

Inland Revenue

Build Pack: Employment Service

Date: 16/04/2020
Version: 2.0

Contents

V2 SERVICE UPDATES.....	3
1 Overview.....	5
1.1 This solution	5
1.2 Intended audience.....	5
1.3 Related services	5
1.3.1 Identity and Access Services	5
1.3.2 Employment Information Service	6
1.4 Prerequisites.....	6
1.4.1 Mutual transport layer security and certificates	6
2 Solution design	7
2.1 Architecture.....	7
2.2 Service scope	7
2.3 Messaging	7
2.4 Security	9
3 Operations	12
3.1 Create	14
3.2 Update.....	18
3.3 Terminate	23
3.4 RetrieveList	24
3.4.1 Request	24
3.4.2 Response	25
4 End points, schemas and WSDLs.....	26
4.1 End points.....	26
4.2 Schemas	26
4.3 WSDLs.....	26
5 Response codes	27
5.1 Generic Gateway response status codes	27
5.2 Response codes specific to Employment Service.....	28
6 Glossary.....	31
7 Change log.....	33

V2 SERVICE UPDATES

The following key changes have been made to the Employment Service Return Service in preparation for the update to v2.

Document section	Description
3 Operations	<ul style="list-style-type: none"> Updated schema references from 'Employment.xsd' to 'Employment.v2.xsd'
3.1 Create	<ul style="list-style-type: none"> Updated 'KiwiSaverStatus', changed valid options to: AK, OK, NK, CT, AE (Removed: OT, NM, CH) Added new field EmployeeExemptIncome Updated employeeNameOnEILine to allow 255 characters, previously this was 20 Added tax codes table to show valid tax codes. ESS, SLCIR, and SLBOR are no longer valid tax codes Updated employeeKiwiSaverEligibility to use codes NE, EE, and EA. Add table of codes below fields
3.2 Update	<ul style="list-style-type: none"> Removed 'KiwiSaverStatus' field as it is no longer used for the Update operation Added new optional field 'lateOptOutReason' Added new optional field 'otherLateOptOutReason' field Updated employeeNameOnEILine in updateBody and in employeeIdentifier to allow 255 characters, previously this was 20 Updated employeeKiwiSaverEligibility to use codes NE, EE, and EA. Add table of codes below fields
3.4 RetrieveList	<ul style="list-style-type: none"> Updated employeeNameOnEILine to allow 255 characters, previously this was 20
5 Response codes	<ul style="list-style-type: none"> Removed codes 119, 120, 123 as they correspond to web request processing which is no longer used Added code 124: 'The start and/or stop date overlaps with multiple other records' Added code 130: 'The provided KiwiSaver Status is not valid'. This response is returned when KiwiSaver Status is not one of the following values: AK, OK, NK, CT, AE. Added code 131: 'The provided Employee Exempt Income type is not valid'. This response is returned when Exempt Income type is not one of the following: BLH, HPT, OES, RTA, TAO, VBS. Added code 132: 'The provided KiwiSaver Late Opt-Out Reason is invalid' Added code 133: 'Other Late Opt-Out Reason must be provided' Added code 134: 'Opt-Out is late, so other reason must be provided' Added code 135: 'Opt-Out must be set to true as lateOptOutReason has been provided' Added code 136: 'The provided employee KiwiSaver Eligibility status was invalid' Added code 137: 'Tax code is unsupported for ES version 2.'

Document section	Description
	<ul style="list-style-type: none">• Added code 138: Employee must not have an 'SL' type tax code, as they have no student loan or they have a student loan repayment exemption• Added code 139: Employee must have an 'SL' type tax code, as they have a student loan and do not have student loan repayment exemption.

1 Overview

1.1 This solution

Inland Revenue has a suite of digital services available for consumption by our service providers that support efficient, electronic business interactions with Inland Revenue. The Employment Service described in this build pack document forms part of a suite of Gateway Services.

This is a stand-alone document intended to provide the technical details required to support the end-to-end onboarding of Gateway Services. It describes the architecture of the technical solution, schemas, end points, sample payloads to use in non-production environments, and also its interaction with other build packs that cover different aspects of Gateway Services.

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

1.2 Intended audience

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

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

1.3 Related services

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

1.3.1 Identity and Access Services

The Identity and Access Services (IAS) are used to authenticate access. Authentication tokens will need to be retrieved via IAS prior to making calls to the Employment Service.

This build pack was written using information from version 1.5 of the IAS build pack.

1.3.2 Employment Information Service

The Employment Information Service build pack v2 describes the operations provided under the Employment Information web service (v2), which forms part of the Gateway Services suite. The operations offered by this Service include the ability to submit a return to Inland Revenue for a customer, provide figures to assist in the calculation and display of return information prior to submission, return a status for a particular return and retrieve a previously-submitted return and the values associated to it.

This build pack was written using information from the Employment Information Service build pack v2.

1.4 Prerequisites

Party	Requirement	Description
Service provider	Acquire a X.509 certificate from a competent authority for the Test and Production environments.	This is required for secure authentication with Inland Revenue. Note that the same certificate cannot be used for the Test and Production environments.

1.4.1 Mutual transport layer security and certificates

Mutual transport layer security (TLS) is implemented for this 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.

