDate	The last day of the period

Parent element	Element	Description
period	filingFrequency	The filing frequency for the account (see TDS Overview build pack appendix with filing frequency codes)
period	tax	The amount assessed
period	penalty	The amount of penalty applied
period	penaltyForecasted	The additional amount of penalty forecasted for date of request, since the time of last posted transaction
period	interest	The amount of interest applied
period	interestForecasted	The additional amount of interest forecasted for date of request, since the time of last posted transaction
period	other	Amounts other than penalty, interest, payments or credit transfers in that have been applied to this period eg remission, write off or credit transfer out
period	otherForecasted	The additional amount of other amounts forecasted for date of request, since the time of last posted transaction
period	credit	Payments or credit transfers in which have been made for this period
period	creditForecasted	The additional amount of credit amounts forecasted for date of request, since the time of last posted transaction
period	balance	The balance for the period as at the last posted transaction
period	forecastedTotalBalance	The total balance including amount forecasted for date of request, since the time of last posted transaction
period	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

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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. Operation requires AccountType and does security validation on the Account access.

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>
```

Field	Required	Description
Identifier	Required	Customer IRD number
IdentifierValueType	Required	"ACCIRD" is usually the value to use
AccountType	Required Note that the schema saying it is optional is not accurate for this operation	Account type
filingPeriod	Required	End date for the filing period

3.3.2 Response

NOTE: The response below is shortened—please see TransactionListResponse.xml for the full example.

Please also note that some potential content like international bank account detail is not illustrated in this sample. For more information on these please refer to the schema and TDS Overview build pack.

```xml
<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/RetrieveListResponse</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>
                <header>
                  <retrieveDate>2018-03-12T18:28:07</retrieveDate>
                  <accountId>011-264-190-GST002</accountId>
                  <accountType>GST</accountType>
                  <period>2016-12-31</period>
                </header>
                <pendingPayments>
                  <payment>
                    <paymentID>1414376704</paymentID>
                    <amount>194384.25</amount>
                    <pendingDate>2017-04-13</pendingDate>
                  </payment>
                </pendingPayments>
                <bankAccounts>
                  <bankAccount>
                    <nzBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
                      <bank>02</bank>
                      <branch>0568</branch>
                      <account>00195445</account>
                      <suffix>0000</suffix>
                    </nzBankStandard>
                    <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">185100320</transactionID>
                  </bankAccount>
                  <bankAccount>
                    <otherBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
                      <branch>021000021</branch>
                      <account>0175380001</account>
                    </otherBankStandard>
                    <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">831736832</transactionID>
                  </bankAccount>
                  <bankAccount>
                    <swiftBic_IBANBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
                      <swiftBICcode>2134123123</swiftBICcode>
                      <twoCharCountryCode>AT</twoCharCountryCode>
                      <checkDigit>61</checkDigit>
                      <basicBankAccountNumber>1904300234573201</basicBankAccountNumber>
                    </swiftBic_IBANBankStandard>
                    <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">1905478656</transactionID>
                  </bankAccount>
```

```xml
          <bankAccount>
            <ausBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <bsb>032062</bsb>
              <account>00413090</account>
            </ausBankStandard>
            <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">160648192</transactionID>
          </bankAccount>
          <bankAccount>
            <nzBankCreditUnion xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <bank>02</bank>
              <branch>3044</branch>
              <account>04005813</account>
              <suffix>0000</suffix>
              <referenceNumber>345435345</referenceNumber>
            </nzBankCreditUnion>
<transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">1234390016</transactionID>
          </bankAccount>
          <bankAccount>
            <otherBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <branch>021000021</branch>
              <account>0175380001</account>
            </otherBankStandard>
            <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">697519104</transactionID>
          </bankAccount>
          <bankAccount>
            <usCanBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <routingNumber>021000021</routingNumber>
              <accountNumber>9101209543</accountNumber>
            </usCanBankStandard>
            <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">429083648</transactionID>
          </bankAccount>
          <bankAccount>
            <swiftBicBankStandard xmlns="urn:www.ird.govt.nz/GWS:types/Common.v1">
              <swiftBICcode>04456456</swiftBICcode>
              <basicBankAccountNumber>456456456</basicBankAccountNumber>
            </swiftBicBankStandard>
            <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">1898745344</transactionID>
          </bankAccount>
        </bankAccounts>
        <transfers>
          <transfer>
            <transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">449269792</transactionID>
<transferType xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">Transfer to GST</transferType>
<otherAccountID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">011264190</otherAccountID>
<otherAccountType xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">GST</otherAccountType>
<otherPeriod xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">2017-01-31</otherPeriod>
          </transfer>
          <transfer>
<transactionID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">717705248</transactionID>
<transferType xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">Transfer to GST</transferType>
<otherAccountID xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">011264190</otherAccountID>
<otherAccountType xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">GST</otherAccountType>
<otherPeriod xmlns="urn:www.ird.govt.nz/GWS:types/TDSCommon">2017-01-31</otherPeriod>
          </transfer>
…
        </transfers>
        <bills>
          <bill>
            <billID>258672768</billID>
            <billDisplay>1</billDisplay>
            <dueDate>9999-12-31</dueDate>
            <tax>0.00</tax>
            <penalty>50.00</penalty>
            <penaltyForecasted>0.00</penaltyForecasted>
            <interest>0.00</interest>
            <interestForecasted>0.00</interestForecasted>
```

