

REST

INTEGRATION GUIDE

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1 REST Integration

1.1 About This Guide

The Gateway's REST Integration provides a method for application developers to access the Gateway's data in order to build their own applications. Third-party applications would require in depth programming knowledge and must be PCI compliant.

If you wish to create your own merchant management system, then you would use the REST interface to access the data you wish to display.

Note: The REST interface cannot be used to submit transactions, to do this you would need to still use the Direct or Hosted integration methods.

1.2 Pre-Requisites

You will need the following information to integrate with Gateway's REST interface.

User Account	Access to the REST interface requires a valid Gateway user account. This is the same user account you use to access the administration panel. You should have received these details when your account was set up.
Integration URL	https://gateway.example.com/rest/ ¹

¹The actual URL is specific to you and will be provided on request.

2 Gateway Request

Your website will need to send the request details to the integration URL via a HTTP request.

You instruct the interface via standard HTTP methods. Certain methods are 'idempotent' in that (aside from error or expiration issues) the side-effects of N > 0 identical requests is the same as for a single request. The methods GET, PUT and DELETE share this property.

Certain methods work only on individual resources and certain work only on resource collections.

The GET method supports condition requests where the standard HTTP headers 'If-Modified-Since' and 'If-None-Match' are respected and can be used to request data to be returned only if it has not been modified since last requested. Requests for the same information within 30 seconds will always return the previously cached data.

The REST integration returns information in the HTTP response code, HTTP response headers and the HTTP response content.

The main resource data is returned in the response content, but the response code is used to indicate whether the request was successful or not.

The format of the response is determined by any 'accept-type' request header or URL extension as specified in Section 2.4.

The request and response can be compressed if required as specified in Section 2.4.

2.1 HTTP Methods

Method	Idempotent	Resource Type	Description
GET	Yes	Individual	Retrieves the specified resource.
GET	Yes	Collection	Retrieves all the resources in the collection within the requested range and matching any requested filters.
PUT	Yes	Individual	Updates the specified resource with the new property values sent. Resource properties not sent remain unchanged.
PUT	Yes	Collection	NOT CURRENTLY SUPPORTED
POST	No	Individual	NOT CURRENTLY SUPPORTED
POST	No	Collection	Creates a new resource initialising it with the property values sent. Properties not sent will be given default values where possible.
DELETE	Yes	Individual	Deletes the specified resource.
DELETE	Yes	Collection	NOT CURRENTLY SUPPORTED

2.2 HTTP Headers

The following HTTP request headers may be sent as appropriate;

Header Name*	Reason
x-p3-token	Authentication token (valid for 1 hour)
accept	Content types accepted for the response (see Section Error! Reference source not found.)
accept-encoding	Content encodings accepted for the response (see Section 2.4)
authorization	Authentication credentials (see Section 2.5)
content-type	The request content formatting mime type (PUT/POST requests)
content-encoding	The request encoding used (See below)
content-length	Length of sent content
if-modified-since	Only return content if modified since (GET requests)
if-none-match	Only return content if etag doesn't match (GET requests)

The following HTTP response headers may be returned as appropriate;

Header Name*	Reason
x-p3-cached	'Y' if request came from cache, absent or 'N' if data is live.
x-p3-restapitime	Time taken by REST API to handle request
x-p3-token	Authentication token (valid for 1 hour)
content-type	The response content formatting used (see Section Error! Reference source not found.)
content-encoding	The response encoding used (see Section Error! Reference source not found.)
content-length	Length of returned content
last-modified	Time the data was collected (GET requests)
etag	Unique tag for this data, constant for cached data (GET requests)
location	URI of newly created resource (POST requests)

*The header name can be either in lowercase or mixed case.

2.3 Resource URIs

2.3.1 URI Path

Resources can be accessed using a standard URI in the format `"/resource/id"` where 'resource' is the resource name (plural) and 'id' is a specific resource id. If the 'id' component is omitted then the requests addresses the whole resource collection.

In addition to this most resources have fixed position in a hierarchy of ownership, for example, `"/resellers/1/customers/10/users/5"` will access the user#5 belonging to Customer#10 belonging to Reseller#1.

This hierarchal path can be used as the URI to access the resource if required; however as each resource's primary id is unique the standard URI is normally sufficient.

The hierarchal path to a resource is used for ACL inheritance as detailed in Section 2.6 and Appendix A

Where resources link through to other across 'branches' in the hierarchy they may publish short cut URI's, for example, `"/billingplans/1/customers/"` will access a collection of Customer resources that all use Billing Plan # 1.

2.3.2 URI Query Parameters

Any URI query parameters are taken as properties to filter a collection.

For example “?customerName=Fred&customerAddress=1+Arcacia+Avenue” will filter the customer collection to only those customers who have a `customerName` property equal to “Fred” and a `customerAddress` field equal to “1 Arcacia Avenue”.

Single character query parameters or those starting with a '_' are used to control the request, with the following currently supported;

Parameter Name	Parameter Value
<code>_callback [c]</code>	A callback function used for JSONP output formatting
<code>_escape [e]</code>	Request all resource strings to be escaped. Currently the only supported value is 'html' to html escape all strings
<code>_fields [f]</code>	A comma delimited list of resource property names to return as opposed to all properties. The core properties (Section 3.2) 'id', 'pid', 'type', 'ptype', 'uri', 'uri', 'path', 'text' & 'perm' are always returned
<code>_group [g]</code>	A comma delimited list of property names to group the returned collection by. Prefix the field name with an '-' to group descending or with an optional '+' sign to group ascending
<code>_ignore [i]</code>	A comma delimited list of property names not to validate when performing validation only using the '_verify' value.
<code>_limit [l]</code>	The maximum number of resources to return
<code>_match [m]</code>	A resource collection string filter. All string type properties of the resource will be matched against the given string
<code>_notfields [n]</code>	A comma delimited list of resource property names to not return as opposed to all properties. This is combined with any '_fields' value specified.
<code>_ok</code>	Request that a 200 response should be returned when ever a request is processed instead of codes such as 201, 422 etc. This for clients that assume responses other than 200 meant the server failed the request. Failure to authenticate, or parse the request will still result in a HTTP status coded response
<code>_order [o]</code>	A comma delimited list of property names to group the returned collection by. Prefix the field name with an '-' to group descending or with an optional '+' sign to group ascending
<code>_pretty [p]</code>	Pretty format the response with indentations and newlines rather than the usual compact format
<code>_query [q]</code>	Either a '_where' or '_match' filter. A value enclosed in round brackets is assumed to be a '_where' value otherwise it is taken as a '_match' value

Parameter Name	Parameter Value
<code>_refresh [r]</code>	Request that any caches should be refreshed if possible. This does not bypass the 30 second GET cache
<code>_start [s]</code>	The start resource number when paging through a collection
<code>_timeout [t]</code>	The maximum time to wait before for the operation to complete
<code>_truncate [u]</code>	Truncate long fields to this length. Truncate is automatically set to 128 characters when returning multiple resources
<code>_verify [v]</code>	Request that data sent in a PUT or POST request be validated only without actually updating or inserting a resource
<code>_where [w]</code>	A resource collection filter with SQL like syntax (e.g. <code>"(customerName = 'Fred' AND customerAge BETWEEN 40 AND 45) OR customerType = 'Admin'"</code>)
<code>_version [z]</code>	Treat resources as documented for this version of the API. If not specified then the latest version is assumed.

2.4 Content Format

The REST integration can accept and return data in a variety of formats or content types making decoding the data as easy as possible for the caller.