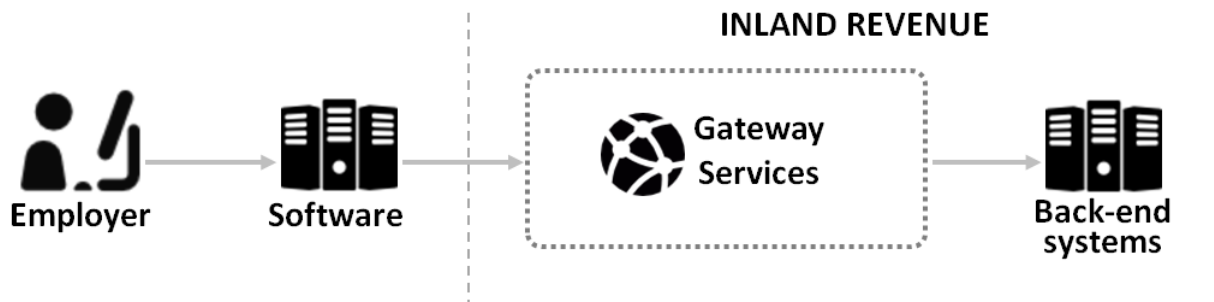
- [Comodo](#)
- [GeoTrust](#)
- [DigiCert](#)
- [GlobalSign](#)
- [Symantec](#)
- [Thawte](#)
- [IdenTrust](#)
- [Entrust](#)
- [Network Solutions](#)
- [RapidSSL](#)
- [Entrust Datacard](#)
- [GoDaddy](#).

2 Solution design

2.1 Architecture

Inland Revenue is offering a suite of SOAP-based services in order to facilitate interactions with Inland Revenue via software packages. The Gateway Services suite will be used by approved software vendors to facilitate everything from registration activities, filing returns, making payments and other service offerings in order to allow customers to interact with Inland Revenue.

The diagram below illustrates the flow of data to Inland Revenue.



The 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. Any malformed XML will be rejected by the Gateway Services prior to any schema validation.

2.2 Service scope

The following operations are provided for the Employment Service:

- **Create:** This operation will allow for the creation of an employer/employee relationship, as well as the submission of KS1/KS10 information.
- **Update:** This operation will allow for the updating of an employee/employer relationship, as well as for opting out of KiwiSaver.
- **Terminate:** This operation will be used for the termination (end dating) of an employee/employer relationship.
- **RetrieveList:** This operation can be used to retrieve a list of current and ceased employees linked to the requesting employer (Note: This operation is not available to payroll bureaus).

2.3 Messaging

All SOAP messages require a SOAP header containing **Action:** parameters, as well as a SOAP body containing a structured XML payload.

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. 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:ret="https://services.ird.govt.nz/GWS/Employment/"
  xmlns:emp="https://services.ird.govt.nz/GWS/Employment/:types/CreateRequest"
  xmlns:a="http://www.w3.org/2005/08/addressing">
  <soap:Header>
    <a:Action>https://services.ird.govt.nz/GWS/Employment/v2/Employment/someOperation
    </a:Action>
  </soap:Header>
  <soap:Body>
    <emp:Create>
      <emp:CreateRequestMsg>
        <cre:CreateRequestWrapper>
          <emp1:createRequest>
            <...request fields...>
          </emp1:createRequest>
        </cre:CreateRequestWrapper>
      </emp:CreateRequestMsg>
    </emp:Create>
  </soap:Body>
</soap:Envelope>
```

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/Employment/v2/Employment/CreateResponse
    </a:Action>
  </s:Header>
  <s:Body>
    <CreateResponse xmlns="https://services.ird.govt.nz/GWS/Employment/">
      <CreateResult
        xmlns:b="https://services.ird.govt.nz/GWS/Employment/:types/CreateResponse"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <b:CreateResponseWrapper>
          <employmentResponse xmlns="urn:www.ird.govt.nz/GWS:types/Common.v2">
            <statusMessage>
              <statusCode>0</statusCode>
              <errorMessage/>
            </statusMessage>
          </employmentResponse >
        </b:CreateResponseWrapper>
      </CreateResult>
    </CreateResponse>
  </s:Body>
</s:Envelope>
```

2.4 Security

An OAuth token is required in the HTTP header and can be acquired via an IAS call. Users will Gateway Services requests are access-controlled using an OAuth token that identifies 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.

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 who are 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 will be two end points, which are summarised in the bullet points below (the table immediately afterwards provides more detail):

1. There is an end point to which service providers' centralised **cloud** locations can connect. 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 service providers from issues caused by heavy usage from other providers.
2. For service 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 for cloud-based connections	End point for desktop connections
Purpose	<ul style="list-style-type: none"> Primary preferred end point to connect to from service providers for Gateway Services. 	<ul style="list-style-type: none"> Additional transitory 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	<ul style="list-style-type: none"> Cloud applications 	<ul style="list-style-type: none"> Desktop/native applications For connecting from multiple decentralised clients
Constraints	<ul style="list-style-type: none"> Only for source locations with client-side TLS certificates On the cloud end point Inland Revenue has controls to shield service providers from issues caused by heavy usage from other providers 	<ul style="list-style-type: none"> 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 OAuth2 refresh tokens will not be offered to desktop clients
Mutual TLS	<ul style="list-style-type: none"> Inland Revenue explicitly trusts the certificate the service provider associates with the TLS connection as client for Mutual TLS connections and uses it to identify the service provider in conjunction with the web service identification below 	<ul style="list-style-type: none"> Server-side certificates only
Minimum TLS version	<ul style="list-style-type: none"> 1.2 	<ul style="list-style-type: none"> 1.2
URL	<ul style="list-style-type: none"> Contains ../gateway/.. 	<ul style="list-style-type: none"> Contains ../gateway2/..
Port	<ul style="list-style-type: none"> 4046 	<ul style="list-style-type: none"> 443 (Default https port)

	End point for cloud-based connections	End point for desktop connections
Web service consumer identification	<ul style="list-style-type: none"> To be identified in web service calls—each cloud application will be given client_id/client_secret credentials during onboarding to allow it to call this end point 	<ul style="list-style-type: none"> Desktop clients will be given different client_id/client_secret credentials to cloud application clients
Firewalling in production	<ul style="list-style-type: none"> No IP address restrictions Access limited by certificate enrolment 	<ul style="list-style-type: none"> No IP address restrictions
Firewalling in non-production environments	<ul style="list-style-type: none"> No IP address restrictions Access limited by certificate enrolment 	<ul style="list-style-type: none"> 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 may 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, then the agent-client linking is also considered.