```
                    <other>824449.94</other>
                    <otherForecasted>0.00</otherForecasted>
                    <credit>-824499.94</credit>
                    <creditForecasted>0.00</creditForecasted>
                    <balance>0.00</balance>
                    <forecastedTotalBalance>0.00</forecastedTotalBalance>
                    <transactions>
...
                      <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>
                      <transaction>
                        <amount>44585.05</amount>
                        <transactionID>986140704</transactionID>
                        <transactionType>FWDGST</transactionType>
                        <postedDate>2017-03-31</postedDate>
                        <effectiveDate>2017-02-28</effectiveDate>
                        <linkID>1948639040</linkID>
                      </transaction>
                      <transaction>
                        <amount>44916.08</amount>
                        <transactionID>1929930784</transactionID>
                        <transactionType>DSBDIR</transactionType>
                        <postedDate>2017-04-03</postedDate>
                        <effectiveDate>2017-04-03</effectiveDate>
                        <linkID>1948639040</linkID>
                      </transaction>
                      <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>
...
                    </transactions>
                 </bill>
                 <bill>
                    <billID>1653458944</billID>
                    <billDisplay>2</billDisplay>
                    <dueDate>2018-01-03</dueDate>
                    <tax>0.00</tax>
                    <penalty>0.00</penalty>
                    <penaltyForecasted>0.00</penaltyForecasted>
                    <interest>0.00</interest>
                    <interestForecasted>0.00</interestForecasted>
                    <other>1253.75</other>
                    <otherForecasted>0.00</otherForecasted>
                    <credit>-1253.75</credit>
                    <creditForecasted>0.00</creditForecasted>
                    <balance>0.00</balance>
                    <forecastedTotalBalance>0.00</forecastedTotalBalance>
                    <transactions>
                      <transaction>
                        <amount>758.37</amount>
                        <transactionID>831736832</transactionID>
                        <transactionType>DSBIAC</transactionType>
```