To request a particular output format use the 'Accepts' request header or the path extension. For example to request the resource 'Reseller#1' in XML format either use the URI '/rest/resellers/1' with an request header 'Accept: application/xml' or use the URI '/rest/resellers/1.xml'.

If both a path extension and 'Accepts' request header are used then the path extension takes priority and the header is ignored. Only single path extension can be specified whilst multiple mime types can be specified in an 'Accepts' header along with 'quality' prioritising.

When posting data to the API the 'Content-Type' request header must be used with one of the mime types given in the following table, the 'Accepts' request header or path extension will dictate the format of the returned data, not the sent data.

Name	Mime Type	Ext.	Description
XML	application/xml	.xml	Extensible Markup Language
JSON	application/json	.json	Javascript Object Notation
JSON P	application/javascript	.json p	JSON (with padding)
PHP	application/php	.php	PHP Hypertext Pre-processor
PHPS	application/vnd.php.serialized	.phps	PHP serialized
URL	application/x-www-form-urlencoded	.url	URL form encoded
CSV	application/csv text/csv text/comma-separated-values	.csv	Comma separated value format. Refer to Appendix A-1

Any 'Content-Type' request and response header can also include a 'charset' modifier to specify the sent data's character set. The response will always return data using the 'UTF-8' character set.

The request content can be gzip compressed as long as a 'Content-Encoding' request header is sent with a value of 'gzip' or 'x-gzip'.

Likewise the response can also be compressed using 'gzip' encoding if the request indicates via an 'Accept-Encoding' request header that 'gzip' or 'x-gzip' encoding is supported. When the response is compressed the 'Content-

Encoding' response header will echo back the 'gzip' or 'x-gzip' accepted in the request.

The response will only be compressed if it's over a predetermined size, thus small responses won't suffer any time overhead that compression may cause.

2.5 Authentication

To access the REST interface a valid Gateway user account is required. This account will be same account you use to access various Gateway application such as the Merchant Management System (MMS).

2.5.1 Users Accounts

The Gateway supports different types of user accounts and each type will have a different view of the resources available through its position in the resource hierarchy as displayed in Section 3.1 and determined by the basic permission and Access Control Lists detailed in Section 2.6.

The basic types of user accounts are as follows:

Administrator: these users sit at the root of the resource hierarchy and can have full control over all resources. These are typically Gateway support staff.

Reseller: these sit under their respective Resellers resource and are managed by the Reseller to allow their staff access to the system to manage their Referrers, Customers and related Merchant Accounts.

Referrers: these users sit under their respective Referrers resource and can login to various Gateway applications and see information about the Customers they referred.

Customer: these users sit under their respective Customers resource and are managed by the Customer to allow their staff access to the system to manage their Merchant Accounts.

Merchants: these users sit under a Merchant Account and have access to manage just that single account.

2.5.2 HTTP Authentication

Each request must contain authentication data. The normal method of authentication is to send your username and password in a 'Authorization' request header using the HTTP Basic Auth authorization scheme. This can sometimes be easily achieved by using the 'username:password' addition to the base integration URL (eg. `https://username:password@gateway.example.com/rest/...`).

Each successfully authenticated request will also return a 'x-p3-token' response header which contains an authentication token. This token may be used to authenticate further requests by sending it in an 'Authorization' header using the scheme name 'x-p3-token' or in an 'x-p3-token' header (as received). Each time you send in a token a new one is returned. Each returned token is valid for 1 hour.

To aid where custom authorization header schemes or custom headers cannot easily be sent or when manually typing the URL into a browser for testing etc. the token can also be sent using the HTTP Basic Auth authorization scheme by specifying a username of '___token__' and then sending the tokens value as the password (the keyword is "token" surrounded by a double underscore "___").

The following HTTP headers passing the token are therefore identical;

```
'x-p3-token: <token>'
'authorization: x-p3-token <token>'
'authorization: basic <base64token>'
```

Where '<base64token>' is the string '___token__:<token>' base 64 encoded, and '<token>' is the actual authentication token.

2.6 Authorisation

Access to the resources is primarily governed by the resource hierarchy and determined according to the authenticated user's position in that hierarchy.

2.6.1 Permissions

Basic permissions to the resource hierarchy are built in to the REST interface; in addition to this Access Control Lists (ACLs) define what specific permissions are granted.

An authenticated user;

- has control over its own resource, regardless of any ACLs.
- can browse its parents ancestors, regardless of any ACLs.
- can browse certain root resources, regardless of any ACLs.
- can control its parent and parents siblings, subject to any ACLs.
- can control peer users only if they can also browse all that peers groups and then dependant on any ACLs.

The permissions granted to a user for a resource is returned in the 'perm' property of the resource. This property is a bitmap of 32 binary permissions where the permission is granted if the bit is set or denied if the bit is cleared.

The meaning of the lower 16 bits is common for all resources as outlined below;

Bit	Hex	Name	Description
1	0x00000001	BROWSE	Resource is visible, standard and public properties only
2	0x00000002	DETAIL	Resource details can be viewed
3	0x00000004	MODIFY	Resource can be modified
4	0x00000008	CREATE	Resource can be created / Transaction can be submitted
5	0x00000010	DELETE	Resource can be deleted
9	0x00000100	SETPWD	Resource password property can be changed
10	0x00000200	SETACL	Resource ACL can be changed

The upper 16 bits are reserved for permissions specific to each resource, at the moment these are only defined for Transaction type resources as follows;

Bit	Hex	Name	Description
17	0x00010000	PREAUTH	Allow PREAUTH transactions via the MMS
18	0x00020000	SALE	Allow SALE transaction via the MMS
19	0x00040000	CREDIT	Allow CREDIT transactions via the MMS
20	0x00080000	REFUND	Allow REFUND_SALE transactions via the MMS
21	0x00100000	AUTHOR	Allow transactions to be manually authorized via the MMS
22	0x00200000	SETTLE	Allow transactions to be settled/captured via the MMS
23	0x00400000	CANCEL	Allow transactions to cancelled via the MMS
24	0x00800000	VERIFY	Allow VERIFY transactions via the MMS
25	0x01000000	SUBSCRIBE	Allow SUBSCRIBE transactions via the MMS

A resource with BROWSE permission is visible but DETAIL permission is required to see any other the resources fields other than the core fields detailed in Section 3.2.

All permissions are individually granted, therefore it is possible to give someone MODIFY permission to a resource that they don't have DETAIL permissions to, however we don't advise this as most front end administration systems will assume they can read the resource present it to the user and allow them to change the properties before submitting it back.

The SETPWD permission allows the password to be set on resources that support it without requiring MODIFY permissions on the resource. This allows you to set up user accounts which can handle user password changes but aren't allowed to modify any other information about the user. MODIFY permission allows the password to be changed and doesn't also require SETPWD permission.

When a user has SETPWD permission but not MODIFY permission then all the properties bar the password fields are effectively treated as read only.

2.6.2 Access Control Lists (ACLs)

Finer control over what permissions an authenticated user has to each resource can be controlled through the use of Access Control Lists (ACLs).

An ACL consists of multiple Access Control Entries (ACE) which can be used to grant or deny individual permissions. Permissions can be inherited from any ancestor resources permissions.

ACLs control the permissions on the resources that would normally be visible to a user; they cannot be used to grant permissions to resources where the basic permissions would not allow access. Therefore, you cannot grant a user permissions to a resource in a different branch of the hierarchy tree.

ACLs can currently only be modified by the Gateway's support team.