3 Operations

IMPORTANT

The end points, schemas and WSDLs listed here are subject to change.

For the authoritative definitions, please visit

<https://www.ird.govt.nz/software-providers/>

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 tax types 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.v2.xsd
- emp: Employment.v2.xsd

The response structure for all employment requests will use the two default service response fields: **statusCode** and **errorMessage**. The identifier for this XML is **employmentResponse** in the Employment namespace.

For example:

```
<employmentResponse xmlns="urn:www.ird.govt.nz/GWS:types/Employment.v2">
  <statusMessage xmlns="urn:www.ird.govt.nz/GWS:types/Common.v2">
    <statusCode>0</statusCode>
    <errorMessage>Success</errorMessage>
  </statusMessage>
</employmentResponse>
```

All operations for the Employment Service will contain three standard header fields:

- softwareProviderData
- identifier
- accountType.

The **identifier** field is common across all Gateway Services but refers to different parties in different services. In all cases it is the party with delegated permissions to whom an OAuth token is provided. If the value cannot be resolved to a known context, or if it can but the provided OAuth token does not have the necessary delegated permissions then the error code 4 "unauthorised delegation" is returned. For this Employment Service this will always be the account IRD number of the employer's EMP account.

For example:

```
<cmn:softwareProviderData>
  <cmn:softwareProvider>SoftwareProvider</cmn:softwareProvider>
  <cmn:softwarePlatform>SoftwarePlatform</cmn:softwarePlatform>
  <cmn:softwareRelease>v1</cmn:softwareRelease>
</cmn:softwareProviderData>

<cmn:identifier IdentifierValueType="ACCIRD">012345678</cmn:identifier>
<cmn:accountType>PSO</cmn:accountType>
```

Field	Description
softwareProvider	The company that developed the software
softwarePlatform	The field value will be provided by Inland Revenue during the onboarding process
softwareRelease	The version of the software package
IdentifierValueType	The ID type being submitted. For the Employment Service this value will be ACCIRD.
Identifier	The value submitted for this field should contain only digits, with no dashes. IRD numbers that are eight digits must be padded with a leading zero.
AccountType	The account type being submitted can only be 'PSO' or 'EMP'.

Proper use:

- All softwareProviderData fields will need to be the same as that which is provided to Inland Revenue at the time of onboarding
- The identifier is that of the tax payer on whose behalf the operations are being performed.

Example scenario:

- Employer with IRD 898989898 submits for employee IRD 121212121
 - Third party calls /Employment/Create/ with


```
<cmn:identifier IdentifierValueType="ACCIRD">898989898 </cmn:identifier>
<cmn:accountType>PSO</cmn:accountType>
```

3.1 Create

Create enables an employer to submit information to Inland Revenue in regard to a new employee; employee IRD number, employee name, EMS name, tax code, employment start date, employment finish date, employee date of birth, employee contact details, KS1 KiwiSaver enrolment information.

NOTE: If an employee meets the legislative requirements to opt out of KiwiSaver and wishes to do so and the employer has not yet notified Inland Revenue of this new employee, then the following must be done:

- A *Create* request must be submitted AND
- An *Update* request must also be submitted, including the following fields:
 - optedOut
 - employeeBankAccountNumber
 - accountHolderName
 - OptedOutSignatureDate

In this scenario, it is possible that the *Create* request would not have had time to process and become effective before the *Update* request is sent. In this case, the *Update* request would receive an error response code indicating the *Create* request has not yet processed.

```
<emp1:createRequest>
  <emp1:header>
    <com:softwareProviderData>
      <com:softwareProvider></com:softwareProvider>
      <com:softwarePlatform></com:softwarePlatform>
      <com:softwareRelease></com:softwareRelease>
    </com:softwareProviderData>
    <com:identifier IdentifierValueType=""></com:identifier>
    <com:accountType></com:accountType>
  </emp1:header>
  <emp1:createBody>
    <emp1:employeeIRD></emp1:employeeIRD>
    <emp1:employeeName>
      <com:nameTitle></com:nameTitle>
      <com:nameFirst></com:nameFirst>
      <com:nameSurname></com:nameSurname>
      <com:nameMiddle></com:nameMiddle>
    </emp1:employeeName>
    <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
    <!-- 1 to 4 repetitions:-->
    <emp1:taxCode></emp1:taxCode>
    <emp1:employmentStartDate></emp1:employmentStartDate>
    <emp1:employmentFinishDate></emp1:employmentFinishDate>
    <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
    <emp1:employeeAddress>
      <com:streetAddress>
        <com:streetNumber></com:streetNumber>
        <com:streetName></com:streetName>
      </com:streetAddress>
      <!--Optional:-->
      <com:unit>
        <com:type></com:type>
        <com:number></com:number>
      </com:unit>
      <com:townCity></com:townCity>
      <com:postCode></com:postCode>
      <com:country>NZ</com:country>
    </emp1:employeeAddress>
  </emp1:createBody>
</emp1:createRequest>
```

```

</emp1:employeeAddress>
<emp1:employeeEmailAddress></emp1:employeeEmailAddress>
<emp1:employeeMobilePhoneNumber>
  <com:phoneType></com:phoneType>
  <com:country></com:country>
  <com:areaCode></com:areaCode>
  <com:number></com:number>
  <!--Optional:-->
  <com:extension></com:extension>
</emp1:employeeMobilePhoneNumber>
<!--Optional:-->
<emp1:employeeDayPhoneNumber>
  <com:phoneType></com:phoneType>
  <com:country></com:country>
  <com:areaCode></com:areaCode>
  <com:number></com:number>
  <!--Optional:-->
  <com:extension>?</com:extension>
</emp1:employeeDayPhoneNumber>
<emp1:kiwiSaverStatus></emp1:kiwiSaverStatus>
<emp1:employeeKiwiSaverEligibility></emp1:employeeKiwiSaverEligibility>
</emp1:employeeExemptIncome>
</emp1:createRequest>

