Inland Revenue
Te Tari Taake

Inland Revenue

Gateway Services onboarding: Return service (GST)

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IN CONFIDENCE

About this document

This document is the onboarding guide for service providers to guide them step-by-step through the process of consuming Inland Revenue's new Gateway Services. It focuses on core business activities as prerequisites, testing activities, organisation contact lists etc.

There is also a Return service build pack document that lists the technical requirements and specifications, solution design and other bi-directional information sources between IR and external clients.

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1 Overview

Inland Revenue has a range of digital services that facilitate secure and efficient business interactions between itself and its customers. Inland Revenue's Gateway Services provide a suite of services, including the returns service for the GST that allows customers to file returns electronically through this gateway.

This document should be read in conjunction with the relevant technical build packs (see Appendix A).

The diagram below shows how the Onboarding and Build packs link together.

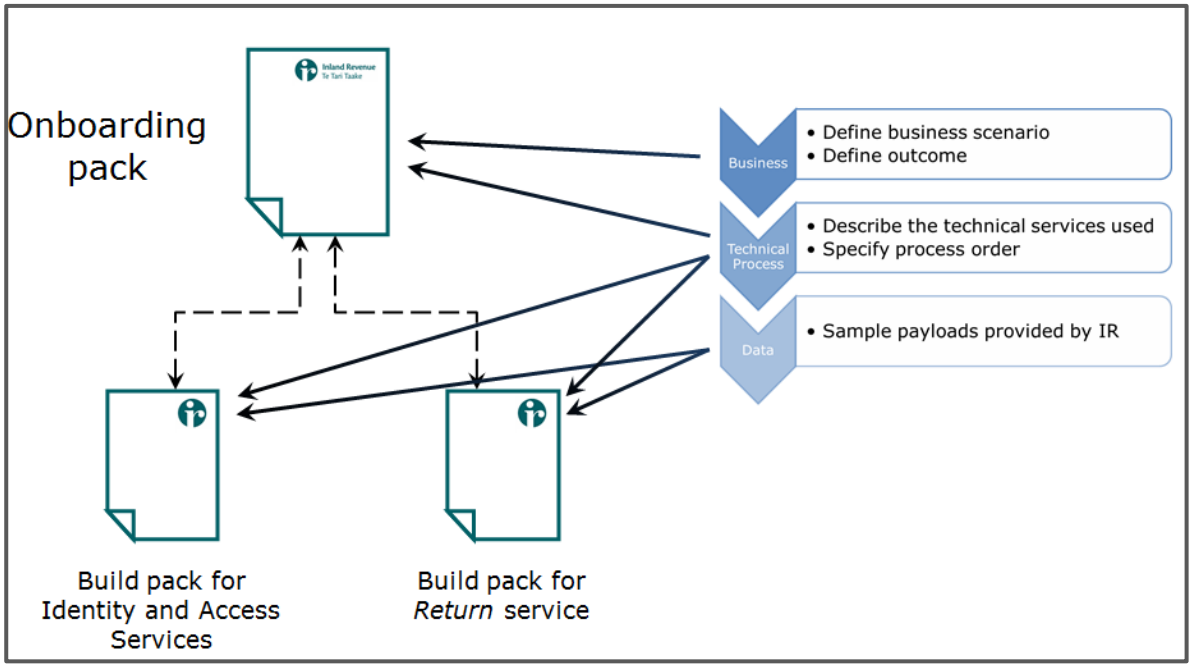


Figure 1: Onboarding and build pack structure

1.1 This solution

The new Gateway Return Service solution will allow customers and tax agents to file new returns in real time, amend return, retrieve return due date, query return status and retrieve previously filed returns.

Return service offers following capability:

- ***Prepop*** provides the Customers information data populated in prepopulated fields
- ***File*** enables filing GST return and also enables amendments to previously filed return to be made
- ***RetrieveStatus*** provides the processing status of previously filed GST return
- ***RetrieveReturn*** provides a copy of previously filed GST return
- ***RetrieveFilingObligation*** provides the next due date of GST return

1.2 Benefits of using the Return service

The Return service provides the following benefits:

- ***Prepop*** will provide prepopulated data for the customers (where this is known by IR); IRD number, filing frequency, due date etc. This data can be added to or modified before the GST return is filed or submitted.
- ***File*** can be used in conjunction with the *Prepop* to file GST return. It can also be used in order to file an amended GST return.
- ***RetrieveStatus*** enables the customer or tax agent to check the status of GST return after IR's nightly batch processing has been completed. Also allows to retrieve the status of previously filed return
- ***RetrieveReturn*** enables the customer or tax agent to request a copy of previously filed GST return.
- ***RetrieveFilingObigation*** enables the customer or tax agent to retrieve the date on which the next return is due, as well as any overdue returns.

2 Path to production

2.1 Registration prerequisites

Service Partner registration requests should include information about the entity requesting access, the system(s) that will integrate with Inland Revenue (examples include software products to market and in-house software) and the intended use of Gateway Services and the data exchanged (customer reach, customer segmentation, expected volumes, etc).

Inland Revenue has a legislative duty of care for treating all tax payer and business information as confidential. Inland Revenue will complete due diligence which your Relationship Manager will discuss with at the time of registration.

2.2 Supporting your software development lifecycle

Your Inland Revenue Relationship Manager will support the entire software development lifecycle including the journey from initial registration, testing, deployment to production and managing the on-going relationship in a BAU environment. Your Relationship Manager will ensure access to the latest documentation and Inland Revenue non-production environments.