```
                        <postedDate>2017-11-30</postedDate>
                        <effectiveDate>2017-11-30</effectiveDate>
                        <linkID>655576064</linkID>
                    </transaction>
…
                </transactions>
            </bill>
        </bills>
        <transactions>
            <transaction>
                <amount>-50.00</amount>
                <transactionID>981059904</transactionID>
                <transactionType>XFRIN</transactionType>
                <postedDate>2017-02-07</postedDate>
                <effectiveDate>2017-01-28</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>
            <transaction>
                <amount>-91861.22</amount>
                <transactionID>1948639040</transactionID>
                <transactionType>RECGST</transactionType>
                <postedDate>2017-02-28</postedDate>
                <effectiveDate>2016-08-28</effectiveDate>
                <linkID>0</linkID>
            </transaction>
…
        </transactions>
      </list>
    </responseBody>
  </retrieveListResponse>
  </b:RetrieveListResponseWrapper>
  </RetrieveListResult>
  </RetrieveListResponse>
  </s:Body>
</s:Envelope>
```

Parent element	Element	Field	Description
statusMessage	statusCode errorMessage	Status code Error message	Please see status codes and error messages in section 5
list	header		
header	retrieveDate	Retrieve Date	Timestamp data was retrieved at. Format: xsd:dateTime: YYYY-MM-DDThh:mm:ss
header	accountId	Account ID	Account ID eg 123-025-148-RWT002

Parent element	Element	Field	Description
			Format: <ACCIRD>-<TYPE><Profile No.>
header	accountType	Account Type	Account Type
header	period	Period	End date of tax period
list	pendingPayments		
pendingPayments	payment.paymentID	Payment ID	The unique identifier for the payment
pendingPayments	payment.amount	Pending amount	The amount of the payment
pendingPayments	payment.pendingDate	Pending date	The date the payment was made pending
bankAccounts	bankAccount		
bankAccount	transactionID	Transaction ID	Transaction ID of the refund which used this bank account
bankAccount	nzBankStandard.bank	Bank account bank number	The bank where the account is held
bankAccount	nzBankStandard.branch	Bank account branch number	The branch number of the bank
bankAccount	nzBankStandard.account	Bank account number	Number of the bank account
bankAccount	nzBankStandard.suffix	Bank account number suffix	Suffix to the bank account number
Please see the XSD and TDS Overview build pack for bank standards not documented here.			
transfers	transfer		
transfer	transactionID	Transaction ID	The unique identifier for the transaction
n/a	(Implied by the context – header.accountId)	IRD number	IRD number of account to which the money went or from which it came
transfer	otherAccountID	Transfer account	The IRD number part or CST ID of the account to which the amount was applied or from which it was received
transfer	otherAccountType	Transfer account	The account type part of the account to which the amount was applied or from which it was received
transfer	otherPeriod	Transfer period	The period for that account to which the

Parent element	Element	Field	Description
			amount has been applied
bills	bill		
bill	billID	Bill ID	The bill number
bill	billDisplay	Bill display ID	Easy to use ID for bill
bill	dueDate	Bill due date	The due date for the bill
bill	tax	Tax	The amount assessed
bill	balance	Bill balance	Balance due on the bill
bill	forecastedTotalBalance	Bill balance forecasted	The balance of the bill for the date of request including the forecasted amounts
bill	credit	Bill credit	The credits applied towards the bill
bill	creditForecasted	Bill credit forecasted	Additional credit amount forecasted for date of request applied towards the bill
bill	other	Bill balance	Amounts other than penalty, interest, payments or credit transfers in that have been applied to this bill (eg remission, write off or credit transfer out)
bill	otherForecasted	Bill other forecasted	Additional amount forecasted for date of request for type other applied towards the bill
bill	penalty	Bill penalty	The penalty amount on the bill as at last posted transaction
bill	penaltyForecasted	Bill penalty forecasted	Additional penalty forecasted for date of request applied on the bill
bill	interest	Bill interest	The interest amount on the bill as at last posted transaction
bill	interestForecasted	Bill interest forecasted	Additional interest forecasted for date of request applied on the bill

Parent element	Element	Field	Description
bill	transactions		List of transactions related to bill contributing to same due date
list	transaction		Transactions not directly related to a bill and its due date
transaction	amount	Amount	The amount of the transaction
transaction	transactionID	Transaction ID	The unique identifier for the transaction
transaction	transactionType	Transaction type	The code for the type of transaction
transaction	postedDate	Posted date	The posted date for this transaction
transaction	effectiveDate	Effective date	The effective date for this transaction
transaction	linkID	Link ID	The unique identifier for a linked transaction

4 End points, schemas and WSDLs

Current environment information for this service—including the end points for each environment, schemas and WSDLs—is available within the relevant Software Development Kit (SDK).

To access the SDK, do one of the following:

- Go to https://github.com/InlandRevenue and select this service
- Go to https://developerportal.ird.govt.nz and click the link to the SDK within the Gateway Service documentation (please register first).

4.1 End points

See instructions above for where to find end points for this service.

4.2 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 also create data types to be used within the operations. They also include the request and response root elements for the supported operations. Schemas are available in the SDK (links above).

4.3 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:4046/Gateway/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:4046/Gateway/GWS/Transactions/?singleWsdl

Note: The production URLs above will not work until you have onboarded with Inland Revenue.

As explained in section 2.3 (Messaging) the online WSDLs have XML <any> elements, the development version of the WSDLs is more strongly typed to facilitate development and analysis and testing. WSDLs are available in the SDK (links above).

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">
```

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 generic response codes

The following response codes are used by the Account and Transactions Services.
The following framework security validation is done per service operation:

- Account.RetrieveAccountSummaries—Customer level (access to customer confirmed)
- Account.RetrievePeriodSummaries—Account level (access to specific account confirmed)
- Transactions.RetrieveList—Account level (access to specific account confirmed)