```

Field	Required	Description
identifier	Required	The value submitted for this field should contain only digits, with no dashes. IRD numbers that are eight digits must be padded with a leading zero.
accountType	Required	This value will need to be 'PSO' or 'EMP' to represent the Employment account
employeeIRD	Required	If the employee doesn't have an IRD number, enter all zeros
employeeName	Required	Full employee name Title (optional), First Name (mandatory), Middle Name (optional), Surname (mandatory for individuals).
employeeNameOnEILine	Required	This is the name (up to 255 characters) provided on the EI return
taxCode	Required	Multiple tax codes can be added in one submission (see table below for list of acceptable values)
employmentStartDate	Required	Format: YYYY-MM-DD
employmentFinishDate	Optional	If future Finish Date is known, place here and future termination will not be needed
employeeDateOfBirth	Optional	Format: YYYY-MM-DD
employeeAddress	Optional	Open address to allow for foreign addresses. The FreeFormAddress choice in the OpenAddressType is now supported for a limited time. This should only be used as a

Field	Required	Description
		temporary solution for single field address data. Required when opting into KiwiSaver (as for a KS1 form).
employeeEmailAddress	Optional	Employee email address
employeeMobilePhoneNumber	Optional	Standard mobile field
employeeDayPhoneNumber	Optional	Standard phone field
kiwiSaverStatus	Required	Employee KiwiSaver status (see table below for list of acceptable values)
employeeKiwiSaverEligibility	Optional	Employee KiwiSaver Eligibility The combination of this field and the kiwiSaverStatus field determines when an employee is opting in (the equivalent of a KS1 form). See table below for list of acceptable values.
employeeExemptIncome	Optional	Employee exempt income reason for KiwiSaver—see table below for list of acceptable values.

Tax codes		
CAE	EDW	ND
MESL	MSL	SH
SB	SBSL	ST
WT	SSL	ME
NSW	M	SHSL
STC	S	STSL

KiwiSaver status code	Description
AK	Active KiwiSaver member
OK	Opting into KiwiSaver
NK	Not eligible for KiwiSaver
CT	Casual/temporary employee
AE	Auto-enrol

KiwiSaver eligibility code	Description
NE	New employee
EE	Existing employee
EA	Existing employee auto-enrolled into KiwiSaver

Employee exempt income options	Description
BLH	Provide board-lodging-use of a house or part house or equivalent allowance
HPT	Honoraria payments
OES	Overpayment of an amount of an employer's superannuation cash contribution
RTA	Retiring allowance
TAO	Taxable allowances for accommodation and living costs overseas
VBS	Some payments under a voluntary bonding scheme and living costs overseas

3.2 Update

IMPORTANT NOTE

When the Update operation is carried out, it completely replaces ALL the existing information on the employment relationship. This means that where data has previously been supplied for a field, a subsequent Update with no data for that same field will result in the data being overwritten (removed).

For example, employee address information previously supplied would be overwritten if a subsequent Update operation updating that employee's tax code did not include address information.

Therefore any data previously provided to Inland Revenue for a field will need to be included in all subsequent Update operations for it to be retained.

For example:

