

# Wedgetail API



## Contents

<b>1. General Information</b>	<b>2</b>
1.1 Introduction	2
1.2 Underlying protocol stack	2
1.3 Database structure	2
1.4 Security & Authorisation	2
1.5 Patient Identification	3
1.6 Error Messages	3
<b>2. The Patient Resource</b>	<b>4</b>
2.1. Creating a New Patient	4
2. 2 Searching for a Patient	6
<b>3. Mapping and the Localmaps resource</b>	<b>7</b>
3.1 Creating a mapping	7
3.2 Flnding a mapping	7
<b>4. The Narrative Resource</b>	<b>8</b>
<b>5 Results Service</b>	<b>9</b>
5.1. Upload a request set and ticket identifier to wedgetail.	9
5.2 Determine which request sets have been registered with wedgetail (and therefore have an associated ticket)	10
5.3 Upload a set of actions and results	10
5.4 Statistics for results	11
<b>6 Messaging Service</b>	<b>13</b>
6.1 Posting a Message	13
6.2 Count of Inbox	13
6.3 Retrieve Inbox	13

# 1. General Information

## 1.1 Introduction

This document describes a programmatic interface for the wedgetail system, which allows local clients and third-party systems to exchange messages and query the server.

It is based on the REST principles (Representational State Transfer )

More information on REST is at

[http://en.wikipedia.org/wiki/Representational\\_State\\_Transfer](http://en.wikipedia.org/wiki/Representational_State_Transfer)

Libraries are generally available to allow RESTful services for most programming languages, including DOT NET, Silverlight, php and Ruby.

## 1.2 Underlying protocol stack

Connections are made to the server using HTTPS. It is assumed the client knows the DNS address of the server. The port is assumed to be 443 unless specifically arranged otherwise.

For each API function this standard specifies the absolute path within the server, thus forming a URI with the server name.

Where the path provided contains "XXX" or "YYY" these should be substituted with specific data elements as defined for that function.

The standard also specifies the HTTP verb to use (GET or POST) and the MIME-type of the documents that are sent and received.

For most functions the document to be sent is in the type "application/xml", and similarly application/xml is returned by wedgetail

If the field is defined as "a date", it will be in the form yyyy-mm-dd.

In this document, the Wedgetail server is assumed to be at <http://wedgetail.org.au>.

There is a demo wedgetail server suitable for testing purposes at <http://demo.wedgetail.org.au>

Username guest, Password guest

## 1.3 Database structure

Logically the wedgetail database is a large flat collection of documents. Documents are of varying MIME types and are also tagged by creation date, associated patient, user who uploaded them, and logical type. Documents are immutable once created.

Documents may exist on various servers, synchronisation functions allow all the servers to maintain a single list of patients and a single index of documents, the documents themselves exist on only one server on the network.

Patient records are mutable, in the sense that a new record with the same patient ID can be created and made available for synchronisation, this replaces the old. The newest patient record is always the current one.

However servers can still use old records for searching, such as for maiden names.

"logical type" refers to their \*clinical\* role and is independent of their actual format.

Document types are [listed below](#)

## 1.4 Security & Authorisation

Cryptographic security is provided by the SSL/TLS layer of HTTPS.

Clients authenticate using HTTP Basic authentication [5] for all connections.

### 1.4.1 Users

Clients should be aware that access to patient files, including appearance in search results, is dependent upon the server's authorisation model and the access granted to that specific user. Intentionally, clients will not be able to distinguish between when a patient is non-existent, and when they do not have sufficient access for the operation in question.

### 1.4.2 Patients

## Wedgetail API

It is also possible to authenticate as a patient. The username is the wedgetail patient ID and the password is the patient password. Patient's access privileges are generally limited to documents about them and updating their own demographic details.

## 1.5 Patient Identification

### 1.5.1 Wedgetail Numbers

Patients are uniquely identified by the Wedgetail number, which is assigned by the system on patient creation. After patient creation, clinical information cannot be added to the record until a consent form is received by the Wedgetail Administrator, and the uniqueness of that patient record has been established.

The IHI (Individual Health Identifier) will be mapped to (or replace) the Wedgetail number when it is implemented.

### 1.5.2 Local IDs

Clients connecting to the Wedgetail server can identify patients through the ID used by the local system, once these have been mapped to the patients wedgetail number.

The mapping is between the Wedgetail Number, LocalID, and the User's team.

Therefore clients connecting to Wedgetail need to ensure that the LocalIDs used are unique within their local system only.

## 1.6 Error Messages

The Wedgetail API can return a number of error messages.