Standard codes	Standard message	Description	Account level validation	Customer level validation
-1	An unknown error has occurred	This is generally what will be returned 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
0	Success	This resembles a successful web service call	Y	Y
1	Authentication failure	General authentication failure status. Could be the result of inability to validate security token.	Y	Y
2	Missing authentication token(s)	No OAuth token in HTTP header as expected	Y	Y
3	Unauthorised access	Access could not be confirmed due to OAuth token validation failing. This could be due to invalid format of the token.	Y	Y
4	Unauthorised delegation	Access is not permitted for the requester to perform this operation for the submitted identifier. This code will be returned in any of these situations: • The submitted cmn:identifier has an invalid value. • The identifier type (IdentifierValueType attribute on cmn:identifier) supplied is invalid. • The AccountType supplied does not exist for that identifier.	Y	

Standard codes	Standard message	Description	Account level validation	Customer level validation
		• All the values above are valid but the provided OAuth token does not have delegated access to that customer or account.		
4	Unauthorised delegation	Access is not permitted for the requester to perform this operation for the submitted identifier. This code will be returned in any of these situations: • The submitted cmn:identifier has an invalid value • The identifier type (IdentifierValueType attribute on cmn:identifier) supplied is invalid • All the values above are valid but the provided OAuth token does not have delegated access to that customer. **Unlike many other operations this will NOT return this code if the AccountType supplied does not exist for that identifier, or the OAuth token does not have access for that specific account**.		Y
5	Unauthorised vendor	The vendor provided is not authorised to use this service (not onboarded)	Y	Y
7	Account type not supported	Queries on account types not supported in any Gateway Services web services will return this code	Y	
(7)	(Account type not supported)	**Please note this operation, unlike some other operations, will never return the 7 response code for unsupported account types**		Y
20	Unrecognized XML request	The XML submitted is not recognisable and no schema can be determined	Y	Y
21	XML request failed validation	The XML structure did not meet the definition laid out by the schemas published by Inland Revenue	Y	Y
(none)	(non xml)	In some scenarios where the request message does not have a well-formed XML structure, 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)	Y	Y

Standard codes	Standard message	Description	Account level validation	Customer level validation
(none)	(SOAP fault) Unauthorised	When maximum concurrency has been exceeded by service provider this SOAP Fault will be returned	Y	Y

5.2   TDS Real Time-specific response codes

Standard codes	Standard message	Description	Account service	Transaction service
100	Could not extract data from XML payload	Could not extract data from XML payload	Y	Y
104	Invalid filing period	The filing period provided did not match a valid filing period for the account		Y
105	The specified account has no active periods or no periods found with specified criteria	The specified account has no active periods or no periods found with specified criteria	Y	
109	Filter account type not found	Filter account type is not found in configuration	Y	
110	The provided IRD number has no accounts	The provided IRD number has no matching accounts based on filter criteria and relevant to TDS	y	
111	Filter account type is not supported in this service	Filter account type is not configured to provide data through TDS	Y	
111	The provided account type is not supported for this operation	The provided account type is not authorised in the current operation		Y
112	Identifier account type is not supported in this service	Identifier account type is not configured to receive data from TDS	Y	
120	Filter client list ID type is invalid IRD number	The provided IRD, ACCIRD or LSTID number is not in a valid format	Y	
130	No matching accounts based on client list ID and client list ID type	The provided client list ID and client list ID type did not yield any search results	Y	

6 Glossary

Term	Definition
Authentication	The process of verifying an identity claimed by or for a system entity [RFC 2828]
Authorisation	A right or a permission that is granted to a system entity to access a system resource [RFC 2828]
Build pack	A document that details the technical requirements and specifications, processes and sample payloads for the specified activity
Business processing	Processing by Inland Revenue systems in retrieving data and constructing the payload (business information content) of a message
Business service	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.
Confidential information	Any information: • relating to the business or operations of that party or its suppliers or customers • disclosed by that party to the other party on the express basis that such information is confidential OR • which might reasonably be expected by that party to be confidential in nature.
Customer	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 (eg their returns, accounts, entitlements etc) even though these interactions might be undertaken by an intermediary such as a business intermediary on their behalf.
Credentials	Information used to authenticate identity, for instance an account username and password
Data integrity	The property that data has not been changed, destroyed, or lost in an unauthorized or accidental manner [RFC 2828]
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]
GWS	Gateway Services—the name for the suite of web services that Inland Revenue is providing