2.6.3 User Groups

Users can be placed into groups and then access permissions applied to the group as an easy way to grant certain permission to users on a job or role basis.

Groups can be defined either globally, or at the Reseller, Referrer and Customer levels. A user at the respective level can then be a member of any group at that level or to one of the global groups.

A set of predefined global Groups Resources exist which have been granted different permissions as follows:

- Administrators – have full control and can set permissions for others
- Supervisors – have full control but cannot set permissions
- Managers - can modify everything but are unable to create or delete
- Support - can only change user's passwords
- Monitors - cannot make any changes

2.6.4 Field Level Permissions

Permissions are applied at resource level only, however certain fields can be defined as being visible to only certain types of users. For example, an ancestor level user may be able to see fields that the actual Resource level user cannot see.

In addition fields can be designated as read only or insert only. New values sent for these fields using a PUT request will be silently ignored. A permission denied error will not be raised if an attempt is made to change a read only fields value, it just won't be changed.

2.7 Response Format

Resource data is returned in response to a GET/PUT/POST request as a structure containing the following fields;

Name	Purpose
success	True if the request was successful
message	Any error or warning message as required (optional)
id	Requested resource id (or zero for a resource collection)
data	Resource data collection (see Section 4)
count	Number of resources returned in data
total	Total number of resources available (when paging using <i>start</i> & <i>limit</i> query)
meta	Resource meta data (see Section 3.3)
timestamp	Time the resource data was collected
processed	Time in microseconds that it took to process the request

If a single resource is requested by id then the 'id' field will contain the resources id and the 'data' field will be an array containing a single resource.

If a resource collection is requested then the 'id' field will contain zero and the 'data' field will be an array containing all the resources in the collection subject to any paging and filtering specified in the request.

2.8 HTTP Response Codes

The following HTTP response codes are used;

Code	Reason
200	Request OK
201	Resource created OK ('Location' HTTP header gives URI of created resource)
204	Resource deleted OK
304	Not modified (requires a If-Modified-Since or If-None-Match request header).
400	Bad request (incorrectly formatted request or use of an unknown property name in URI query)
401	Unauthorized (no valid authentication information supplied)
403	Forbidden (action cannot be performed by current authenticated user)
404	No such resource (URI is not for a known resource or resource collection)
406	Not acceptable (unsupported output format type requested)
415	Unsupported media type (unsupported input format type specified)
422	Invalid data (the PUT/POST data has errors – message content gives reason)
500	Internal server error (something went wrong)

3 Resource Structure

The REST interface provides access to various Gateway resources representing different data in the system.

The 'resources' are managed views of the Gateway's data. The resources are grouped into collections and a collection can be requested in its entirety or filtered using the request URI query parameters (see Section 2.3.2).

Each resource is identified by its type and primary id formatted into an URI for the resource. Currently, the resource primary ids are positive nonzero integer values auto assigned on creation. However, there is no requirement for the primary id to be numeric and so a resource may exist in the future with nonnumeric ids.

Each request will always return a resource collection however requests for an individual resource will return a collection which contains just the requested resource.

The access to resources is scoped by the accessing user account at the resource level. Further to this certain resource properties are only visible to 'admin' type users.

Each resource is self describing; publishing URIs to other related resources and also returning its own meta data allowing the caller to validate against a 'live' meta schema. Having a live schema means that meta changes can be pushed out quickly. For more information about the resource meta data see Section 3.3.

The resource fields should be regarded as unordered and variable. Unknown fields sent in PUT/POST requests will be ignored and likewise new fields received should not result in parsing errors. The exception to this are fields referenced in the URL queries, these will cause the request to fail if they are unknown due to potential to match a different record set should a 'filter' field be unknown or simply misspelt.

Certain resource fields are 'readonly' and such fields sent in PUT/POST requests will be ignored. There may also be the case where certain resource fields are 'insertonly' and cannot be changed after creation; these will also be ignored in any PUT requests.

3.1 Resource Hierarchy

Each resource can optionally have a parent resource and child resources forming a resource hierarchy as shown in the image on the next page. This imposes a notation of ownership and allows permission scoping etc. (see Section 2.6)

A resource cannot be moved in the hierarchy so any attempt to modify a field that represents an ancestor resource's id will fail.

3.2 Core Fields

Each resource has a core set of descriptive fields; these fields are always visible for any resource the currently authenticated user can browse. The descriptive fields are;

Field Name	Description
id	Primary unique resource key
pid	Id of parent resource (always zero for Reseller resources)
type	Type of resource (always 'resellers')
ptype	Type of parent resource (always blank for Reseller resources)
uri	URI of resource
puri	URI of parent resource (always blank for Reseller resources)
path	Hierarchical path to resource
text	Short textual description of the resource
perms	Resource permissions for the authenticated user

In addition the further core fields may be present;

Field Name	Description
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

All core fields, except the 'status' field are read only and will be ignored if an attempt is made to change them.

3.3 Meta Data

Each resource is self describing and the 'meta' data field will contain a hash containing information about the resource as follows;

Name	Purpose
type	Type of resource
fields	Hash of meta data for each field in the resource
readonly	Resource is read only regardless of user authorisation

The 'fields' field in the resource meta data contains a hash of hashes containing information about the field as follows;

Name	Purpose
type	Primitive resource type
vtype	Validation resource type
vinfo	Hash of further information to aid validation
min	Min field value or field string length
max	Max field value or field string length
vre	Validation regular expression
vremsg	Message to display if validation regular expression fails
desc	Description of the field (reserved for future use)
help	Help text for the field (reserved for future use)
key	Value is the path to another resource
default	Default value for the resource (if omitted on resource creation)
readonly	Field cannot be modified (new values sent in PUT requests will be ignored)
writeonly	Field can be written only (value will never be returned)
insertonly	Field cannot be modified on existing resources (new values sent in PUT requests will be ignored)
updateonly	Field can only be modified on new resources (new values sent in POST requests will be ignored)
optional	Field is optional (may be omitted on resource creation)
unique	Field must have a unique value. Possible values are;

Name	Purpose
	1 – Field has to have a value unique to all resources of this type 2 – Field has to have a value unique to all resources of this type and parent
truncated	Added if data is truncated on return (long values may be returned truncated)
core	Field is regarded as a core field and visible to with only SELECT permissions

3.4 Resource Status & Deletion

3.4.1 Resource Status

Resources can be marked as inactive using the 'status' field. Inactive resources should be regarded as not available for current use.

This field can be modified at any time and can be used to temporarily suspend accounts etc.

For example;

- A User account whose resource status is 'inactive' will not be able to login to the Gateway's applications.
- A Merchant account whose resource is 'inactive' will not be able to process transactions.

3.4.2 Resource Deletion

Resources can be deleted using the HTTP DELETE command.

Deleting a resource will also cause all its children to be deleted. The exception to this is the Transactions resources that remain visible even if their ancestors are deleted (in this case the URIs the resource returns to retrieve the ancestral information will be blank).

When deleting a resource, the physical resource data is never removed, instead it is internally marked as 'deleted'.

This means information is never lost. However deleted resources will no longer appear in the resource collections and will return a 401 'Not found' if an attempt is made to retrieve them via the REST integration.

There is no means to reverse the deletion via the REST integration. However, if you accidentally delete a resource you can contact the Gateway's support team to request to have the resource reinstated.

The Gateway may physically remove resource data for resources that have been deleted for a long period of time after which they cannot be undeleted.