The design and build phase of your software development lifecycle is supported by Inland Revenue on-boarding documentation and associated build packs listed in the appendix. This document links the business overview with the technical information contained in the associated build packs. Build packs describe the technical interactions for services, lists of response codes and provide links to schemas, WSDLs and the like. Emulated services may be available to support early development effort while the testing phase, test planning and Inland Revenue test environments are described in section 2.3. Your Relationship Manager will work with you on go-live and production support.

Inland Revenue will release minor and major upgrades to the Gateway Services from time to time. Your Relationship Manager will manage your transition and any associated certification requirements, if any.

Discussions regarding volume changes, your product roadmap(s) and innovative uses for Gateway Services should be directed to your Inland Revenue Relationship Manager in the first instance.

2.2.1 Emulated Services

These are provided for service providers to build against. Once they have a basic service ready service providers should move to the Digital Test Environment (DTE) from the Emulated Services offering.

Service providers will be given access to Emulated Services for the GST Return service operations that can be used to test software builds against, prior to partnership testing with IR.

Emulated service	Expected outcome
Authentication	Authentication emulated service will: • Issue Authorisation token • Validate Authorisation Access token.
GST operations	GST Return Emulated Service will: • Send mock positive responses for five operations (Prepop, Retrievereturn, Retrievefilingobligation, File and Retrieve Status) • Validate request schema for all five operations and throw mock error if submitted schema is not valid.

Table 1: Emulated Services and expected outcomes

2.3 Testing phase and environment information

Testing with Inland Revenue will be carried out in an integrated test environment, mirroring the Production environment. The objective of the partnership test is to allow Inland Revenue and service providers to ensure their readiness for Production.

Test duration timelines will be managed via a partnership test plan. Testing will be conducted in the dedicated digital test environment.

2.3.1 Data allocation

Inland Revenue will set up and provide test data for service providers to use in the scenarios outlined in the diagram below (section 2.3.2). The test data will be refreshed in a controlled fashion during partnership testing by Inland Revenue, as requested by service providers.

2.3.2 Test scenarios

Scenarios identified for testing purposes are outlined below. The figure below lists the typical test scenarios that have been identified for testing.

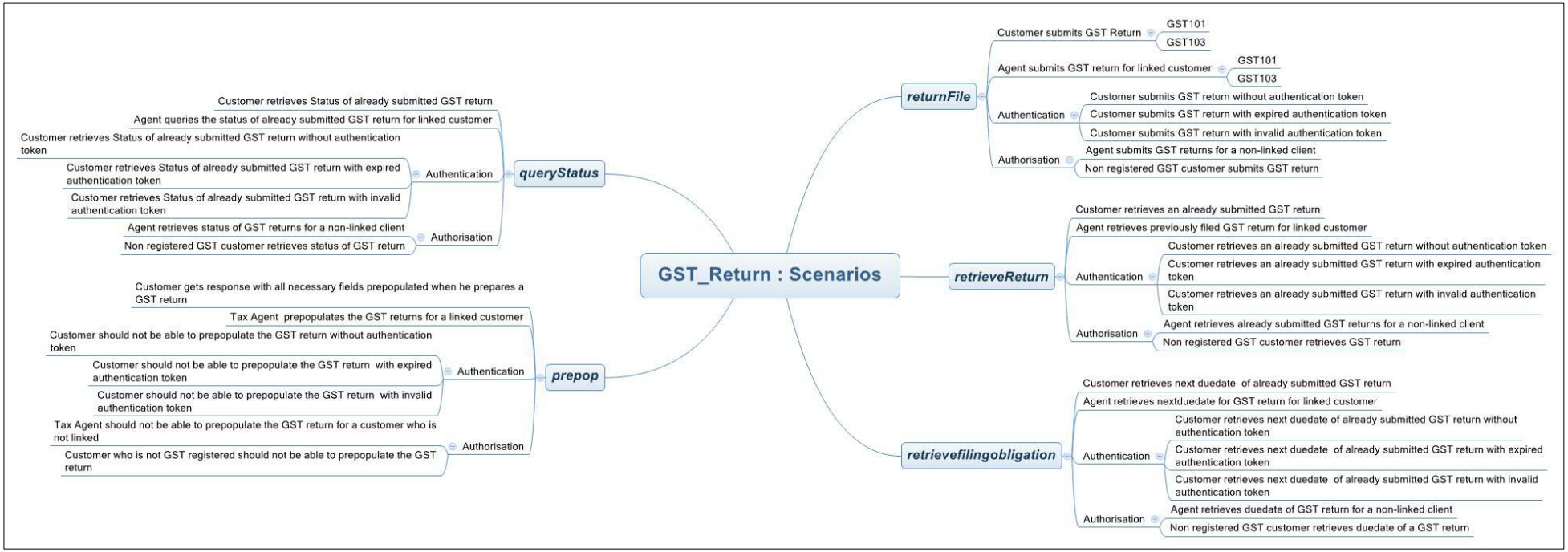


Figure 2: 'Mind map' of test scenarios

2.4 Certification

This section will articulate:

- Any certification required to consume the Return service

3 Business use cases

Please note the following:

This section identifies a selection of use cases and business outcomes. It also identifies a sequence of Gateway Service calls to achieve those outcomes. The sequence of calls has been confirmed as functionally correct by Inland Revenue. IR recognises Gateway Services may be called in different ways to satisfy the same outcome.

