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Client Details	**Amethyst Internal**
Date	**7th August 2019**
Project Details	**App Development for Communications**
Managed by	**Lisa Miles**

Date	Revision Details	Version	Initials
2.8.19	Initial spec	1.00	LM
5.8.19	Review by Tobias at Amethyst	1.1	TF
7.8.19	Review by Lisa	1.2	LM

1. Reasons for this project :-

Within Greentree we have something called CRM communications.

This enables users to enter details against an organisation and can be used in a number of different ways.

The process that we are looking to develop is to enable the creation of this form in an iphone and android app.

This client is going to be using the app when walking around their site as they see things that need attention. They have a lot of assets which are linked to organisations.

For example they come across say a window broken they need to record what is wrong and who it should be looking to get it sorted.

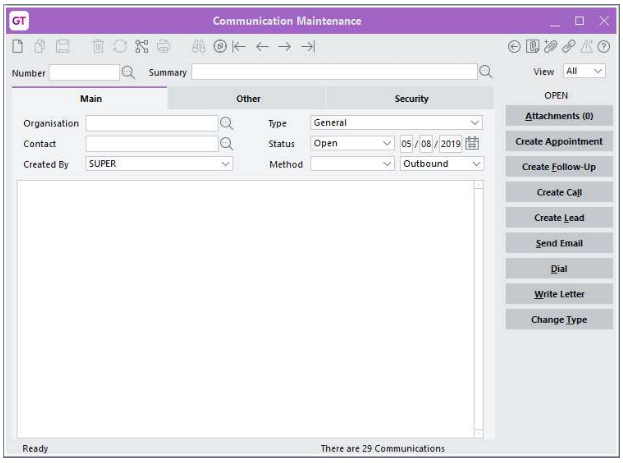
Currrently they write it down and then when back in the office they will enter the data directly into Greentree, which is not ideal.

So the app needs to capture the information needed to then send the data via the API directly into Greentree. The communication record in Greentree will then look as though it has been entered directly into Greentree.

This first project for this app will then lead on to a number of others – eg expenses, time recording etc etc. We are looking to develop a long term relationship with the app developer we choose.

2. How it works in Greentree

CRM communications are a record screen with three tabs – Main – Other and Security


Communication Maintenance

Number
Summary
View: All

Main | Other | Security

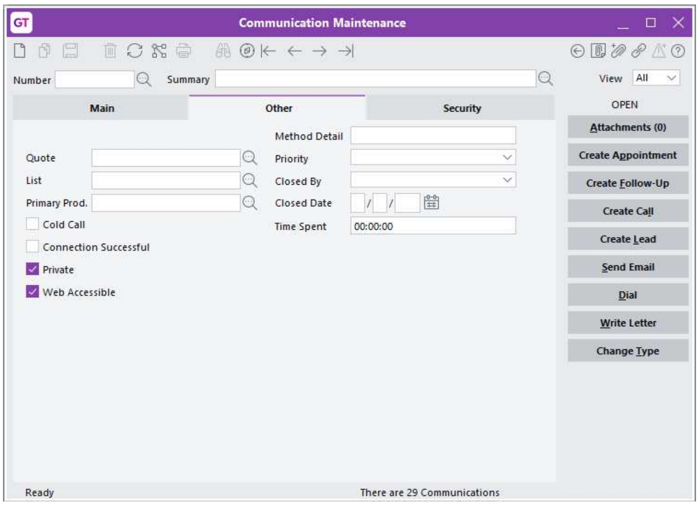
Organisation
Contact
Created By: SUPER
Type: General
Status: Open 05 / 08 / 2019
Method: Outbound

Ready
There are 29 Communications

If the communication were being entered directly into Greentree then the number would be automatically generated, the summary would be keyed in, the organisation chosen, the contact chosen (both from lists). Created by would be filled in automatically with the logged on user. Type is also selected from a list. Status should be open, the date is automatically entered as todays date. A selection of method is made (we can define these for you).

Finally the user the enters the details they want to record in the big box below.

They then tab onto the second screen – Other. There is nothing on here at the moment that needs to be entered from the app.