4 Resource Types

The following resources are available;

Name	Description
<u>AddOns</u>	Subscription Plan Add-on information
<u>Addresses</u>	Address information (stored in a Wallet)
<u>Aliases</u>	Merchant account alias information
<u>BillingPlans</u>	Billing Plan information
<u>Cards</u>	Payment card information (stored in a Wallet)
<u>CardTypes</u>	Card type information
<u>Countries</u>	Country information (ISO-3166)
<u>Currencies</u>	Currency information (ISO-4217)
<u>Customers</u>	Customer information
<u>EReceipts</u>	eReceipt information
<u>Groups</u>	Group information
<u>Invoices</u>	Billing Invoice information
<u>Merchants</u>	Merchant account information
<u>Payments</u>	Billing Invoice Payment information
<u>Plans</u>	Subscription Plan information
<u>Processors</u>	Processor layer information
<u>PurchaseDetails</u>	Purchase information (stored for a Transaction)
<u>PurchaseItems</u>	Purchase Item information (stored for a Transaction)
<u>Referrers</u>	Referrer information
<u>Resellers</u>	Reseller account information
<u>RtusAgreements</u>	Recurring Transaction Agreements
<u>RtusEnquiries</u>	Recurring Transaction Update Service Merchant Enquiry information
<u>RtusFiles</u>	Recurring Transaction Update Service Acquirer File information
<u>Secrets</u>	Secret information (stored in a Wallet)
<u>SettlementFiles</u>	Transaction Settlement Acquirer File information
<u>Subscriptions</u>	Subscription information

<u>ThreeDSRequests</u>	3D-Secure information (stored for a Transaction)
<u>Transactions</u>	Transaction information
<u>Translators</u>	Translation layer information
<u>Users</u>	User account information
<u>VcRules</u>	Velocity Check Rules
<u>Wallets</u>	Wallet information

Each resource type is detailed below along with its use etc.

4.1 Addresses Resources

The Addresses resource contains information about an address stored in a shopper's wallet.

Addresses resources are child resources to the Wallets resource they belong to.

An Addresses resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Wallet resource
type	Type of resource (always 'addresses')
ptype	Type of parent resource (always 'wallets')
Uri	URI of resource
puri	URI of parent Wallet resource
path	Hierarchical path to resource
text	Short textual description of the resource
addressID	Primary unique resource key (same as 'id')
addressUri	URI of resource (same as 'uri')
addressName	Name of resource
walletID	Id of parent Wallet resource
walletUrl	URI of parent Wallet resource
walletName	Name of parent Wallet resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
description	Description of AddOn
contact	Contact's full name and title

Field Name	Description
company	Company Name
street	Postal Street (can be multiple lines)
town	Postal town
county	Postal county/region
postcode	Postal postcode/zipcode
countryCode	Country code (ISO-3166 2 letter code)
countryName	Country name (readonly)
phone	Contact's phone number (ITU-T E.164 format)
fax	Contact's fax number (ITU-T E.164 format)
mobile	Contact's mobile number (ITU-T E.164 format)
email	Contact's email address
data	Free format data
default	Is this the default address for the parent Wallet ('Y' or 'N')
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

4.2 Aliases Resources

The Aliases resource is used to describe the different aliases each Merchant Account can use to identify its self when performing a transaction via the Gateway's Direct Integration method.

Aliases are primarily used by the Translation engines to support the conversion of foreign transaction requests to native Gateway transactions. The alias information would contain the foreign authentication data sent in the foreign transaction request allowing it to be mapped to a native Gateway Merchant Account.

Aliases resources are child resources to the Merchant resource that they map to.

An Aliases resource consists of the following fields:

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'aliases')
ptype	Type of parent Reseller resource (always 'merchants')
uri	URI of resource
puri	URI of parent Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
aliasID	Primary unique resource key (same as 'id')
aliasUri	URI of resource (same as 'uri')
aliasName	Name of resource
merchantID	Id of parent Merchant resource (same as 'pid')
merchantUri	URI of parent Merchant resource (same as 'puri')
merchantName	Name of parent Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource

Field Name	Description
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
translatorID	Id of translation engine this is an alias for
translatorUri	URI of translation engine this is an alias for
translatorName	Name of translation engine this is an alias for
password	Password for transaction requests (optional) (obfuscated on read)
inheritPassword	Inherit (use) password from parent Merchant resource (optional)
securityKey	Key used to secure transactions sent for this account (optional)
inheritSecurityKey	Inherit (use) securityKey from parent Merchant resource (optional)
data	Data required by the transaction engine for this alias (optional)
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.3 BillingPlans Resource

The BillingPlans resource is used to describe the various billing plans available for each reseller. A Customer is assigned a BillingPlan and that controls how the Customer is billed.

BillingPlan resources describe costs such as initial setup charges, per transaction charges and per Merchant Account charges.

They allow per transaction charges to be assigned depending on the volume of transactions so the more transactions a Customer makes the cheaper the transaction become.

BillingPlans resources are child resources to the Reseller resource that they belong to.

A BillingPlans resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'billingplans')
ptype	Type of parent Reseller resource (always 'resellers')
uri	URI of resource
puri	URI of parent Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
billingPlanID	Primary unique resource key (same as 'id')
billingPlanUri	URI of resource (same as 'uri')
billingPlanName	Name of resource
resellerID	Id of parent Reseller resource (same as 'pid')
resellerUri	URI of parent Reseller resource (same as 'puri')
resellerName	Name of parent Reseller resource
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol

Field Name	Description
setupCost	Amount to charge to setup each Merchant Account (£.p)
monthlyCost	Amount to charge per month (£.p)
monthlyMerchatCost	Amount to charge per month for each Merchant Account (£.p)
annualCost	Amount to charge per year (£.p)
shareBreakpoints	Share the breakpoints across each Merchant Account
breakpoints	Series of breakpoints objects contain the following fields; <ul style="list-style-type: none"> • Breakpoint - Minimum number of transactions per month. • Cost - Amount to charge each month per transaction
customersCnt	Number of customers using this billing plan
customersUri	URI of a collection of Customers using this billing plan
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.4 Cards Resources

The Cards resource contains information about a payment card stored in a shopper's wallet.

Cards resources are child resources to the Wallets resource they belong to.

A Cards resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Wallet resource
type	Type of resource (always 'cards')
ptype	Type of parent resource (always 'wallets')
Uri	URI of resource
puri	URI of parent Wallet resource
path	Hierarchical path to resource
text	Short textual description of the resource
cardID	Primary unique resource key (same as 'id')
cardUri	URI of resource (same as 'uri')
cardName	Name of resource
walletID	Id of parent Wallet resource
walletUrl	URI of parent Wallet resource
walletName	Name of parent Wallet resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
description	Description of Card
typeCode	Code identifying particular Card type
typeName	Descriptive name of Card type