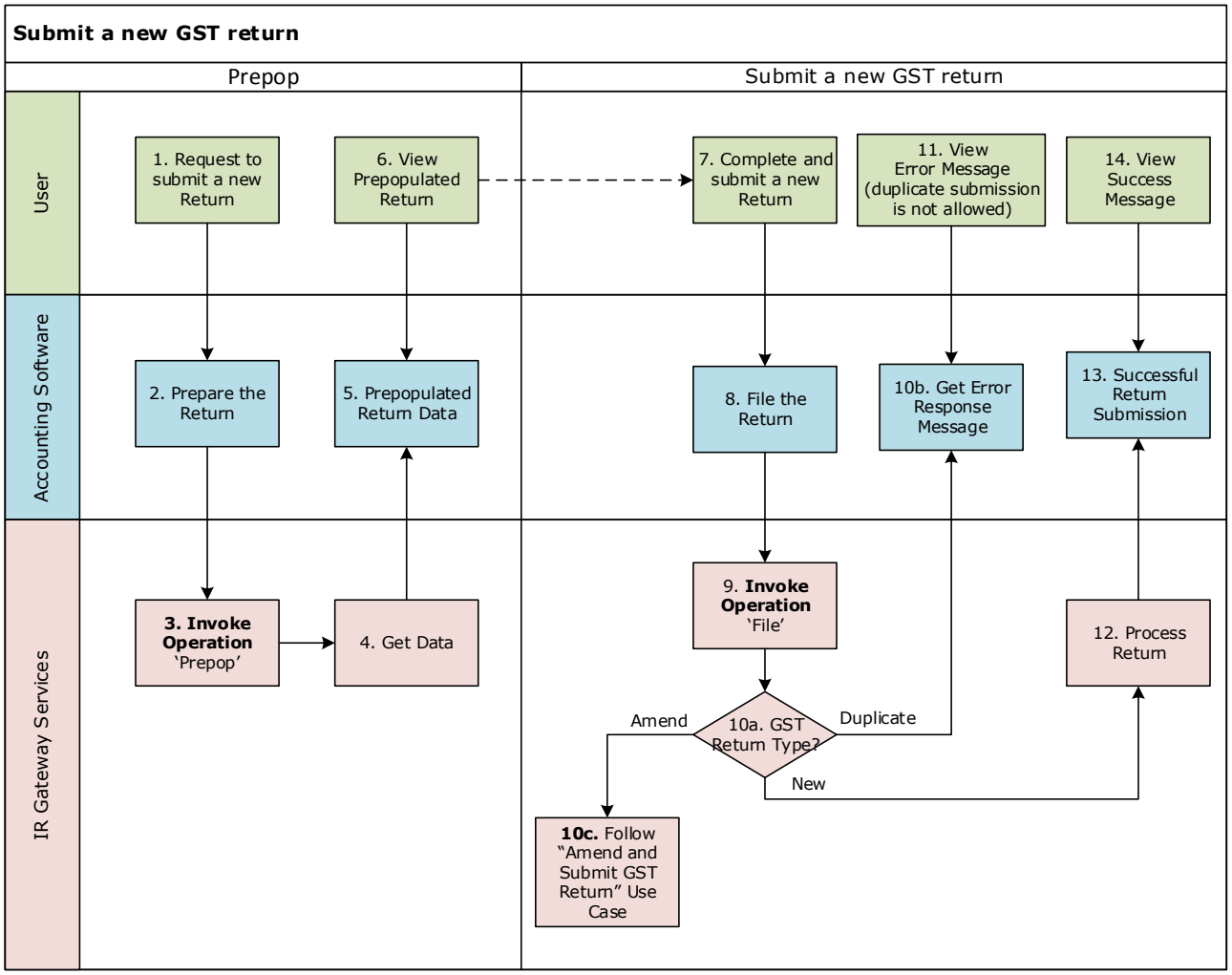
Additionally the detail in this section should not inhibit innovation to combine calls across the Gateway Service to achieve the same outcome or solve business needs not described here.

1) The linking/delinking between a customer and tax agent is excluded from the scope of Gateway Services. This action must be done using the existing online services channel, which may take up to 48 hours.
2) Terms 'File return' and 'Submit return' are used interchangeably and represent the same intent of submitting a GST return.
3) The table below summarises the business use cases and the sequence in which the Return service operations are used. The use cases are described in more detail in the following section.

SNo	Use case	File	Prepop	Retrieve Status	Retrieve Return	Retrieve Filing Obligation
1	Submit a new GST return	2	1			
2	Retrieve the status of previously-submitted GST return and next filing obligation			1		2
3	Retrieve previously-submitted GST return				1	
4	Amend and submit a GST return	2	1			