These are listed in the appropriate sections below.

Note that malformed XML schema posted in the request will return a generic Internal Server error.

## 2.The Patient Resource

### 2.1. Creating a New Patient

**Authentication** via Basic HTTP Authentication

Note that new patient records will not be accessible (will remain 'unhatched') till their consent form is received by the Administrator and details are confirmed (hatched)

POST to <https://wedgetail.org.au/patients>

#### XML format

```
<patient>
  * <family_name>Potter</family_name>
  * <given_names>Harry</given_names>
  <known_as></known_as>
  <address_line>Gryffindor House</address_line>
  <town>Hogwarts</town>
  <state>NSW</state>
  <postcode>2477</postcode>
  <sex>1</sex> (1=Male 2=Female)
  * <dob>1994-11-01</dob>
  <medicare></medicare>
  <dva></dva>
  <password>passwd</password>
  **<localID>12345</localID>
</patient>
```

\* required fields

\*\* a local ID, if supplied, will be mapped to the new patient's wedgetail number.

Once mapped, the localID can be used instead of the wedgetail number for all XML calls.

#### RETURNS

```
<?xml version="1.0" encoding="UTF-8"?>

<patients>
  <message>Patient Created</message>
  <patient>
    <family_name>Potter</family_name>
    <given_names>Harry</given_names>
    <dob>1994-11-01</dob>
    <wedgetail>HDvjksf</wedgetail>
    <medicare></medicare>
    <address_line>Gryffindor House</address_line>
    <town>Hogwarts</town>
  </patient>
</patients>
```

### ERRORS

#### **Error 01: Patient with that localID already created**

If the localID has already been mapped to a different patient, Error 01 is generated.

The XML details of the patient that had previously been mapped is also returned

Error 01: Patient with that localID already created.

```
<?xml version="1.0" encoding="UTF-8"?>
<patients>
  <message>Error 01: Patient with that localID already created</message>
  <patient>
    <family_name>Potter</family_name>
    <given_names>Harry</given_names>
    <dob>1994-02-09</dob>
    <wedgetail>HDvjksf</wedgetail>
    <medicare></medicare>
    <address_line>Gryffindor House</address_line>
    <town>Hogwarts</town>
  </patient>
</patients>
```

#### **Error 02: Patient possibly already created**

If the patient details (Family Name, DOB) appear to match one or more patients already registered with Wedgetail, "Error 02: Patient possibly already created" is returned. The XML contains the list of possible matching patients already created.

```
<?xml version="1.0" encoding="UTF-8"?>
<patients>
  <message>Error 02: Patient possibly already created</message>
  <patient>
    <family_name>Potter</family_name>
    <given_names>Harold</given_names>
    <dob>1994-02-09</dob>
    <wedgetail>HD8p2rq</wedgetail>
    <medicare></medicare>
    <address_line>Gryffindor House</address_line>
    <town>Hogwarts</town>
  </patient>
  <patient>
    <family_name>Potter</family_name>
    <given_names>Ronald</given_names>
    <dob>1994-02-09</dob>
    <wedgetail>HDsafve</wedgetail>
    <medicare></medicare>
    <address_line>Diadem Alley</address_line>
    <town>London</town>
  </patient>
</patients>
```

If Error 2 is generated, clients should ask the user if one of the returned patients matches the patient they are trying to create.

If so, you can use the 'localmap' service to map a localID to the patient wedgetail number. (see below)

If not, and the patient is unique, you can repost the command, but include in the XML of patient attributes the attribute

**<force>true</force>**

## Wedgetail API

The administrator will ultimately confirm the uniqueness of the new patient.

### CURL example

```
curl -H 'Accept: application/xml' --user 'username:password' -H 'Content-type:application/xml' -k https://wedgetail.org.au/patients -d "<patient><family_name>Lembke</family_name><given_names>Will</given_names><known_as>Will Will</known_as><address_line>81 Dees Lane</address_line><town>Uralba</town><state>NSW</state><postcode>2477</postcode><sex>1</sex><dob>1999-02-09</dob><medicare></medicare><dva></dva><password>oddie</password></patient>" -X POST
```

## 2. 2 Searching for a Patient

GET to <https://wedgetail.org.au/patients.xml>

**Authentication** via Basic HTTP Authentication

Optional Search parameters are family\_name, given\_names, dob (format:1999-09-04)

Note that only details about patients that the user is authorised to see will be returned.

egs

[https://username:password@wedgetail.org.au/patients.xml?family\\_name=weasley&dob=1994-03-31](https://username:password@wedgetail.org.au/patients.xml?family_name=weasley&dob=1994-03-31)