Field Name	Description
holder	Card holders name (as printed on card)
number	Card number (full PAN – spaces between digits is ignored). This will contain the 'mask' on reading unless the called has permission to extract card numbers.
token	Token number which can be used instead of the card number to in transactions. The Token number will look like a real card number and will have the same last 4 digits of the actual card number. Multiple stored card numbers have unique tokens per resource not per card number.
mask	A masked representation of the card number.
expiryDate	Card expiry date (MMYY format)
startDate	Card start date where used (MMYY format)
issueNumber	Card issue number where used
duplicatesAllowed	Allow duplicates of this card number to be stored in the same Wallet.
data	Free format data
default	Is this the default card for the parent Wallet ('Y' or 'N')
rtusEnabled	Recurring Transaction Update Service enabled. If enabled the card details will be checked for updates in card number and expiry date.
rtusMerchantID	Id of Merchants Resource used to make RTUS enquiries
rtusMerchantName	Name Merchants Resource used to make RTUS enquiries
rtusMerchantUri	Uri of Merchants Resource used to make RTUS enquiries
rtusLastDate	Date the card details where last checked by the RTUS
rtusNextDate	Date the card details should next be checked by the RTUS
rtusFrequency	Frequency in days the card should be checked by the RTUS
rtusUpdated	Flag indicating RTUS updated the card details, One of 'Y' or 'N'
rtusAcquirerResponseCode	Response returned by the Acquirer on an RTUS enquiry
rtusSchemeResponseCode	Response returned by the Scheme on an RTUS enquiry
rtusResponseCode	Response returned by the Gateway on an RTUS enquiry
rtusFileID	Id of RtusFiles resource Card was last included in
rtusFileUri	Uri of RtusFiles resource Card was last included in
billingAddressID	Id of Address resource linked to this Card (billing address)

Field Name	Description
billingAddressUri	URI of Address resource linked to this Card (billing address)
billingAddressName	Name of Address resource linked to this Card (billing address)
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

4.5 CardTypes Resources

The CardTypes resource contains information about the different types of payment card supported by the Gateway.

This is a read only resource, the REST interface cannot be used to modify these resources.

CardTypes resources are root resources and have no parent or child resources.

A CardTypes resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Wallet resource
type	Type of resource (always 'cardtypes')
ptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
cardTypeID	Primary unique resource key (same as 'id')
cardTypeUri	URI of resource (same as 'uri')
cardTypeName	Name of resource
code	Short code for this CardType
scheme	Short code for the Card scheme
schemeName	Descriptive name for the 'scheme'
active	Card type is active ('Y' or 'N')

4.6 Countries Resources

The Countries resource contains information about a countries supported by the Gateway.

This is a read only resource, the REST interface cannot be used to modify these resources.

Countries resources are root resources and have no parent or child resources.

A Countries resource consists of the following fields;

Field Name	Description
id	Primary unique resource key (ISO-3166 3 digit code)
pid	Id of parent Wallet resource
type	Type of resource (always 'countries')
ptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
countryID	Primary unique resource key (same as 'id')
countryUri	URI of resource (same as 'uri')
countryName	Name of resource (ISO-3166 country name)
code2	Short code for this country (ISO-3166 2 letter code)
code3	Long code for the country (ISO-3166 3 letter code)
active	Country is active ('Y' or 'N')

4.7 Currencies Resources

The Currencies resource contains information about currencies supported by the Gateway.

This is a read only resource, the REST interface cannot be used to modify these resources.

Currencies resources are root resources and have no parent or child resources.

A Currencies resource consists of the following fields;

Field Name	Description
id	Primary unique resource key (ISO-4217 3 digit code)
pid	Id of parent Wallet resource
type	Type of resource (always 'countries')
ptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
currencyID	Primary unique resource key (same as 'id')
currencyUri	URI of resource (same as 'uri')
currencyName	Name of resource (ISO-4217 currency name)
code	Short code for this country (ISO-4217 2 letter code)
symbol	Symbol for the currency (UTF-8)
exponent	Number of decimal places used by the currency
active	Currency is active ('Y' or 'N')

4.8 Customers Resource

The Customers resource gives information on entities that hold information about Customers. Each Reseller can have a number of Customers and each Customer can have a number of Merchant Accounts.

Customers resources are child resources to the Reseller resource that they belong to.

A Customers resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'customers')
ptype	Type of parent Reseller resource (always 'resellers')
uri	URI of resource
puri	URI of parent Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
customerID	Primary unique resource key (same as 'id')
customerUri	URI of resource (same as 'uri')
customerName	Name of resource
resellerID	Id of parent Reseller resource (same as 'pid')
resellerUri	URI of parent Reseller resource (same as 'puri')
resellerName	Name of parent Reseller resource
referrerID	Id of Referrer resource who referred this customer
referrerUri	URI of Referrer resource who referred this customer
referrerName	Name of Referrer resource who referred this customer
companyType	Customers company type
website	Customer's website
contactName	Primary contact's full name and title
contactPosition	Primary contact's position (i.e. 'Development Manager')

Field Name	Description
contactAddress1	Primary contact's address
contactAddress2	Primary contact's address (optional second line)
contactTown	Primary contact's address town/city
contactCounty	Primary contact's address county/region
contactPostcode	Primary contact's address postcode/zipcode
contactCountryCode	Primary contact's address country code (ISO-3166 2 letter code)
contactCountryName	Primary contact's address country name
contactPhone	Primary contact's phone number (ITU-T E.164 format)
contactFax	Primary contact's fax number (ITU-T E.164 format)
contactEmail	Primary contact's email address
billingName	Billing contact's full name and title
billingPosition	Billing contact's position (i.e. 'Accountant')
billingAddress1	Billing contact's address
billingAddress2	Billing contact's address (optional second line)
billingTown	Billing contact's address town/city
billingCounty	Billing contact's address county/region
billingPostcode	Billing contact's address postcode/zipcode
billingCountryCode	Billing contact's address country code (ISO-3166 code)
billingCountryName	Billing contact's address country name
billingPhone	Billing contact's phone number (ITU-T E.164 format)
billingFax	Billing contact's fax number (ITU-T E.164 format)
billingEmail	Billing contact's email address
supportName	Support contact's full name and title
supportPosition	Support contact's position (i.e. 'Support Manager')
supportAddress1	Support contact's address
supportAddress2	Support contact's address (optional second line)
supportTown	Support contact's address town/city
supportCounty	Support contact's address county/region

Field Name	Description
supportPostcode	Support contact's address postcode/zipcode
supportCountryCode	Support contact's address country code (ISO-3166 code)
supportCountryName	Support contact's address country name
supportPhone	Support contact's phone number (ITU-T E.164 format)
supportFax	Support contact's fax number (ITU-T E.164 format)
supportEmail	Support contact's email address
merchantsCnt	Number of child Merchant resources
merchantsUri	URI of child Merchant resource collection
usersCnt	Number of child User resources
usersUri	URI of child User resource collection
groupsCnt	Number of child Group resources
groupsUri	URI of child Group resource collection
invoicesCnt	Number of child Invoice resources
invoicesUri	URI of child Invoice resource collection
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

The following field are also available if the resource is accessed by the owning Reseller user.

Field Name	Description
billingManual	Bill the customer manually instead of automatically ('Y' or 'N')
billingPlanID	Id of BillingPlan resource defining how to bill the customer
billingPlanUri	URI of BillingPlan resource defining how to bill the customer
billingPlanName	Name of BillingPlan resource defining how to bill the Customer
billingDate	Date billing payments should be taken
billingAnnual	Bill the Customer on an annual subscription basis at the yearly cost for the associated Billing Plan. Transactions are still billed on a monthly basis
billingTaxable	Add sales tax to the Customers bills
billingSendReminders	Send reminder emails about overdue invoices to the Customer
billingXref	Transaction cross-reference used to take billing payments

4.9 EReceipts Resource

The EReceipts resource gives access to the third-party electronic receipts stored by EReceipts.

EReceipts resources are child resources to the Merchant Account resource that they belong to.