Table 2: Summary of business use cases

3.1 Submit a new GST return



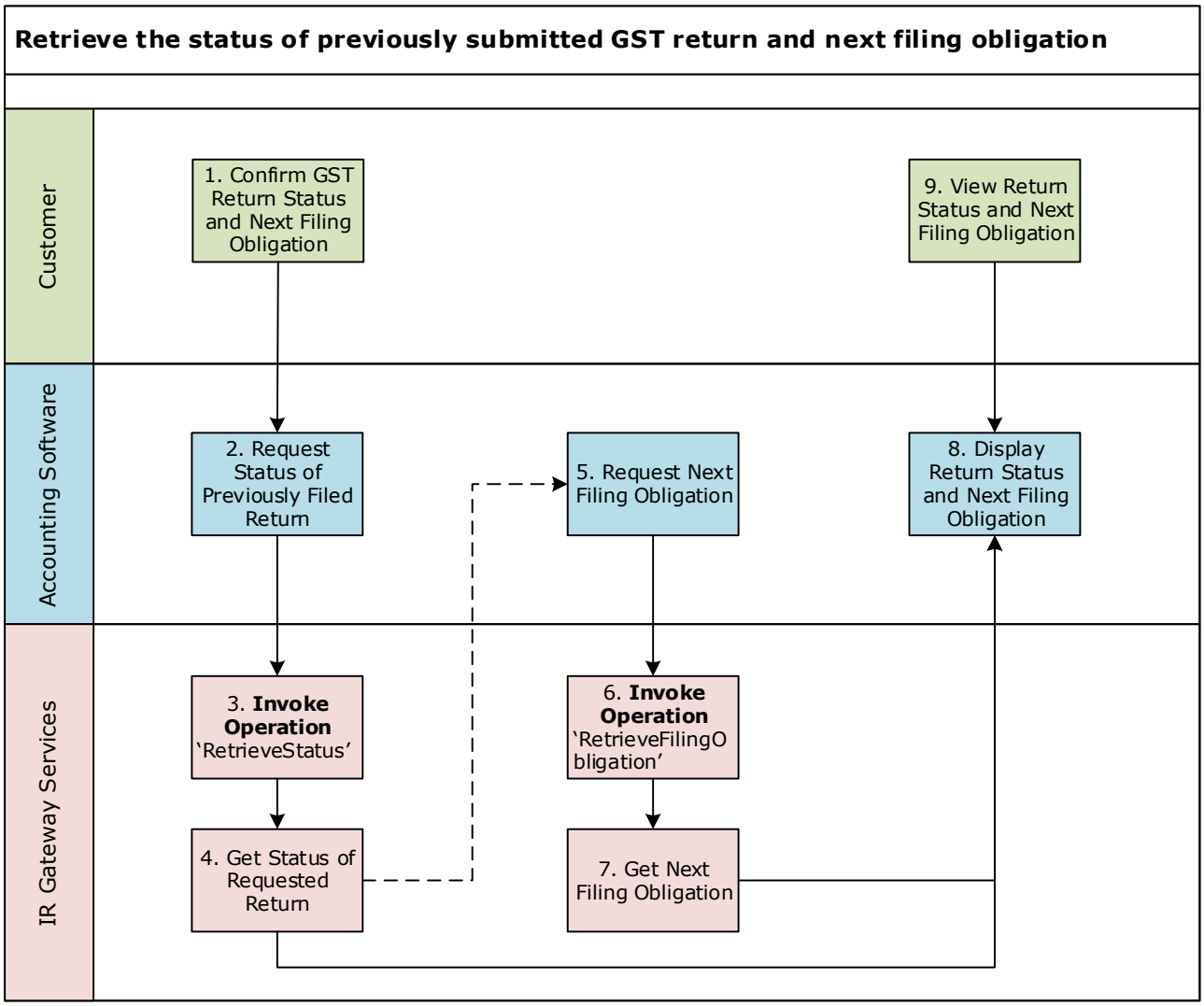
--- Dotted line is a suggest way to cascade operations.

Use case: Submit a new GST return	
Primary actor	• User
Secondary actors	• Accounting software • Gateway Return Service
Description	• The goal of the user is to successfully submit a new GST return
Pre-conditions	• User is logged-in to accounting software • User has used their IR online services credential to grant accounting software consent to access their information • User is enrolled for GST service • User has an active GST account • In cases where user is a tax agent or an intermediary, must have a delegated access from the customer
Post-conditions	• User successfully submits a new GST return in accounting software

Use case: Submit a new GST return	
Constraints	• Submitting the GST return must be prepared and submitted through the accounting software • At the time of any service request the accounting software must hold a valid access token for the user
Use case scenarios	
1. Normal flow	1.1 User requests to submit a new GST return 1.2 Accounting software prepares the return 1.3 Return service 'Prepop' operation is invoked. 1.4 Return service retrieves the return data and provides it to accounting software 1.5 Accounting software displays prepopulated return data 1.6 User views the prepopulated return data in accounting software 1.7 User completes and submits a new GST return 1.8 Accounting software receives a request to file the return 1.9 Return service 'File' operation is invoked 1.10 Return service validates the type of return – new, duplicate or amendment 1.11 For new return, Return service processes the return and returns a success response to accounting software (for amended or duplicate return please refer exception flows 2 and 3 below) 1.12 Accounting software displays the success message to user 1.13 User views a confirmation message that GST return has been filed successfully 1.14 Use case ends.
2. Exception flow: Return is a duplicate	2.1 User attempts to submit a duplicate return 2.2 Return service returns an error response to accounting software (please refer section 5.1 'Response codes' in the Return service build pack) 2.3 Accounting software displays the error message 2.4 User views the error message with the intent that duplicate return filing is not allowed
3. Exception flow: Return is an amendment	Please follow Use case 3.4.
4. Exception flow: User is not enrolled for GST return	4.1 Return Service validates user's enrolment to use GST service and fails to validate 4.2 Return service returns an error response to accounting software (please refer section 5.1 'Response codes' in the Return service build pack) 4.3 Accounting software displays the error message that user is not enrolled to use GST service 4.4 User views the error message

Use case: Submit a new GST return		
	4.5	Use case ends.
5. Exception: User is not authorised to use service	5.1	The user is valid, however doesn't have the correct permissions to use this service.
	5.2	Return service fails to authorise the user and returns an error response to the accounting software (please refer section 5.1 'Response codes' in the Return service build pack)
	5.3	Accounting software displays the error message
	5.4	User views the error message
	5.5	Use case ends.
6. Exception: Authentication token is expired	6.1	Identity and Access services validate and find authentication token expired (please refer section 2 in the 'Identity and Access Services' build pack)
	6.2	Identity and Access services validate credentials and generate new token
	6.3	Identity and Access services records new token generation request
	6.4	Use case ends.