If employee IRD 123-456-789 already has tax code M SL and tax code STC needs to be added. An update will need to include both M SL and STC.

```
<emp1:updateRequest>
  <emp1:header>
    <com:softwareProviderData>
      <com:softwareProvider></com:softwareProvider>
      <com:softwarePlatform></com:softwarePlatform>
      <com:softwareRelease></com:softwareRelease>
    </com:softwareProviderData>
    <com:identifier IdentifierValueType=""></com:identifier>
    <com:accountType></com:accountType>
  </emp1:header>
  <emp1:employeeIdentifier>
    <emp1:employeeIRD></emp1:employeeIRD>
    <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
    <!--Optional:-->
    <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
    <!--Optional:-->
    <emp1:employmentStartDate></emp1:employmentStartDate>
  </emp1:employeeIdentifier>
  <emp1:updateBody>
    <emp1:employeeIRD></emp1:employeeIRD>
    <emp1:employeeName>
      <com:nameTitle></com:nameTitle>
      <com:nameFirst></com:nameFirst>
      <com:nameSurname></com:nameSurname>
      <com:nameMiddle></com:nameMiddle>
    </emp1:employeeName>
    <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
    <emp1:employmentStartDate></emp1:employmentStartDate>
    <!--Optional:-->
    <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
    <!--1 to 4 repetitions:-->
    <emp1:taxCode></emp1:taxCode>
    <!--Optional:-->
    <emp1:employeeAddress>
      <com:streetAddress>
      <com:streetNumber></com:streetNumber>
```

```

    <com:streetName></com:streetName>
  </com:streetAddress>
  <!--Optional:-->
  <com:unit>
    <com:type></com:type>
    <com:number></com:number>
  </com:unit>
  <com:townCity></com:townCity>
  <com:postCode></com:postCode>
  <com:country>NZL</com:country>
</emp1:employeeAddress>
<!--Optional:-->
<emp1:employeeEmailAddress?></emp1:employeeEmailAddress>
<!--Optional:-->
<emp1:employeeMobilePhoneNumber>
  <com:phoneType></com:phoneType>
  <com:country></com:country>
  <com:areaCode></com:areaCode>
  <com:number></com:number>
  <!--Optional:-->
  <com:extension></com:extension>
</emp1:employeeMobilePhoneNumber>
<!--Optional:-->
<emp1:employeeDayPhoneNumber>
  <com:phoneType></com:phoneType>
  <com:country></com:country>
  <com:areaCode></com:areaCode>
  <com:number></com:number>
  <!--Optional:-->
  <com:extension></com:extension>
</emp1:employeeDayPhoneNumber>
<!--Optional:-->
<emp1:employeeKiwiSaverEligibility></emp1:employeeKiwiSaverEligibility>
<!--Optional:-->
<emp1:optedOut></emp1:optedOut>
<!--Optional:-->
<emp1:employeeBankAccountNumber>
  <!--You have a CHOICE of the next 2 items at this level-->
  <com:nzBankStandard>
    <com:bank></com:bank>
    <com:branch></com:branch>
    <com:account></com:account>
    <com:suffix></com:suffix>
  </com:nzBankStandard>
  <com:nzBankCreditUnion>
    <com:bank></com:bank>
    <com:branch></com:branch>
    <com:account></com:account>
    <com:suffix></com:suffix>
  <!--Optional:-->
  <com:referenceNumber></com:referenceNumber>
  </com:nzBankCreditUnion>
</emp1:employeeBankAccountNumber>
<!--Optional:-->
<emp1:accountHolderName>
  <com:nameTitle></com:nameTitle>
  <com:nameFirst></com:nameFirst>
  <com:nameSurname></com:nameSurname>
</emp1:accountHolderName>
<!--Optional:-->
<emp1:optedOutSignatureDate></emp1:optedOutSignatureDate>
<emp1:validRelationship></emp1:validRelationship>
</emp1:lateOptOutReason>

```

```

    <!--Optional:-->
    </emp1:otherLateOptOutReason>
    <!--Optional:-->
    </emp1:updateBody>
  </emp1:updateRequest>

```

Field	Requirement	Description
identifier	Required	The value submitted for this field should contain only digits, with no dashes. IRD numbers that are eight digits must be padded with a leading zero.
accountType	Required	This value will need to be 'PSO' or 'EMP' to represent the Employment account
employeeIdentifier	Required	Four fields (employeeIRD, employeeNameOnEILine, employeeDateOfBirth, employmentStartDate) used to identify the record which is to be updated. employeeIRD and employeeNameOnEILine are required fields that must match Inland Revenue's records in order to identify the appropriate employee. employeeDateOfBirth and employmentStartDate are optional and will only be used if they are submitted in the payload.
employeeIRD	Required	If the employee does not have an IRD number, enter all zeros
employeeName	Required	Full employee name Title (optional), First Name (mandatory), Middle Name (optional), Surname (mandatory for individuals).
employeeNameOnEILine	Required	This is the name (up to 255 characters) provided on the EI return
employmentStartDate	See note on right	Format: YYYY-MM-DD NOTE: Required for updateBody Optional for EmployeeIdentifierType
employeeDateOfBirth	Optional	Format: YYYY-MM-DD
taxCode	Optional	Multiple tax codes can be added in one submission (see table below for list of acceptable values)
employeeAddress	Optional	Open address to allow for foreign addresses.

Field	Requirement	Description
		<p>The FreeFormAddress choice in the OpenAddressType is now supported for a limited time. This should only be used as a temporary solution for single field address data.</p> <p>Required when opting into or out of KiwiSaver (as for a KS1 or KS10 form).</p>
employeeEmailAddress	Optional	Employee email address for KS form
employeeMobilePhoneNumber	Optional	<p>Standard mobile field for KS form. Contains phone type, country code (numeric), area code (three-digit numeric, beginning with 0), phone number (numeric) and extension (numeric).</p> <p>Note that if the person is opting out of KiwiSaver, the phone number provided must be a valid NZ number, including area code and phone number.</p>
employeeDayPhoneNumber	Optional	<p>Standard phone field for KS form. Contains phone type, country code (numeric), area code (three-digit numeric, beginning with 0), phone number (numeric) and extension (numeric).</p> <p>Note that if the person is opting out of KiwiSaver, the phone number provided must be a valid NZ number, including area code and phone number.</p>
employeeKiwiSaverEligibility	Optional	<p>Employee KiwiSaver Eligibility</p> <ul style="list-style-type: none"> Note that including this field will trigger the submission of a KS1 form unless the optedOut field (below) is set to true which will trigger the submission of a KS10. See table below for list of acceptable values
optedOut	Optional	Setting this to 'true' is the equivalent of submitting a KS10 form
employeeBankAccountNumber	Optional	Only used for KiwiSaver opt-out but not required
accountHolderName	Optional	Standard name field for KS form
optedOutSignatureDate	Optional	Standard date field for KS form
validRelationship	Required	Indicates the validity of this employment relationship. If the

Field	Requirement	Description
		record was created on accident, it must be invalidated
lateOptOutReason	Optional	Late opt-out reason for KiwiSaver NOTE: See table below for accepted values
otherLateOptOutReason	Optional	Free text field for other late opt-out reason for KiwiSaver