A EReceipts resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Merchantresource
type	Type of resource (always 'ereceipts')
ptype	Type of parent Merchant resource (always 'merchants')
uri	URI of resource
puri	URI of parent Merchantresource
path	Hierarchical path to resource
text	Short textual description of the resource
eReceiptID	Primary unique resource key (same as 'id')
eReceiptUri	URI of resource (same as 'uri')
eReceiptName	Name of resource
merchantID	Id of parent Merchant resource (same as 'pid')
merchantUri	URI of parent Merchant resource (same as 'puri')
merchantName	Name of parent Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource

The remainder of the fields in this resource are provided by the external EReceipts system and beyond the control of the Gateway.

4.10 Groups Resources

The Groups resource gives information on groups that a User can join.

Groups resources are child resources to the Resellers, Referrers and Customers resources allowing those levels that can contain Users to have their own Groups.

They can also exist with no parent resource in which case they are the predefined Global Groups which are available to all Users.

A Groups resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'groups')
ptype	Type of parent resource (either blank, 'resellers', 'referrers' or 'customers')
uri	URI of resource
puri	URI of parent resource
path	Hierarchical path to resource
text	Short textual description of the resource
groupID	Primary unique resource key (same as 'id')
groupUri	URI of resource (same as 'uri')
groupName	Name of resource
customerID	Id of any parent Customer resource
customerUri	URI of parent Customer resource
customerName	Name of parent or ancestor Customer resource
referrerID	Id of parent Referrrrer resource
referrerUri	URI of parent Referrer resource
referrerName	Name of parent Referrer resource
resellerID	Id of parent or ancestor Reseller resource
resellerUri	URI of parent or ancestor Reseller resource
resellerName	Name of parent or ancestor Reseller resource

Field Name	Description
groupType	Type of user (one of 'global', 'reseller', 'referrer' or 'customer')
description	Description of group
users	List of User resource primary ids that are members of the group
userNames	List of User names that are members of the group
usersCnt	Number of member Users resources.
usersUri	URI of member Users resource collection
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.11 Invoices Resources

The Invoices resource gives information on an invoice sent as part of billing service. Invoices can be sent to Customers or Resellers.

This is a read only resource, the REST interface cannot be used to modify these resources.

Invoices resources are child resources to the Resellers and Customers resources who are billed for their use of the Gateway.

An Invoices resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller or Customer resource
type	Type of resource (always 'invoices')
ptype	Type of parent resource (either 'resellers' or 'customers')
uri	URI of resource
puri	URI of parent Reseller or Customer resource
path	Hierarchical path to resource
text	Short textual description of the resource
invoiceID	Primary unique resource key (same as 'id')
invoiceUri	URI of resource (same as 'uri')
invoiceName	Name of resource
customerID	Id of any parent Customer resource
customerUri	URI of parent Customer resource
customerName	Name of parent or ancestor Customer resource
resellerID	Id of parent or ancestor Reseller resource
resellerUri	URI of parent or ancestor Reseller resource
resellerName	Name of parent or ancestor Reseller resource
invoiceType	Type of invoice (one of 'reseller' or 'customer')
reference	Invoice reference
state	Invoice state (one of 'paid', 'unpaid' or 'cancelled')

Field Name	Description
startDate	Invoiced period start date
endDate	Invoiced period end date
annualStartDate	Invoiced period annual start date
annualEndDate	Invoiced period annual end date
transactionsCount	Number of transactions being invoiced for
transactionsCost	Cost of the transactions being invoiced for
rate	Billing rate
totalAmount	Amount the invoice is for
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
paymentsCnt	Number of child Payment resources
paymentUri	URI of child Payments resource collection
state	Invoice state ('paid', 'inpaid', 'cancelled')
remindersSentCnt	Number of reminder emails sent
remindersSentDate	Date last reminder was sent
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.12 Merchants Resources

The Merchants resource is used to describe a Merchant Account held by a Customer.

Merchants resources are child resources to the Customers resource that they belong to.

A Merchants resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'merchants')
ptype	Type of parent Reseller resource (always 'customers')
uri	URI of resource
puri	URI of parent Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
merchantID	Primary unique resource key (same as 'id')
merchantUri	URI of resource (same as 'uri')
merchantName	Name of resource
customerID	Id of parent Customer resource (same as 'pid')
customerUri	URI of parent Customer resource (same as 'puri')
customerName	Name of parent Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
url	Merchant's shop web site address
password	Password for transaction requests (obfuscated on read)
description	Short description of merchant account
testMode	Account is for testing purposes 'Y' or 'N'
securityKey	Additional key used to secure transactions sent for this account

Field Name	Description
processorID	Id of Processor resource used
processorUri	URI of Processor resource
processorName	Name of Processor resource used
acquirerBankName	Name of acquiring bank
acquirerBankAddress	Address of acquiring bank
acquirerBankMerchantId	Merchant Identifier (MID) issued by acquiring bank
businessBankName	Name of business/settling bank
businessBankAddress	Address of business/settling bank
businessBankSortCode	Sort code of business account
businessBankMerchantNo	Merchant Account Number issued by business/settling bank
ipAddresses	List of IP address that can perform transactions
caEnabled	Merchant Account support Continuous Authority transactions
rtsEnabled	Merchant Account supports Recurring Transaction System
threeDSEnabled	Merchant Account supports 3D-Secure ('Y' or 'N')
threeDSRequired	Transactions should use 3D-Secure by default ('Y' or 'N')
threeDSCheckPref	Comma separated list of transaction threeDSCheck values allowed in order for the transaction to proceed. One or more of 'not known', 'not checked', 'authenticated', 'not authenticated' and 'attempted authentication'
avscv2CheckEnabled	Merchant Account supports AVS/CV2 checking
avscv2CheckRequired	Transactions should used AVS/CV2 by default
cv2CheckPref	Comma separated list of transaction cv2Check values allowed in order for the the transaction to proceed. One or more of 'not know', 'not checked', 'matched', 'not matched' and 'partially matched'
addressCheckPref	Comma separated list of transaction addressCheck values allowed in order for the the transaction to proceed. One or more of 'not know', 'not checked', 'matched', 'not matched' and 'partially matched'
postcodeCheckPref	Comma separated list of transaction postcodeCheck values allowed in order for the the transaction to proceed. One or more of 'not know', 'not checked', 'matched', 'not matched' and 'partially matched'
supportedCurrencies	List of ISO-4217 currency codes supported by account
supportedCurrenciesCnt	Number of currencies supported by account

Field Name	Description
supportedCurrenciesUri	URI of child Currencies resource collection
acceptedCurrencies	List of ISO-4217 currency codes accepted by account
acceptedCurrenciesCnt	Number of currencies accepted by account
acceptedCurrenciesUri	URI of child Currencies resource collection
supportedCardTypes	List of card type codes supported by account
supportedCardTypesCnt	Number of card types supported by account
supportedCardTypesUri	URI of child card types resource collection
acceptedCardTypes	List of card type codes accepted by account
acceptedCardTypesCnt	Number of card types accepted by account
acceptedCardTypesUri	URI of child CardType resource collection
rejectedCardCountries	List of ISO-3166 country codes rejected by the account
rejectedCardCountriesCnt	Number of countries rejected by the account
rejectedCardCountriesUri	URI of Countries resource collection
customerReceiptsEnabled	Customer receipts enabled for the account
notifyEmail	Notification email
eReceiptsEnabled	eReceipts is enabled for this account
eReceiptsApiKey	eReceipts default API key
eReceiptsApiSecret	eReceipts default API Secret
eReceiptsStoreID	eReceipts default Store ID
routingRef	Unique routing group reference
routingPriority	Account priority in routing group
usersCnt	Number of child User resources
usersUri	URI of child User resource collection
groupsCnt	Number of child Group resources
groupsUri	URI of child Group resource collection
transactionsCnt	Number of child Transaction resources
transactionsUri	URI of child Transaction resource collection
createTime	Time the resource was created (UTC)

Field Name	Description
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

The following field are also available if the resource is accessed by the owning Reseller user.