Term	Definition
HTTP	HyperText Transfer Protocol is a networking protocol and is the foundation of data communication for the World Wide Web
HTTPS	HTTP that uses SSL
IAS build pack	Identity and Access build pack
Intermediary	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, book keepers, payroll intermediaries, payroll bureaus and others.
Intermediation Service	The Intermediation Service is a Gateway Service for creating and maintaining delegated access relationships between intermediaries and their clients. These relationships enable access by the intermediary to a resource (eg an account, correspondence etc) that belongs to their client.
IP	Internet Protocol—the principal communication protocol in the Internet protocol suite for relaying datagrams across networks
MSH	Messaging Service Handler
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
Payload	The business information content of the message and/or file(s) between Inland Revenue and a business partner
Schemas	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.
Service	The exchange, as enabled by the solution, of information, data and/or funds for the purpose of clients' tax administration by business intermediaries
Software provider	The organisation developing the software connecting to Inland Revenue's Gateway Services—also known as software intermediary and/or software developer
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 (eg 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.

Term	Definition
	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.
SOAP	Simple Object Access Protocol (SOAP) is a protocol specification for exchanging structured information in the implementation of web services in computer networks
Solution	The technology components, systems and interface specifications constituting the business intermediary web services capability which enables integration and communication across the Gateway channel between Inland Revenue and business intermediaries for the purpose of providing the service
Software developer	The developer of a business intermediary software package and its gateway channel integration capability which forms part of the Solution
SSL	Secure Sockets Layer (SSL) is a cryptographic protocol that provides security for communications over networks such as the Internet
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.
System	The parts of the solution operated by a single business partner—typically, this term means the business partner's MSH.
Business intermediary	A business intermediary 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 Services Description Language (WSDL) is an XML-based language that provides a model for describing web services
X.509 certificate	An international standard for encoding and describing a digital certificate. In isolation a public key is just a very

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

7 Change log

This table lists all changes that have been made to this build pack document since the release of version 1 (most recent changes listed first).

Version	Date	Document section	Description
	11/08/20	Formerly 1.3	Entire 'Related documents' section removed
		Formerly 1.2	Section heading 'Intended audience' removed – content moved into section 1.1
		1.2	New section added – 'Data integrity'
		1.1	Entire 'Solution overview' section revised
		3	Boxed 'important' information update with new URL
		4	Removed boxed instructions on where to find current end points, schemas and WSDLs and updated with new instructions.
		4.1	Text updated to this: *See instructions above for where to find end points for this service.*
	07/05/20	3.3.2	'Field' column added to table and populated with information where appropriate
		5.2	Changed heading to 'TDS Real Time-specific response codes'
	27/11/19	2.4	Updated TLS information to reflect use of TLS1.3
		1.4	Table with party, requirement and description added
	23/10/19	3	Removed foreword/note on samples
		4.3	WSDLs updated
		2.2	Diagram updated
		2.5	Tables of end points removed and replaced with instruction to speak to Inland Revenue onboarding team for these details.
		2.5	End points section removed and instruction for how to obtain end points moved into section 4 'End points, schemas and WSDLs'
		4	Section renamed to include end points in title
		3	Added "or ACC" to proper use bullet point
		1.3	Superfluous diagram removed with details of related documents
		1.1	Superfluous diagram removed
		1.2	Removed table with details of where to find security, schemas and samples within this document

Version	Date	Document section	Description
		3.1.1	Identifier.IdentifierValueType description changed
			filterByClientListID. IdentifierValueType description changed
			Table added with Client ID Types supported for each intermediary type
		Entire document	Numerous instances of 'tax agent' changed to 'business intermediary' throughout document
		5	Error code 6 removed (authentication expired)
		Entire document	Lists of tables, figures and samples removed from build pack, along with all table, figure and sample captions
			Removed entire 'use cases and scenarios' section—this information can be found at https://www.ird.govt.nz/software-providers/
		5 Response codes	Error code 6 removed (authentication expired)
	14/02/19	Entire document	Removed entire 'use cases and scenarios' section – such information can be found at https://www.ird.govt.nz/software-providers/
			Lists of tables, figures and samples removed from build pack, along with all table, figure and sample captions
	14/02/19	5.2	LSTID added to description of error code 120
	19/11/18	1.4.1	Section 1.4.1 added to cover mutual TLS security and certificates
VERSION NUMBERS REMOVED HENCEFORTH		2.3 3.1.1 5.1	Removed supported account types, these should be enumerated in the overview build pack Change result payload to have correct field name
V1	12/04/18		V1 released