Tax codes		
CAE	EDW	ND
MESL	MSL	SH
SB	SBSL	ST
WT	SSL	ME
NSW	M	SHSL
STC	S	STSL

KiwiSaver eligibility code	Description
NE	New employee
EE	Existing employee
EA	Existing employee auto-enrolled into KiwiSaver

Late opt-out reasons	Description
INFO	Employer did not provide a KiwiSaver information pack within seven days of starting employment
IRIS	Inland Revenue did not send an investment statement upon allocation to a default scheme
ERIS	Employer did not provide an investment statement (for the employer-chosen KiwiSaver scheme)
EVNT	Events outside of control meant the opt-out application was unable to be submitted within the eight-week time limit
CRIT	Did not meet the criteria to join KiwiSaver (see Employee information pack [KS3] for criteria)
INER	Incorrectly enrolled under the age of 18
OTHR	Other reason (please explain)

3.3 Terminate

Terminate enables an employer to submit information to Inland Revenue in regard to a departing employee—employee IRD number, employee name, employee date of birth, employee end date.

Once a termination date is known:

```
<emp1:terminateRequest>
  <emp1:header>
    <com:softwareProviderData>
      <com:softwareProvider></com:softwareProvider>
      <com:softwarePlatform></com:softwarePlatform>
      <com:softwareRelease></com:softwareRelease>
    </com:softwareProviderData>
    <com:identifier IdentifierValueType=""></com:identifier>
    <com:accountType></com:accountType>
  </emp1:header>

  <emp1:employeeIdentifier>
    <emp1:employeeIRD></emp1:employeeIRD>
    <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
    <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
    <emp1:employmentStartDate></emp1:employmentStartDate>
  </emp1:employeeIdentifier>
  <emp1:terminateBody>
    <emp1:employmentFinishDate></emp1:employmentFinishDate>
  </emp1:terminateBody>
</emp1:terminateRequest>
```

Field	Required	Description
identifier	Required	The value submitted for this field should contain only digits, with no dashes. IRD numbers that are eight digits must be padded with a leading zero.
accountType	Required	This value will need to be 'PSO' or 'EMP' to represent the Employment account
employeeIdentifier	Required	Four fields (employeeIRD, employeeNameOnEILine, employeeDateOfBirth, employmentStartDate) used to identify the record which is to be updated. employeeIRD and employeeNameOnEILine are required fields that must match Inland Revenue's records in order to identify the appropriate employee. employeeDateOfBirth and employmentStartDate are optional and will only be used if they are submitted in the payload.
employmentFinishDate	Required	Format: YYYY-MM-DD

3.4 RetrieveList

This can be used to retrieve a full list of current and ceased employees (by not including an employee IRD number in the request) or retrieve one individual employee.

Note: This operation is not available to payroll bureaus.

3.4.1 Request

```
<emp1:retrieveListRequest>
  <emp1:header>
    <com:softwareProviderData>
      <com:softwareProvider></com:softwareProvider>
      <com:softwarePlatform></com:softwarePlatform>
      <com:softwareRelease></com:softwareRelease>
    </com:softwareProviderData>
    <com:identifier IdentifierValueType=""></com:identifier>
    <com:accountType></com:accountType>
  </emp1:header>
  <emp1:retrieveListBody>
    <emp1:employeeIRD></emp1:employeeIRD>
  </emp1:retrieveListBody>
</emp1:retrieveListRequest>
```

Field	Required	Description
identifier	Required	The value submitted for this field should contain only digits, with no dashes. IRD numbers that are eight digits must be padded with a leading zero.
accountType	Required	This value will need to be 'PSO' or 'EMP' to represent the Employment account.
employeeIRD	Optional	Enter an employee's IRD number to retrieve only records for that employee. Omitting this field will request every employee linked to the employer identified in the header.

3.4.2 Response

```
<emp1:retrieveListResponse>
  <statusMessage xmlns="urn:www.ird.govt.nz/GWS:types/Common.v2">
    <statusCode></statusCode>
    <errorMessage></errorMessage>
  </statusMessage>
  <responseBody>
    <emp1:listReponse>
      <emp1:employee>
        <emp1:employeeIRD></emp1:employeeIRD>
        <emp1:employeeName></emp1:employeeName>
        <emp1:employeeNameOnEILine> </emp1:employeeNameOnEILine>
        <emp1:taxCode></emp1:taxCode>
        <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
        <emp1:employmentStartDate></emp1:employmentStartDate>
        <emp1:employmentFinishDate></emp1:employmentFinishDate>
      </emp1:employee>
      <emp1:employee>
        <emp1:employeeIRD></emp1:employeeIRD>
        <emp1:employeeName></emp1:employeeName>
        <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
        <emp1:taxCode></emp1:taxCode>
        <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
        <emp1:employmentStartDate></emp1:employmentStartDate>
        <emp1:employmentFinishDate></emp1:employmentFinishDate>
      </emp1:employee>
      <emp1:employee>
        <emp1:employeeIRD></emp1:employeeIRD>
        <emp1:employeeName></emp1:employeeName>
        <emp1:employeeNameOnEILine></emp1:employeeNameOnEILine>
        <emp1:taxCode></emp1:taxCode>
        <emp1:employeeDateOfBirth></emp1:employeeDateOfBirth>
        <emp1:employmentStartDate></emp1:employmentStartDate>
        <emp1:employmentFinishDate></emp1:employmentFinishDate>
      </emp1:employee>
    </emp1:listResponse>
  </emp1:responseBody>
</emp1:retrieveListResponse>
```

Field	Required	Description
employeeIRD	Required	If the employee doesn't have an IRD number, enter all zeros
employeeName	Required	Full employee name title (optional), first name (optional), middle name (optional), surname (optional)
employeeNameOnEILine	Required	This is the name (up to 255 characters) provided on the EI return
taxCode	Optional	Multiple tax codes can be added in one response
employeeDateOfBirth	Optional	Format: YYYY-MM-DD
employmentStartDate	Optional	Format: YYYY-MM-DD
employmentFinishDate	Optional	Format: YYYY-MM-DD

4 End points, schemas and WSDLs

IMPORTANT

The end points, schemas and WSDLs listed here are subject to change.
For the authoritative definitions, please visit
<https://www.ird.govt.nz/software-providers/>

4.1 End points

Onboarding instructions are available at <https://www.ird.govt.nz/software-providers/>.