Field Name	Description
processorMerchantID	Merchant Identifier used by Processor
processorPassword	Password used by Processor (obfuscated on read)

4.13 Payments Resources

The Payments resource gives information on payments made as part of an Invoice.

This is a read only resource, the REST interface cannot be used to modify these resources.

Payments resources are child resources to the invoice they are payments for,

A Payments resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Invoice resource
type	Type of resource (always 'payments')
ptype	Type of parent resource (always 'invoices')
uri	URI of resource
puri	URI of parent Invoice resource
path	Hierarchical path to resource
text	Short textual description of the resource
paymentID	Primary unique resource key (same as 'id')
paymentUri	URI of resource (same as 'uri')
paymentName	Name of resource
invoiceID	Id of any parent Invoice resource
invoiceUri	URI of parent Invoice resource
invoiceName	Name of parent Invoice resource
customerID	Id of any ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
state	Payment state (one of 'successful' or 'failed')

Field Name	Description
xref	Transaction cross references used for repeat payments
amount	Amount the payment is for
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
method	Payment method (one of 'card', 'cash', 'cheque', 'transfer' or 'bacs')
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.14 Processors Resources

The Processors resource is used to describe a Merchant Account processing engine. These engines control communication to and from an acquiring bank.

Different acquiring banks have different requirements and therefore each processing engine is aware of those requirements and can pass transactions to the bank for authorization and settlement.

This is a read only resource, the REST interface cannot be used to modify these resources.

Processors resources are root resources and have no parent or child resources.

A Processors resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'processors')
ptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
processorID	Primary unique resource key (same as 'id')
processorUri	URI of resource (same as 'uri')
processorName	Name of resource
supportedCurrencies	List of ISO-4217 currency codes supported by account
supportedCurrenciesCnt	Number of currencies supported by account
supportedCurrenciesUri	URI of child Currencies resource collection
supportedCardTypes	List of card type codes supported by account
supportedCardTypesCnt	Number of card types supported by account
supportedCardTypesUri	URI of child card types resource collection
perms	Resource permissions for the authenticated user

4.15 PurchaseDetails Resources

The PurchaseDetails resource gives information on any extra purchasing information sent with a financial transaction. This resource provides auxiliary information to the main Transactions resource.

This is a read only resource, the REST interface cannot be used to modify these resources.

PurchaseDetails resources are child resources to the Transactions resource they are the details for.

A PurchaseDetails resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Transactions resource
type	Type of resource (always 'purchasedetails')
ptype	Type of parent Transactions resource (always 'transactions')
uri	URI of resource
puri	URI of parent Transactions resource
path	Hierarchical path to resource
text	Short textual description of the resource
purchaseDetailID	Primary unique resource key (same as 'id')
purchaseDetailUri	URI of resource (same as 'uri')
transactionID	Id of parent Transaction resource (same as 'pid')
transactionUri	URI of parent Transaction resource (same as 'puri')
merchantID	Id of ancestor Merchant resource
merchantUri	URI of ancestor Merchant resource
merchantName	Name of ancestor Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource

Field Name	Description
resellerName	Name of ancestor Reseller resource
action	The transaction action
method	The transaction method (ECOM, KEYED, SWIPED etc.)
amount	The transaction amount in decimal format
netAmount	The net amount in decimal format
grossAmount	The gross amount in decimal format
taxAmount	The tax amount in decimal format
taxRate	The tax rate as a percentage
taxReason	The reason the tax was applied
discountAmount	The discount amount applied in decimal format
discountReason	The reason the discount was applied
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
countryCode	ISO-3166 alpha3 country code
countryName	ISO-3166 country name
merchantOrderRef	Merchant's reference for this order (Invoice/Sales Reference)
merchantCustomerRef	Merchant's reference for the Customer
merchantTaxRef	Merchant's tax reference number
merchantCategoryCode	Scheme assigned Merchant Category Code (MCC)
merchantAltName	Merchant's contact name
merchantCompany	Merchant's company name
merchantAddress	Merchant's contact address
merchantTown	Merchant's contact town/city
merchantCounty	Merchant's contact county
merchantPostcode	Merchant's contact postcode
merchantCountryCode	Merchant's contact country code
merchantCountryName	Merchant's contact country name
merchantPhone	Merchant's phone

Field Name	Description
merchantMobile	Merchant's mobile phone number
merchantFax	Merchant's fax number
merchantEmail	Merchant's email address
merchantWebsite	Merchant's website
cardholderOrderRef	Cardholder's reference for this order (Purchase Order Reference)
cardholderMerchantRef	Cardholder's reference for the Merchant
cardholderTaxRef	Cardholder's tax reference number
cardholderName	Cardholder's contact name
cardholderCompany	Cardholder's company name
cardholderAddress	Cardholder's contact address
cardholderTown	Cardholder's contact town/city
cardholderCounty	Cardholder's contact county
cardholderPostcode	Cardholder's contact postcode
cardholderCountryCode	Cardholder's contact country code
cardholderCountryName	Cardholder's contact country name
cardholderPhone	Cardholder's phone
cardholderMobile	Cardholder's mobile phone number
cardholderFax	Cardholder's fax number
cardholderEmail	Cardholder's email address
cardholderWebsite	Cardholder's website
supplierName	Supplier's contact name
supplierCompany	Supplier's company name
supplierAddress	Supplier's contact address
supplierTown	Supplier's contact town/city
supplierCounty	Supplier's contact county
supplierPostcode	Supplier's contact postcode
supplierCountryCode	Supplier's contact country code
supplierCountryName	Supplier's contact country name
supplierPhone	Supplier's phone

Field Name	Description
supplierMobile	Supplier's mobile phone number
supplierFax	Supplier's fax number
supplierEmail	Supplier's email address
deliveryName	Delivery contact name
deliveryCompany	Delivery company name
deliveryAddress	Delivery contact address
deliveryTown	Delivery contact town/city
deliveryCounty	Delivery contact county
deliveryPostcode	Delivery contact postcode
deliveryCountryCode	Delivery contact country code
deliveryCountryName	Delivery contact country name
deliveryPhone	Delivery phone
deliveryMobile	Delivery mobile phone number
deliveryFax	Delivery fax number
deliveryEmail	Delivery email address
receiverName	Receiver's contact name
receiverCompany	Receiver's company name
receiverAddress	Receiver's contact address
receiverTown	Receiver's contact town/city
receiverCounty	Receiver's contact county
receiverPostcode	Receiver's contact postcode
receiverCountryCode	Receiver's contact country code
receiverCountryName	Receiver's contact country name
receiverPhone	Receiver's phone
receiverMobile	Receiver's mobile phone number
receiverFax	Receiver's fax number
receiverEmail	Receiver's email address
receiverAccountNo	Receiver's account number
receiverDateOfBirth	Receiver's date of birth

Field Name	Description
shippingTrackingRef	Shipping tracking reference.
shippingMethod	Shipping method (eg. Courier, Post, etc.).
shippingAmount	Cost of shipping.
shippingGrossAmount	Gross cost of shipping.
shippingNetAmount	Net cost of shipping.
shippingTaxRate	Tax rate as percentage to 2 decimal places.
shippingTaxAmount	Tax cost of shipping.
purchaseItemsCnt	Count of associated PurchaseItem resources
purchaseItemsUri	URI of associated PurchaseItem resources
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions for the authenticated user

4.16 PurchaseItems Resources

The PurchaseItems resource gives information on any purchase line item information sent with a financial transaction. This resource provides auxiliary information to the main Transactions resource.