3.2 Retrieve the status of previously-submitted GST return and next filing obligation



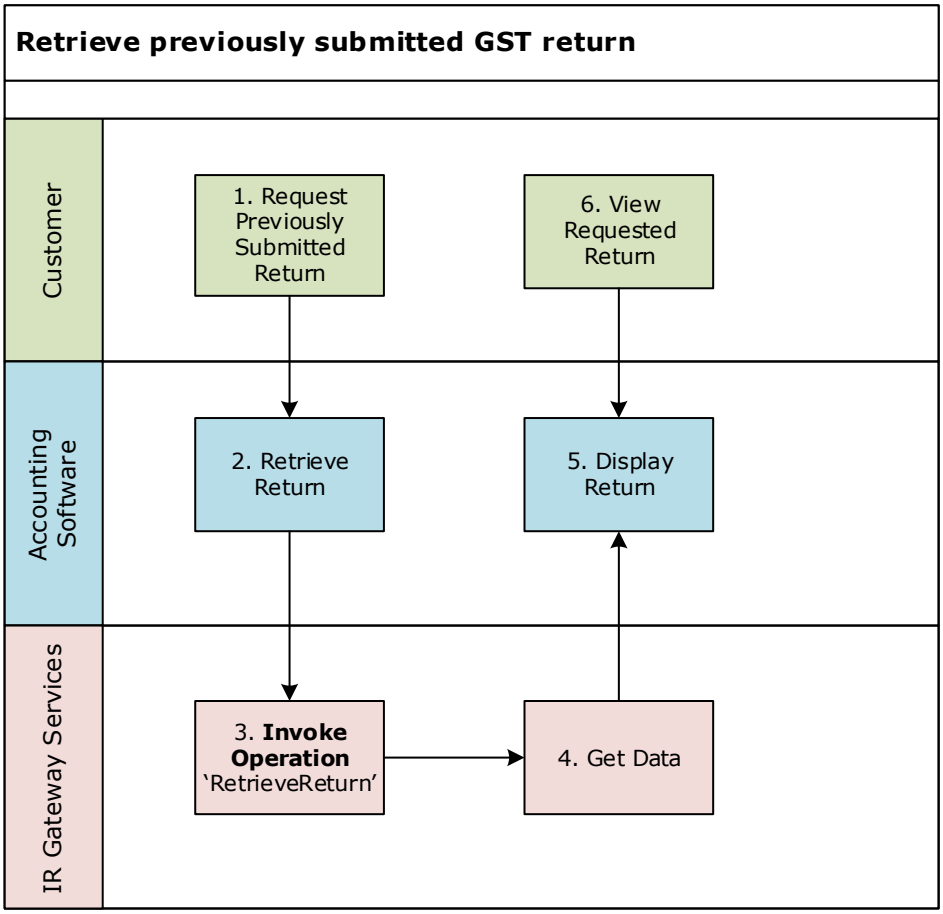
--- Dotted line is a suggest way to cascade operations.

Use case: Retrieve the status of previously-submitted GST return and next filing obligation	
Primary actor	• User
Secondary actors	• Accounting software • Gateway Return Service
Description	• The goal of the user is to successfully retrieve the status of previously-submitted GST return and next filing obligation
Pre-conditions	• User is logged-in to accounting software • User has used their IR online services credential to grant accounting software consent to access their information • User is enrolled for GST service • User has an active GST account • In cases where the user is a tax agent or an intermediary,

Use case: Retrieve the status of previously-submitted GST return and next filing obligation	
	must have a delegated access from the customer • User has submitted a GST return in the past
Post-conditions	• User successfully views the status of previously-submitted GST return and next filing obligation (return due date)
Constraints	• At the time of any service request the accounting software must hold a valid access token for the user
Use case scenarios	
1. Normal flow	1.1 User requests the status of previously-submitted GST return and the next filing obligation. 1.2 Accounting software receives a request to retrieve the status of previously-filed GST return 1.3 Return service '*RetrieveStatus*' operation is invoked 1.4 Return service retrieves the return status and provides it to accounting software 1.5 Accounting software receives a request to retrieve the next filing obligation 1.6 Return service '*RetrieveFilingObligation*' operation is invoked 1.7 Return service retrieves the next filing obligation and provides it to accounting software 1.8 Accounting software displays the requested data 1.9 User views the status of previously-submitted GST return and the next filing obligation 1.10 Use case ends.
2. Exception flow: Invalid selection of GST return	2.1 The user attempts to retrieve the status of the a GST return which does not exist 2.2 Accounting software generates a request 2.3 Return service '*RetrieveStatus*' operation is invoked 2.4 Return service fails to retrieve the status of identified GST return and returns an error response to accounting software (please refer section 5.1 'Response codes' in the Return service build pack) 2.5 User views the error message 2.6 Use case ends.
3. Exception flow: User is not enrolled for GST return	3.1 Return service validates user's enrolment to use GST service and fails to validate 3.2 Return service returns an error response to accounting software (Please see section 5.1 Response codes in Build Pack Return Service) 3.3 Accounting software displays the error message that user is not enrolled to use GST service 3.4 User views the error message 3.5 Use case ends.
4. Exception: Authentication token	4.1 Identity and Access services validate and find authentication token expired due to inactivity (please

Use case: Retrieve the status of previously-submitted GST return and next filing obligation	
is expired	refer section 2 in the 'Identity and Access Services' build pack) 4.2 Identity and Access services validate credentials and generate new token 4.3 Identity and Access services record new token generation request 4.4 Use case ends.
5. Exception: User is not authorised to use Service	5.1 The user is valid, however doesn't have the correct permissions to use this service 5.2 Return service fails to retrieve the status of the requested GST return and returns an error response to the accounting software (please see section 5.1 'Response codes' in the Return service build pack) 5.3 Accounting software displays the error message 5.4 User views the error message 5.5 Use case ends.