Communication Maintenance

Number
Summary
View: All

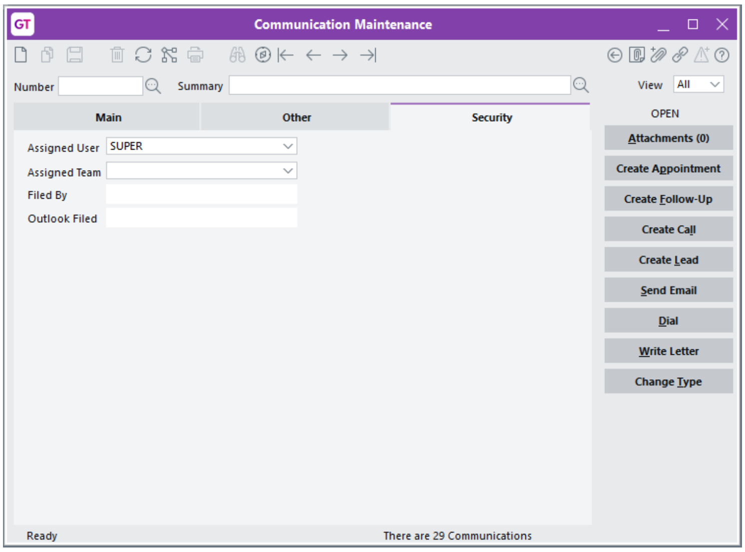
Main | Other | Security

Quote
List
Primary Prod.
□ Cold Call
□ Connection Successful
☑ Private
☑ Web Accessible

Method Detail
Priority
Closed By
Closed Date
Time Spent: 00:00:00

Ready
There are 29 Communications

The final tab – security holds the details of whom is to be assigned to this call. This could be by user and/or by team



Communication Maintenance

Number

Summary

View All

Main | Other | Security

Assigned User SUPER

Assigned Team

Filed By

Outlook Filed

OPEN

Ready

There are 29 Communications

3. Default fields

In Greentree there are several fields which are mandatory, these fields will also be mandatory when submitting through the API.

Number is a field that is automatically assigned by the system and will not need to be set when creating a communication, Summary can be defaulted from the organisation and the opened date but you can also define this value when creating or editing the document.

Organisation is selected from a list of organisations in Greentree, the type is defaulted when the screen loads as well as status, opened date and direction.

4. What do we want to achieve?

Simply we want to replicate the data collected in the CRM communications record.

We have ideas of how we want the app to look like, but the key thing initially is to prove that the data can be captured and uploaded via the API.

I will supply ideas on look and feel later.

5. How Does The API Work?

The Greentree API is a RESTful HTTP interface.

In a nutshell, this means that you can use descriptive URL's to access "things" in Greentree. The structure of the URL's is a vital part of the API and assists in its discoverability. The transport mechanism is HTTP which makes it accessible from almost any platform and technology. The standard HTTP verbs used by web servers are also used to determine what you want to do with the data (GET is used to read, POST is used to write, DELETE is used to delete). Based on this, the same URL can be used with different verbs to achieve different behaviour.

The Greentree API itself acts as a web server and services the queries against the database. There is no requirement for IIS or any other web server technology.

The basic URL structure of an API call is as follows:

Error! Hyperlink reference not valid.>

<server>	Server name or IP address	203.44.22.12 or greentree.site.com
<port>	Port that Greentree will listen on (default is 9000)	9000
<company>	Greentree company	01
<entity>	The type of object in Greentree you are referencing. This is usually the name of the Jade Class.	SOPackingSlip
<identifier>	The primary key to identify the object you are referencing. Optional.	The reference of a Packing Slip – eg 243333.01

The order of these parameters is important, they MUST be in this sequence.

An example of this call would be:

http://greentree.site.com:9000/01/SOPackingSlip/24333.01

- A GET request on this URL would return the details of the Pack Slip with a reference 24333.01.
- A POST request on this same URL would accept a packet of data to update Pack Slip with a reference 24333.01.
- A DELETE request on this URL would delete the Packing Slip with reference 24333.01

6. Parameters

Following the base URL, you can append various query parameters to influence the behaviour of the API call. Most of these parameters are specific to the particular request, however some of them are common amongst the various API calls. The query parameters are passed across with the URL and preceded by a "?" character, which separates the base URL from the parameters. Following this are key=value pairs, which can be separated by "&" if multiple query parameters are required.

A GET request with no <identifier> will result in a list of the particular entity being requested. GET requests like this are capped at 100 entities per request, but can be paged using the query parameters “page” and “pageSize”. In this case you can continue to increment “page” after each call, until the resulting packet returns less than “pageSize” entities.

An example of this which will return the first 20 Packing Slips in the Greentree Company 01 is:
http://greentree.site.com:9000/01/SOPackingSlip?page=1&pageSize=20

An example of not specifying page size which will return the first 100 Packing Slips in the Greentree company 01 is:
http://greentree.site.com:9000/01/SOPackingSlip?page=1

A POST request with no <identifier> will add a new <entity> to the Greentree Company. As a general rule as a client of the API you cannot specify the <identifier> for a newly created entity, as it is preferred to allow Greentree to allocate these. Note there are exceptions to this which will be documented with their entity.

7. CRM Communications Fields in the API

Not all these fields are needed – refer to mandatory field list when reviewing this.