[https://username:password@wedgetail.org.au/patients.xml?family\\_name=weasley](https://username:password@wedgetail.org.au/patients.xml?family_name=weasley)

returns

```
<?xml version="1.0" encoding="UTF-8"?>
<patients>
  <patient>
    <family_name>Weasley</family_name>
    <given_names>Ron</given_names>
    <dob>1994-03-31</dob>
    <wedgetail>Hdemosk56y</wedgetail>
  </patient>
  <patient>
    <family_name>Weasley</family_name>
    <given_names>Ginny</given_names>
    <dob>1996-03-02</dob>
    <wedgetail>Hdemo75wvc</wedgetail>
  </patient>
</patients>
```

### Curl Example

```
curl -H 'Accept: application/xml' --user 'username:password' -H 'Content-type:application/xml' -k https://wedgetail.org.au/patients.xml -d "<family_name>Weasley</family_name>" -X GET
```

## 3. Mapping and the Localmaps resource

Users can 'map' local database IDs to wedgetail numbers, as discussed in section 1.5.2

### 3.1 Creating a mapping

To create a map between a given localID and a known wedgetail number, POST to the localmaps resource.

POST to <https://wedgetail.org.au/localmaps>

#### XML Schema

```
<localmap>
  <localID>27</localID>
  <wedgetail>HDaaaab</wedgetail>
</localmap>
```

#### Response

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<localmap>
  <message>Localmap created</message>
  <localID>30</localID>
  <wedgetail>HDaaaad</wedgetail>
</localmap>
```

#### Errors

##### 1. Error 1: That wedgetail number is already mapped to another localID

```
<?xml version="1.0" encoding="UTF-8"?>
<localmap>
  <message>Error 1: That wedgetail number is already mapped to another localID</message>
  <localID>29</localID>
  <wedgetail>HDaaaaa</wedgetail>
</localmap>
```

##### 2. Error 2: That localID is already mapped to another wedgetail number

```
<?xml version="1.0" encoding="UTF-8"?>
<localmap>
  <message>Error 2: That localID is already mapped to another wedgetail number</message>
  <localID>27</localID>
  <wedgetail>HDaaaaa</wedgetail>
</localmap>
```

### 3.2 Finding a mapping

Authentication Required

GET to <https://wedgetail.org.au/localmaps.xml>

eg <https://wedgetail.org.au/localmaps.xml?localID=30>

#### Returns

```
<?xml version="1.0" encoding="UTF-8"?>
<mapResult>
  <message>Found</message>
  <localmap>
    <localID>30</localID>
    <wedgetail>HDaaaad</wedgetail>
  </localmap>
</mapResult>
```

## 4. The Narrative Resource

**Authentication** via Basic HTTP Authentication

Narratives are linked to patients via the patient's unique wedgetail number.

POST to <https://wedgetail.org.au/narratives.xml>

### XML Format

```
<narrative>
  *<wedgetail>Hdemoc4z7v</wedgetail>
  <narrative_type_id>1 </narrative_type_id> (see below for Type Index)
  <title>Health Summary</title>
  <content>This is where the content goes as text or rtf</content>
  <content_type>text/plain or text/rtf</content_type>
  <narrative_date>2009-04-05</narrative_date>
</narrative>
```

\* NB <localID>XXXX</localID> can be used instead of <wedgetail>XXX</wedgetail> if a mapping has been established.

Our current Narrative Types are :

- 1 Health Summary
- 2 Medication Chart
- 3 Discharge Summary
- 4 Encounter
- 5 Allergies
- 6 Scratchpad
- 7 Results
- 8 Letter
- 9 Immunisations
- 10 Form
- 11 Prescription
- 12 Diagnosis
- 13 Care Plan

### Return