3.3 Retrieve previously-submitted GST return

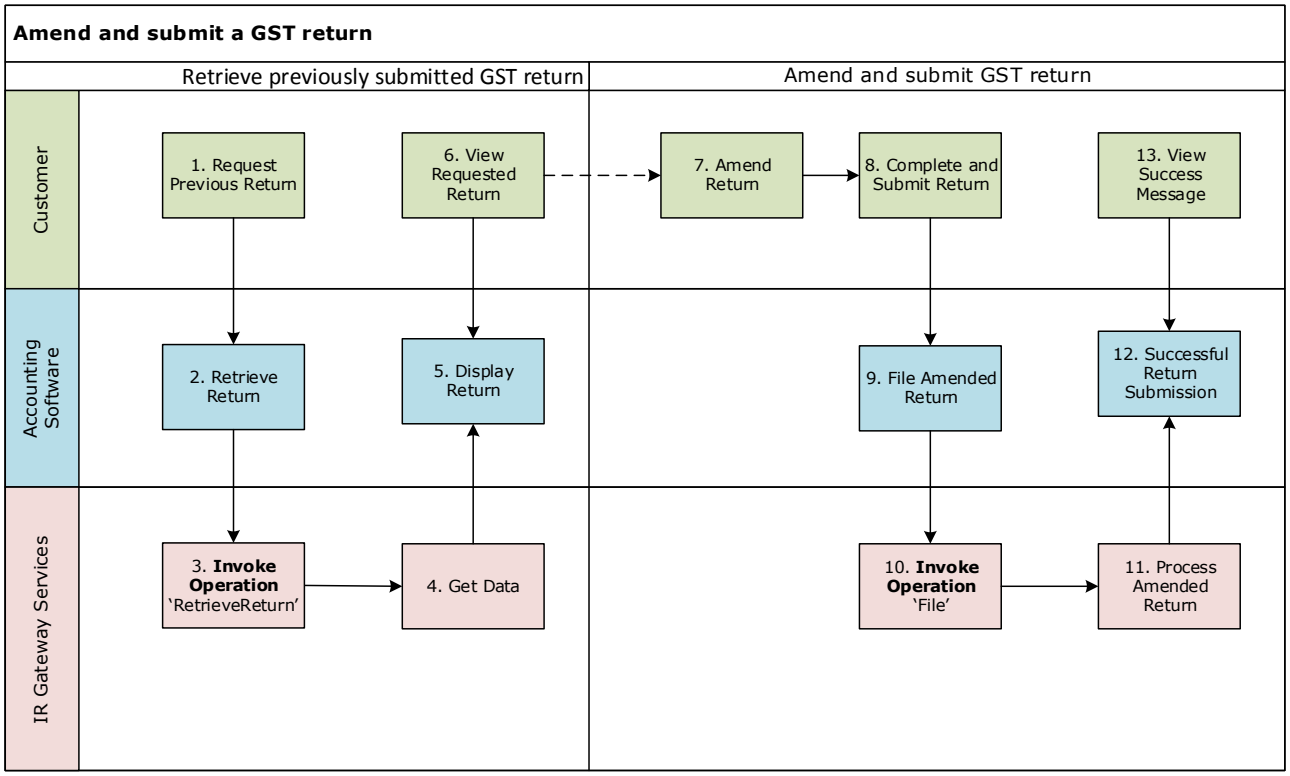


Use case: Retrieve previously-submitted GST Return	
Primary actor	• User
Secondary actors	• Accounting software • Gateway Return Service
Description	• The goal of the user is to retrieve a previously-submitted GST return
Pre-conditions	• User is logged-in to accounting software • User has used their IR online services credential to grant accounting software consent to access their information • User is enrolled for GST service • User has an active GST account • User has submitted a GST return in the past • In cases where the user is a tax agent or an intermediary, must have a delegated access from the customer
Post-conditions	• User successfully retrieves a previously-submitted GST return

Use case: Retrieve previously-submitted GST Return	
Constraints	• Retrieving a previously-submitted GST return must be through the accounting software. • At the time of any service request the accounting software must hold a valid access token for the user
Use case scenarios	
1. Normal Flow	1.1 User identifies a previously-submitted GST return to retrieve 1.2 Accounting software receives the request to retrieve the identified GST return 1.3 Return service '*RetrieveReturn*' operation is invoked 1.4 Return service retrieves the GST return data and returns it to accounting software 1.5 Accounting software displays the requested data 1.6 User views the retrieved GST return 1.7 Use case ends.
2. Exception flow: Invalid selection of GST return	2.1 The user attempts to retrieve the status of a GST return which does not exist 2.2 Accounting software generates a request 2.3 Return service '*RetrieveStatus*' operation is invoked 2.4 Return service fails to retrieve the identified GST return and returns an error response to accounting software (please see section 5.1 'Response codes' in the Return service build pack). 2.5 User views the error message 2.6 Use case ends.
3. Exception flow: User is not enrolled for GST return	3.1 Return service validates user's enrolment to use GST service and fails to validate 3.2 Return service returns an error response to accounting software (Please see section 5.1 Response codes in Build Pack Return Service) 3.3 Accounting software displays the error message that user is not enrolled to use GST service 3.4 User views the error message 3.5 Use case ends.
4. Exception: Authentication token is expired	4.1 Identity and Access services validate and find authentication token expired (please refer section 2 in the 'Identity and Access Services' build pack) 4.2 Identity and Access services validate

Use case: Retrieve previously-submitted GST Return	
	credentials and generate new token 4.3 Identity and Access services record new token generation request 4.4 Use case ends.
5. Exception: User is not authorised to use Service	5.1 The user is valid, however doesn't have the correct permissions to use this service 5.2 Return services fails to authorise the user and returns an error response to the accounting software (please refer section 5.1 'Response codes' in Return Service Build Pack) 5.3 Accounting software displays the error message 5.4 User views the error message 5.5 Use case ends.