- CommunicationNumber – This is a 12 character string but is normally populated with numbers e.g 1000 (just incremental number)
- Detail – is a maximum length string and can hold several thousand characters worth of information in it. (this is where the user will enter the details)
- EntryTimestamp – this is a timestamp set by the system in the format of date and time
- EntryUser – this is a 30 character string that is populated by the name of the user who entered the communication (need to consider how this is collected)
- IsColdCall – is a true/false Boolean
- IsConnectionSucessfull - is a true/false Boolean
- IsPrivate - is a true/false Boolean
- IsWebAccessible - is a true/false Boolean
- AssignedTeam – is the name of the team that is assigned to this communication (we would like the user of the app to be able to select this from a drop down list).
- AssignedUser - is the name of the user that is assigned to this communication (we would like the user of the app to be able to select this from a drop down list).
- Organisation – is the code of the organisation that is in Greentree
- Contact - is the code of the contact linked to the selected organisation that is in Greentree
- Campaign - is the code of the campaign that is in Greentree (this will be a default initially)
- Stage – is the status of the communication (this needs to be set as OPEN)
- PrimaryProduct -
- Priority – is a value of High, Medium or Low, this can be further defined in Greentree
- Source -
- OpenDate – the date on which the communication was created in the app
- OpenedBy – the user who opened the communication – who entered it
- OutlookWindowsName -
- SourceDetail – is the method that the communication is taking place email, fax, letter, other, site visit, telephone call test, voice mail or website. (this needs to be set to OTHER for the moment)
- Summary – is an 80 character string
- TimeSpent – is the time it takes to complete the communicaiton in HH:MM:SS
- Type – this is one of several options General, Sales, Service, Event, Collection and Fundraising

8. Communications in the API

Below are a list of the functions available for a CRM communication API query, a GET request can be structured to query all the communications in the system and pull back a list which would normally be filtered down to 1000 requests per page, or a GET request that is searching for a specific communication code. There are also two POST query types the first will create a new CRM communication and the other will update the code of the communication provided.

URL	Verb	Function
/CRMCommunication	GET	Query a list of CRM Communications
/CRMCommunication<code>	GET	Query a single CRM Communication
/CRMCommunication	POST	Create a new CRM Communication
/CRMCommunication<code>	POST	Update an existing CRM Communication

9. Sample Response

Below is a sample response of a CRM communication GET request. Highlighted in bold are the fields which required as minimum to create a CRM communication

```xml
<?xml version="1.0" encoding="UTF-8"?>
<CRMCommunication>
  <OidString>5504.1</OidString>
  <Edition>8</Edition>
  <CommunicationNumber>1000</CommunicationNumber>
  <Detail>SUPER 4/1/2008, 09:31:25 - Phoned Lisa to introduce myself and highlight our product range available.  Will send out brochures.</Detail>
  <Direction>Outbound</Direction>
  <EntryTimestamp>2008-01-06T09:32:21</EntryTimestamp>
  <EntryUser>SUPER</EntryUser>
  <IsColdCall>true</IsColdCall>
  <IsConnectionSucessfull>true</IsConnectionSucessfull>
  <IsPrivate>false</IsPrivate>
  <IsWebAccessible>false</IsWebAccessible>
  <ModifiedTimestamp>2011-09-23T11:00:44</ModifiedTimestamp>
  <ModifiedUser>SUPER</ModifiedUser>
  <AssignedTeam>Admin Team</AssignedTeam>
  <AssignedUser>Angela Allen</AssignedUser>
  <Organisation>1000</Organisation>
  <Contact>10000</Contact>
  <Campaign>1000</Campaign>
  <Stage>OPEN</Stage>
  <PrimaryProduct>1001</PrimaryProduct>
  <Priority>MEDIUM</Priority>
  <Source>CALL</Source>
  <OpenDate>2008-01-04</OpenDate>
  <OpenedBy>SUPER</OpenedBy>
  <OutlookWindowsName/>
  <SourceDetail/>
  <Summary>Introductory Call</Summary>
  <TimeSpent>00:01:48</TimeSpent>
  <Type>General</Type>
</CRMCommunication>
```

10. Additional API Integration

To be able to post a communication via the API several other API requests may need to be made, these would be organisations and contacts. These could be populated on the fly from and API request over an active internet connection or pre-populated from a prior request when a connection is not possible, the organisation would only need code and name for a user to select with only the code being sent back to Greentree, the contact will require the code, name and the organisation code so the list of contacts can be filtered once an organisation has been selected.

The URL below links to the online API documentation which covers all aspects of what is possible with the API as well as examples;

https://jubbly.atlassian.net/wiki/spaces/GTAPI/overview

11. API Testing Environment Details

Below are the details that can be used to connect to our test system for CRM communication development:

Server IP – 212.159.93.81
Port – 9002
Company Code – 07
Username – super
Password – super

12. Contact Details

Lisa Miles	lisa.miles@amethystassociates.co.uk
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Conference Calls can be arranged as required, we also use Team Viewer for our remote support and conferencing. Skype or Facetime can also be arranged.