```
<?xml version="1.0" encoding="UTF-8"?>

<narratives>
  <message>Narrative created</message>
  <narrative>
    <wedgetail>HDaaaad</wedgetail>
    <narrative_type_id>1</narrative_type_id>
    <title>Health Summary</title>
    <content>This is where the content goes as text or rtf</content>
    <content_type>text/plain</content_type>
    <narrative_date>2009-04-05</narrative_date>
  </narrative>
</narratives>
```

### ERROR Messages

The <message> field will contain an error message if the wedgetail number or localID do not map to a patient.



## 5 Results Service

The steps in the result service are

a) At the time of generating a pathology request for which you would like the subsequent result uploaded to Wedgetail, send an identifier for that request (request\_set) to wedgetail, and receive an identifying 'ticket' in return.

The request\_set identifier should be unique to that result and to that practice.

The ticket is a string that the patient will use to later retrieve their result, and is given to the patient.

b) When a new batch of results have subsequently been received and processed, check with Wedgetail to see which request sets have been registered at the time of requesting and therefore should be uploaded.

c) upload those results and actions

d) the patient enters their identifier on the server to view relevant uploaded results

NOTE: Deidentification of all information sent to Wedgetail is the responsibility of the client program that is using the service.

DO NOT send identifying features with your result uploads.

DO NOT use this service if this is unacceptable or not possible for you.

### 5.1. Upload a request set and ticket identifier to wedgetail.

POST to [http://wedgetail.org.au/result\\_tickets](http://wedgetail.org.au/result_tickets)

No authorisation required

At the time a pathology request is generated by the client program, the request identifier is 'registered' with wedgetail.

A ticket identifier (used by the patient) can be nominated or generated automatically by wedgetail.

An error message is returned if you allocate a ticket that is used by a different request\_set.

XML

```
<result_ticket>
  <request_set>666666</request_set>
  <ticket>010102</ticket> (optional)
</result_ticket>
```

If the ticket identifier is not included, Wedgetail will return the correct ticket identifier, if the request set has already been registered, or will generate and return a new unique ticket identifier if not already registered.

The full result\_ticket with ticket identifier is returned.

```
<?xml version="1.0" encoding="UTF-8"?>
<result_ticket>
  <request_set>666666</request_set>
  <ticket>010102</ticket>
</result_ticket>
```

### Curl Example

```
curl -H 'Accept: application/xml' -H 'Content-type:application/xml' -k http://localhost:3000/result\_tickets -d
"<result_ticket><request_set>666666</request_set></result_ticket>" -X POST
```

## 5.2 Determine which request sets have been registered with wedgetail (and therefore have an associated ticket)

POST to [http://wedgetail.org.au/result\\_tickets/check](http://wedgetail.org.au/result_tickets/check)

No authorisation required

XML

```
<result_ticket_list>
  <request_set>213101</request_set>
  <request_set>666666</request_set>
</result_ticket_list>
```

Returns those request\_sets in the request list which have been previously registered with Wedgetail.

```
<?xml version="1.0" encoding="UTF-8"?>
<result_ticket_list>
  <request_set>666666</request_set>
</result_ticket_list>
```

Curl example

```
curl -H 'Accept: application/xml' -H 'Content-type:application/xml' -k http://wedgetail.org.au/result\_tickets/check -d
"<result_ticket_list><request_set>213101</request_set><request_set>666666</request_set></result_ticket_list>" -X POST
```

## 5.3 Upload a set of actions and results

### 5.3.1 Anonymously

POST To <http://wedgetail.org.au/actions>

No authorisation require, however if post to https:// and logged in, result will be recorded as part of the users stats.

XML

```
<action_list>
  <action>
    <request_set>iii</request_set>
    <name>FBC</name>
    <action_code>1</action_code>
    <comment>You can put as much text here, and it can be in plain text or rtf</comment>

    <identifier>3</identifier>
  </action>
  <action>
    <request_set>www</request_set>
    <action_code>1</action_code>
    <comment></comment>
    <identifier>3</identifier>
  </action>
</action_list>
```

Curl example

```
curl -H 'Accept: application/xml' -H 'Content-type:application/xml' -k http://wedgetail.org.au/actions -d
"<action_list><action><request_set>iii</request_set><name>FBC</name><action_code>1</action_code><comment>Get
found</comment><identifier>3</identifier></action><action><request_set>www</request_set><action_code>1</
action_code><comment>Get found</comment><identifier>3</identifier></action></action_list>" -X POST
```

### 5.3.2 Logged In

Actions can also be sent directly to a patient's record if the user logs in appropriately and the patient has a wedgetail record. The format is the same, except that either <wedgetail>xxxxxxx</wedgetail> or <localID>xxxxxxx</localID> must be included in the XML

eg

```
<action_list>
  <action>
    <action_code>1</action_code>
    <comment>This is where the result and message goes</comment>
    <wedgetail>H00003hsg</wedgetail>
  </action>
  <action>
    <action_code>2</action_code>
    <request_set>iii</request_set>
    <comment>This is where the result and message goes</comment>
    <wedgetail>H00003hsg</wedgetail>
  </action>
</action_list>
```

### 5.4 Statistics for results

1) Getting Stats for a particular user -

<https://wedgetail.org.au/stats.xml> GET

(requires username;password)

Returns stats for that user as follows