3.4 Amend and submit a GST return



--- Dotted line is a suggest way to cascade operations.

Use case: Amend and submit a GST return	
Primary actor	• User
Secondary actors	• Accounting software • Gateway Return Service
Description	• The goal of the user is to amend and submit a GST return
Pre-conditions	• User is logged-in to accounting software • User has used their IR online services credential to grant accounting software consent to access their information • User is enrolled for GST service • User has an active GST account • User has submitted a GST return in the past • In cases where user is a tax agent or an intermediary, must have a delegated access from the customer
Post-conditions	• User retrieves a previously-submitted GST return, amends and successfully submits the return
Constraints	• Any return amendment and submission must be through the accounting software • At the time of any service request the accounting software must hold a valid access token for the user
Use case scenarios	

Use case: Amend and submit a GST return		
1. Normal flow	1.1	User identifies a previously-submitted GST return to amend
	1.2	Accounting software receives a request to retrieve the identified return
	1.3	Return service '*RetrieveReturn*' operation is invoked
	1.4	Return service retrieves the data and sends it to accounting software
	1.5	Accounting software displays the identified return data
	1.6	User views the identified GST return
	1.7	User amends the GST return
	1.8	User completes and submits the amended GST return
	1.9	Accounting software receives a request to file the amended GST return
	1.10	Return service 'File' operation is invoked
	1.11	Return service processes the return and sends success response to accounting software
	1.12	Accounting software displays the success message to user
	1.13	User views a confirmation message that GST return has been filed successfully
	1.14	Use case ends.
2. Exception flow: User is not enrolled for GST return	2.1	Return service validates user's enrolment to use GST service and fails to validate.
	2.2	Return service returns an error response to accounting software (please refer section 5.1 'Response codes' in the Return service build pack)
	2.3	Accounting software displays the error message that user is not enrolled to use GST service
	2.4	User views the error message
	2.5	Use case ends.
3. Exception: User is not authorised to use Service	3.1	The user is valid, however doesn't have the correct permissions to use this service
	3.2	Return service fails to retrieve the status of the requested GST return and returns an error response to the accounting software (please see section 5.1 'Response codes' in the Return service build pack)
	3.3	Accounting software displays the error message
	3.4	User views the error message
	3.5	Use case ends.
4. Exception: Authentication token is expired	4.1	Identity and Access service validates and finds authentication token expired due to inactivity (please refer section 2 in the 'Identity and Access Services' build pack)
	4.2	Identity and Access services validate credentials and

Use case: Amend and submit a GST return	
	generate new token 4.3 Identity and Access services record new token generation request 4.4 Use case ends.
5. Exception flow: Invalid selection of GST return	5.1 The user attempts to retrieve the status of the a GST return which does not exist 5.2 Accounting software generates a request to invoke the Return service '*RetrieveStatus*' operation 5.3 Return service fails to retrieve the status of the requested GST return and returns an error response to the accounting software (please see section 5.1 'Response codes' in the Return service build pack) 5.4 User views the error message 5.5 Use case ends.

4 Testing

4.1 Prerequisites

The Account Management team will ensure the following prerequisites are met by service providers:

- Test dates scheduled with Inland Revenue's Account Management team
- Environments will be booked for testing
- Test usernames and data received from Inland Revenue
- Connectivity test to end point achieved
- Relevant information exchanged, for example security certificates, whitelisting IP addresses.

4.2 Data management

Data provision	Test data will be provisioned into Inland Revenue systems to enable partnership testing for service providers. An exclusive data set will be provided for service providers to test.
Data reset	Data will be refreshed at the request of the service providers and provided by Inland Revenue at an agreed time.

Table 3: Data management

Inland Revenue is obliged to maintain the secrecy of any taxpayer-related information. This includes information shared between Inland Revenue and business partners during system testing.

All data used in a Test or Quality environment should be treated as if it were Production quality, with all appropriate controls in place to ensure:

- The environment is controlled and no unauthorised individual can access the testing or staged environments
- Processes are in place to ensure that source copies of data are deleted once testing is completed
- The data used for testing is isolated to prevent accidental use
- Controls are in place to prevent contamination or accidental release to other environments.

4.3 Test execution

Test execution process	• Service providers will execute test scenarios as identified in section 2.3.2 with test data that will be provided by Inland Revenue. • Test results will be documented for each of these scenarios and compared to the expected result associated with that test. • In the event of issues, service providers can follow the issue management process.

Issue management	• Inland Revenue will execute an automated suite of tests daily to ensure the environment is available and functioning to support all external testing by service providers. Disruptions in the service will be notified to service providers testing in this window by the Account Management team.
	  ○ Service providers are responsible for triaging all identified issues to establish if the root cause resides in the system calling the IR service. Any issue that requires resolution and retest that impacts the agreed test schedule will be notified to IR Account Management.
	  ○ Issues that are not manifested in the service provider's systems will be notified to IR to triage the issue. IR will initiate the automated test suite on demand to isolate and resolve issues.