4.2 Schemas

The Employment Service imports 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 /Employment/ namespace so it must be kept up-to-date, without numerous redundant versions remaining.

4.3 WSDLs

The Employment Gateway Service has one WSDL, which has a target namespace of <https://services.ird.govt.nz/GWS/Employment> and can be found at <https://services.ird.govt.nz:4046/gateway/gws/Employment/?singleWsd>

NOTE: *The production URL above will not work until you have onboarded with Inland Revenue.*

All WSDL messages follow this naming convention:

Employment_<operation>_InputMessage or Employment_<operation>_OutputMessage.

```
<wsdl:portType name="Employment">
  <wsdl:operation name="Create">
  <wsdl:operation name="Update">
  <wsdl:operation name="Terminate">
  <wsdl:operation name="RetrieveList">
  <wsdl:service name=" Employment">
```

A development version of the WSDL is provided with this build pack. For easier WSDL consumption, the <xs:any> structure has been replaced with a reference to the corresponding element in the Employment.xsd. This will allow any tools that consume the WSDL to automatically pull in the data structures from the XSD. To use this, ensure the WSDL provided by Inland Revenue is in the same directory as the common.xsd and employment.xsd.

NOTE: The WSDL hosted at the end point above will not contain these XSD references, only the static WSDL provided at <https://www.ird.govt.nz/software-providers/>.

5 Response codes

The response message from the Gateway Services will always include a status code and status message. These values will describe any successes or failures of a web service call. Following the status message will be the responseBody, which will return the operations response.

NOTE: These response codes are subject to change and additional codes may be added from time to time. Software consuming this service **must** be able to account for additional responses that may not have been specifically coded.

5.1 Generic Gateway response status codes

This service applies account-level validation and some of the codes below reflect this.

Standard codes	Standard message	Description
-1	An unknown error has occurred	This error will be logged by the Gateway Services and evaluated the next business day.
0	(Success)	This resembles a successful web service call.
1	Authentication failure	Authentication failure means the token provided is not a valid token.
2	Missing authentication token(s)	No OAuth token in HTTP header.
3	Unauthorised access	The logon making the call does not have access to make the request on behalf of the client or agency. Access could not be confirmed due to OAuth token validation failing.
4	Unauthorised delegation	<p>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:</p> <ul style="list-style-type: none"> • 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 • All the values above are valid but the provided OAuth token does not have delegated access to that customer or account
5	Unauthorised vendor	The vendor provided is not authorised to use these suite of services.

Standard codes	Standard message	Description
7	Account type not supported	Queries on account types not supported in any Gateway Services web services will return this code. This will be any account type other than AIL, AIP, BPA, MPO, CRS, DWT, FAT, FBT, GMD, GSD, GST, IPS, NRT, PIE, PRS, PSO, EMP, RLT and RWT.
20	Unrecognised XML request	The XML submitted is not recognisable and no schema can be determined.
21	XML request failed validation	The XML structure did not meet the definition laid out by the schemas published by Inland Revenue.
(none)	(non XML)	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.
(none)	(SOAP fault) UnAuthorised	When maximum concurrency has been exceeded by the service provider this SOAP fault will be returned.

5.2 Response codes specific to Employment Service

Standard codes	Standard message	Description
100	Could not extract data from XML payload	The XML structure passes schema validation, but the data is not valid.
101	The provided information did not match with any employment relationship	The employment relationship that is attempting to be changed does not exist.
102	The provided information was not specific enough to match with a single employment relationship	For employment relationships that have minimal data. Provided data must match current records.
103	The provided IRD number was invalid	The provided IRD number was invalid.
104	The specified account has no employees	The specified account has no employees.
105	The specified employer IRD could not be linked to an EMP account	The specified employer IRD could not be linked to an EMP account.
106	A relationship between this account and employee IRD already exists	A relationship between this account and employee IRD already exists.