```
<?xml version="1.0" encoding="UTF-8"?>
<stats>
  <total>8</total>
  <this_week>0</this_week>
  <this_month>0</this_month>
  <viewed>0</viewed>
  <viewed_this_week>0</viewed_this_week>
  <viewed_this_month>0</viewed_this_month>
</stats>
```

2) Checking whether a result has been viewed

<https://wedgetail.org.au/actions/check.xml> POST

(does not require username;password)

XML in post (request\_sets that you want to know about)

```
<action_check_list>
<request_set>213107</request_set>
<request_set>666666</request_set>
</action_check_list>
```

Note - you can use wildcards (%) in the <request\_set> to allow searching for a particular patient or doctors results.

This depends on how the client chooses to construct its request\_set string

For example, DCP structure its request\_set string like this

4RHYHXRHFHV5-4RHYEHAHG-J3ZYHVE.

Each string has three components

The first part uniquely identifies a patient (across practices)

The middle part uniquely identifies a doctor(across practices)

The third part identifies a pathology request but not uniquely i.e needs to be combined with first or second

you can search for <request\_set>4RHYHXRHFHV5%</request\_set> to find all actions for a particular patient or

you can search for <request\_set>%4RHYEHAHG%</request\_set> to find all actions for a particular doctor or

you can search for <request\_set>4RHYHXRHFHV5-4RHYEHAHG-J3ZYHVE</request\_set> to find all actions for a particular request\_set

## Wedgetail API

If not found, returns

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
</results>
```

If found, returns XML as below (viewed=0 or 1)

```
<?xml version="1.0" encoding="UTF-8"?>
<results>
  <result>
    <request_set>666666</request_set>
    <identifier></identifier>
    <name>FBC</name>
    <test_date>2009-06-18</test_date>
    <viewed>1</viewed>
  </result>
  <result>
    <request_set>666666</request_set>
    <identifier></identifier>
    <name>MBA</name>
    <test_date>2009-06-18</test_date>
    <viewed>1</viewed>
  </result>
  <result>
    <request_set>666666</request_set>
    <identifier></identifier>
    <name>MSU</name>
    <test_date>2009-06-19</test_date>
    <viewed>0</viewed>
  </result>
</results>
```

Note that it may return more than one result for a particular request\_set as each request\_set may contain more than one test.

eg Request Set = { FBC,MBA,TFTs,MSU}

These individual tests within a request set can have their own 'identifier' which can be specified in the XML when the result is uploaded.

## 6 Messaging Service

Wedgetail users can send secure messages to each other (or to patients.)  
Users will receive an email address telling them they have a new message to view.

### 6.1 Posting a Message

Authentication required (Basic HTTP)

**POST** to <http://wedgetail.org.au/messages>

```
<message>
  <recipient_id>PD22sq7</recipient_id> => wedgetail number
  <subject>Test Message</subject>
  <content>Test message from REST</content>
  * <thread></thread> =>ID of message replied to (optional)
  * <re></re> => wedgetail number of patient if about a patient (optional)
  * <localID></localID> => can use localID if sending message to a patient, instead of <recipient_id> (optional)
  * <re_localID></re_localID> => can use localID instead of <re> (optional)
</message>
```

**Replies** will be STRING

Message was successfully created.

Error 1: No matching patient for re

Error 2: No map for specified re\_localID

Error 3: No matching recipient for recipient\_id

Error 4: No map for specified localID

### 6.2 Count of Inbox

Authentication required (Basic HTTP)

GET to <http://wedgetail.org.au/messages/count.xml>

Returns STRING

### 6.3 Retrieve Inbox

Authentication required (Basic HTTP)

GET to <http://wedgetail.org.au/messages.xml>

Returns XML array of messages

```
<?xml version="1.0" encoding="UTF-8"?>
<messages type="array">
  <message>
    <content>Hi</content>
    <created-at type="datetime">2009-11-11T06:01:50+11:00</created-at>
    <id type="integer">6</id>
    <re></re>
    <recipient-id>PDemov47gq</recipient-id>
    <sender-id>PDemov47gq</sender-id>
    <status type="integer">0</status>
    <subject>Test message</subject>
    <thread type="integer">6</thread>
  </message>
  <message>
    <content>Hi again</content>
    <created-at type="datetime">2009-11-10T20:01:08+11:00</created-at>
    <id type="integer">5</id>
    <re></re>
    <recipient-id>PDemov47gq</recipient-id>
    <sender-id>PDemov47gq</sender-id>
    <status type="integer">0</status>
    <subject>Test message</subject>
    <thread type="integer">5</thread>
  </message>
</messages>
```