Table 4: Test execution approach

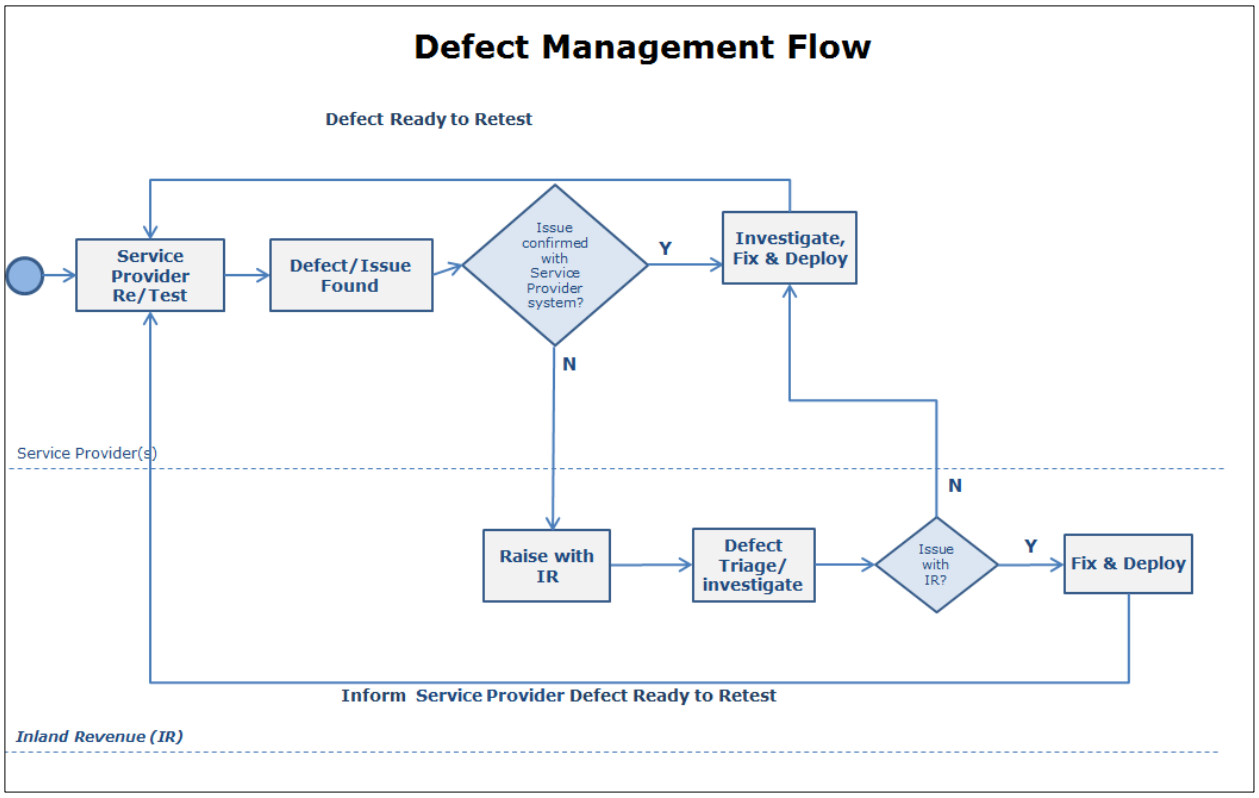


Figure 3: Defect management flow

4.4 Test exit report

Service providers are required to provide evidence of the following to Inland Revenue:

- All tests have been executed with associated evidence
- Any tests that have not been executed and rationale
- All outstanding defects or issues in executing the tests.

5 Gateway Services Production support

5.1 Service hours

These are Internet-facing services and are generally available 24 hours a day, seven days a week, other than approved scheduled changes—these can normally be accommodated without taking down the system.

In the unlikely event of an unscheduled outage, the IR Relationship Manager will deal with this on a case-by-case basis.

5.2 Service provider support

All support requests are to be directed to the following email address:

SoftwareDevelopersLiaisonUnit@ird.govt.nz

These requests will be picked up by the Relationship Manager to ensure visibility of the support query and that the query is directed at the appropriate support team.

The Relationship Manager will be in constant contact regarding the status of the request.

If it is a major incident, the Relationship Manager should be contacted directly.

6 Appendix A—Build pack references

The following Gateway Services build packs complement this one.

6.1 Return service build pack

The Return service build pack describes the operations provided under the Return service, which is one part of the Gateway Services suite. These services are used to file a return, pre-population of a return, status of a return and retrieve a previous return.

This GST onboarding document was written using information from version 0.8 of the Return service build pack.

6.2 Identity and Access services build pack

The Identity and Access (IAS) services build pack describes the operations provided under Identity and Access services, which is another part of the Gateway Services suite. These services are used to authenticate access.

This GST onboarding document was written using information from version 1.5 of the Identity and Access Services build pack.

7 Appendix B—Glossary

Acronym/term	Definition
Authentication	The process that verifies the identity of the party attempting to access IR.
Authorisation	The process of determining whether a party is entitled to perform the function or access a resource.
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 IR is providing. The Return Service is one of the services of Gateway Services.
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.
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.
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—IR's new core tax processing application. It is an implementation of the GenTax product from FAST Enterprises.
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.
XIAMS	External IAMS—an instance of IAMS that authenticates and authorises access by external parties, i.e. 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.