Standard codes	Standard message	Description
107	The cease date cannot be before the commence date	The cease date cannot be before the commence date.
108	A provided tax code was invalid	A provided tax code was invalid.
109	Two primary tax codes submitted for one person	Two primary tax codes submitted for one person.
110	KiwiSaver eligibility should be omitted when opting out	KiwiSaver eligibility should be omitted when opting out.
111	A Bank Account is required when a Bank Account Holder Name is provided	A bank account holder name was submitted without a bank account.
112	A Bank Account Holder Name is required when a Bank Account is provided	A bank account was submitted without a bank account holder name.
113	Opting out for KiwiSaver requires an opted out signature date	Opting out for KiwiSaver requires an opted out signature date.
114	Opting out for a KiwiSaver requires employee address information	Street address, city and post code are all required when opting out.
115	Opting in for KiwiSaver expects bank account to be omitted	Opting in for KiwiSaver expects bank account to be omitted.
116	Opting in for KiwiSaver expects bank account holder to be omitted	Opting in for KiwiSaver expects bank account holder to be omitted.
117	Opting in for KiwiSaver expects the opted out signature date to be omitted	Opting in for KiwiSaver expects the opted out signature date to be omitted.
118	Employee cannot opt out of KiwiSaver during their first 14 days of employment	Employee cannot opt out of KiwiSaver during their first 14 days of employment.
121	The provided employee IRD number is not valid	The provided employee IRD number is not valid.
122	The provided submission created a request in error, please review payload	The provided submission created a request in error, please review payload.
124	The StartDate and/or FinishDate overlaps with multiple other records	The start date and/or finish date overlap with multiple other records
130	The provided KiwiSaver Status is not valid	The provided KiwiSaver status is not valid.
131	The provided Employee Exempt Income type is not valid	The provided employee exempt income type is not valid.
132	The provided KiwiSaver Late Opt-Out Reason is invalid	The provided KiwiSaver late opt-out reason is invalid.

Standard codes	Standard message	Description
133	Other Late Opt-Out Reason must be provided	Other late opt-out reason must be provided when 'other-explanation' is selected for 'lateOptOutReason'.
134	Opt-Out is late, so other reason must be provided	If opt-out is submitted 56 days or more from the employmentStartDate then there must be a 'lateOptOutReason' selected.
135	Opt-Out must be set to true as lateOptOutReason has been provided	Opt-out must be set to true as lateOptOutReason has been provided.
136	The provided employee KiwiSaver Eligibility status was invalid	The provided employee KiwiSaver eligibility status was invalid.
137	Tax code is unsupported for ES version 2	The provided tax code is not supported in version 2 of ES. Unsupported tax code values include ESS, SLCIR and SLBOR.
138	Employee must not have an 'SL' type tax code, as they have no student loan or they have a student loan repayment exemption	Employee must not have an 'SL' type tax code, as they have no student loan or they have a student loan repayment exemption
139	Employee must have an 'SL' type tax code, as they have a student loan and do not have student loan repayment exemption	Employee must have an 'SL' type tax code, as they have a student loan and do not have student loan repayment exemption

6 Glossary

Acronym/term	Definition
Activity statement	Formally known as the Statement of Activity—the name for the data that is filed for AIM
AIM	Accounting Income Method—a method that businesses can use for reporting and paying provisional income tax. Participating businesses are required to file a Statement of Activity.
Authentication	The process that verifies the identity of the party attempting to access Inland Revenue
Authorisation	The process of determining whether a party is entitled to perform the function or access a resource
EA	Employment Activities—umbrella term for employment activities performed using the Return Service (submission of Employment Information) and/or Employment Service (submission of Employee Details) operations
ED	Employee Details—data submitted by an employer to Inland Revenue relating to new, existing, or departing employees that is submitted via the Employment Service
EI	Employment Information—data submitted by an employer relating to deductions made for their employees for a paydate
eServices	START's authenticated customer-facing portal
Gateway	START's web services gateway
GST	Goods and Services Tax
GWS	GateWay Services—the brand name for the suite of web services that Inland Revenue is providing. The Employment Service is a Gateway Service.
HTTP(S)	Hyper Text Transmission Protocol (Secure)—the protocol by which web browsers and servers interact with each other. When implemented over TLS1.2 HTTP becomes HTTPS.
IAMS	Identity and Access Management—a logical component that performs authentication and authorisation. Physically it is a set of discrete hardware and software products, plug-ins and protocols. Usually implemented as separate External IAMS (XIAMS) and Internal IAMS.
IP	Internet Protocol—the principal communication protocol in the Internet protocol suite for relaying datagrams across networks
IRD	Inland Revenue Department (ie IRD number)
NZISM	NZ Information Security Manual—the security standards and best practices for Government agencies. Maintained by the NZ Government Communications Security Bureau (GCSB).
OAuth2	An HTTPS based protocol for authorising access to a resource, currently at version 2
SOAP	Simple Object Access Protocol—a set of standards for specifying web services. Gateway Services uses SOAP version 1.2

Acronym/term	Definition
SSL	Secure Sockets Layer certificates—used to establish an encrypted connection between a browser or user’s computer and a service or website
START	Simplified Taxation and Revenue Technology—Inland Revenue’s new core tax processing application. It is an implementation of the GenTax product from FAST Enterprises.
Statement of Activity	See Activity Statement
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
WSDL	Web Service Definition Language—an XML definition of a web service interface
X.509 certificate	An international standard for encoding and describing a digital certificate. In isolation a public key is just a very large number, the X509 certificate to which it is bound identifies whose key it is, who issued it, when it expires etc. When a counterparty’s X509 digital certificate is received, the recipient takes their public key out of it and store the key in their own keystore. The recipient can then use this key to encrypt and sign the messages that they exchange with this counterparty.
XIAMS	External IAMS—an instance of IAMS that authenticates and authorises access by external parties (such as customers, trading partners etc), as opposed to internal parties (such as staff)
XML	Extensible Markup Language—a language used to define a set of rules used for encoding documents in a format that can be read by humans and machines
XSD	XML Schema Definition—the current standard schema language for all XML data and documents

7 Change log

This table lists all changes that have been made to this build pack document since V2 was created.

Version	Date of change	Document section	Description
V2	16/04/20	2.3	<ul style="list-style-type: none"> Removed "To:" from the first sentence on SOAP headers: <ul style="list-style-type: none"> All SOAP messages require a SOAP header containing To: and Action: parameters, as well as a SOAP body containing a structured XML payload.
	03/04/20		<ul style="list-style-type: none"> V2 released