This is a read only resource, the REST interface cannot be used to modify these resources.

PurchaseItems resources are child resources to the Transactions resource they are the line items for.

A PurchaseItems resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Transactions resource
type	Type of resource (always 'purchaseitems')
ptype	Type of parent Transactions resource (always 'transactions')
uri	URI of resource
puri	URI of parent Transactions resource
path	Hierarchical path to resource
text	Short textual description of the resource
purchaseItemID	Primary unique resource key (same as 'id')
purchaseItemUri	URI of resource (same as 'uri')
transactionID	Id of parent Transaction resource (same as 'pid')
transactionUri	URI of parent Transaction resource (same as 'puri')
merchantID	Id of ancestor Merchant resource
merchantUri	URI of ancestor Merchant resource
merchantName	Name of ancestor Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource

Field Name	Description
resellerName	Name of ancestor Reseller resource
itemNumber	The line item number
description	The item description
productCode	Product code as assigned by the card scheme
commodityCode	Commodity code as assigned by the Merchant
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
grossAmount	Gross cost for this item in decimal format
netAmount	Net cost for this item in decimal format
unitAmount	Cost per unit in decimal format
quantity	The quantity of this item purchased
taxAmount	Tax amount for this item in decimal format
taxRate	Rate of tax used for this item as a percentage
discountAmount	Discount amount applied to this item in decimal format
discountReason	Reason discount was applied to this item
unitOfMeasure	Unit item is measured in as assigned by the card scheme
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions for the authenticated user

4.17 Referrers Resource

The Referrers resource gives information on entities that refer Customers to each Reseller

Referrers resources are child resources to the Customers resource that they belong to.

A Referrers resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'referrers')
ptype	Type of parent Reseller resource (always 'resellers')
uri	URI of resource
puri	URI of parent Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
referrerID	Primary unique resource key (same as 'id')
referrerUri	URI of resource (same as 'uri')
referrerName	Name of resource
resellerID	Id of parent Reseller resource (same as 'pid')
resellerUri	URI of parent Reseller resource (same as 'puri')
resellerName	Name of parent Reseller resource
website	Referrer's website
contactName	Primary contact's full name and title
contactPosition	Primary contact's position (i.e. 'Development Manager')
contactAddress1	Primary contact's address
contactAddress2	Primary contact's address (optional second line)
contactTown	Primary contact's address town/city
contactCounty	Primary contact's address county/region
contactPostcode	Primary contact's address postcode/zipcode

Field Name	Description
contactCountryCode	Primary contact's address country code (ISO-3166 code)
contactCountryName	Primary contact's address country name
contactPhone	Primary contact's phone number (ITU-T E.164 format)
contactFax	Primary contact's fax number (ITU-T E.164 format)
contactEmail	Primary contact's email address
customersCnt	Number of referred customers
customersUri	URI of referred Customer resource collection
usersCnt	Number of child User resources
usersUri	URI of child User resource collection
groupsCnt	Number of child Group resources
groupsUri	URI of child Group resource collection
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.18 Resellers Resource

The Resellers resource gives information on entities that resell the Gateway's services. Each Reseller controls their own Customers and Merchant Accounts and can create their own Billing Plans etc. as required.

Resellers resources are root level resources.

A Resellers resource consists of the following fields:

Field Name	Description
id	Primary unique resource key
pid	Id of parent resource (always zero for Reseller resources)
type	Type of resource (always 'resellers')
ptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
resellerID	Primary unique resource key (same as 'id')
resellerUri	URI of resource (same as 'uri')
resellerName	Name of resource
tradingName	Name to use on invoices generated for Resellers Customers
website	Reseller's website
contactName	Primary contact's full name and title
contactPosition	Primary contact's position (i.e. 'Development Manager')
contactAddress1	Primary contact's address
contactAddress2	Primary contact's address (optional second line)
contactTown	Primary contact's address town/city
contactCounty	Primary contact's address county/region
contactPostcode	Primary contact's address postcode/zipcode
contactCountryCode	Primary contact's address country code (ISO-3166 code)
contactPhone	Primary contact's phone number (ITU-T E.164 format)

Field Name	Description
contactFax	Primary contact's fax number (ITU-T E.164 format)
contactEmail	Primary contact's email address
billingName	Billing contact's full name and title
billingPosition	Billing contact's position (i.e. 'Accountant')
billingAddress1	Billing contact's address
billingAddress2	Billing contact's address (optional second line)
billingTown	Billing contact's address town/city
billingCounty	Billing contact's address county/region
billingPostcode	Billing contact's address postcode/zipcode
billingCountryCode	Billing contact's address country code (ISO-3166 code)
billingCountryName	Billing contact's address country name
billingPhone	Billing contact's phone number (ITU-T E.164 format)
billingFax	Billing contact's fax number (ITU-T E.164 format)
billingEmail	Billing contact's email address
invoiceName	Invoice displayed name/Registered company name
invoiceRegRef	Invoice displayed company registration number
invoiceTaxRef	Invoice displayed tax registration number
invoiceAddress1	Invoice displayed company address
invoiceAddress2	Invoice displayed company address (optional second line)
invoiceTown	Invoice displayed address town/city
invoiceCounty	Invoice displayed address county/region
invoicePostcode	Invoice displayed address postcode/zipcode
invoiceCountryCode	Invoice displayed address country code (ISO-3166 code)
invoiceCountryName	Invoice displayed address country name
invoicePhone	Invoice displayed phone number (ITU-T E.164 format)
invoiceFax	Invoice displayed fax number (ITU-T E.164 format)
invoiceEmail	Invoice displayed email address
billingConfigEnabled	Automatic billing system enabled

Field Name	Description
billingConfigMerchantID	Id of Merchant account receiving customer billing payments
billingConfigMerchantUri	URI of Merchant account receiving customer billing payments
billingConfigMerchantName	Name of Merchant account receiving customer billing payments
billingConfigCustomerID	Id of Customer resource owning billing Merchant resource
billingConfigCustomerUri	URI of Customer resource owning billing Merchant resource
billingConfigCustomerName	Name of Customer resource owning billing Merchant resource
billingConfigTaxable	Default value for Customers.billingTaxable
billingConfigTaxRate	Rate of tax to use when charging Customers
billingConfigCardCapture	Capture card details when Customer pays to use for repeat payments
billingConfigSendReminders	Default value for Customers.billingSendReminders
billingConfigDisableOverdue	Disable automatic suspension of overdue Customers
billingConfigAcceptCheques	Show that cheques are accepted on Customer Invoices
referrersCnt	Number of child Referrer resources
referrersUri	URI of child Referrer resource collection
customersCnt	Number of child Customer resources
customersUri	URI of child Customer resource collection
usersCnt	Number of child User resources
usersUri	URI of child User resource collection
groupsCnt	Number of child Group resources
groupsUri	URI of child Group resource collection
billingPlansCnt	Number of child BillingPlan resources
billingPlansUri	URI of child BillingPlan resource collection
invoicesCnt	Number of child Customer Invoices resources
invoicesUri	URI of child Customer Invoices resource collection
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)

Field Name	Description
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.19 RtAgreements Resources

The RtAgreements resource contains information about all past, present and future RT agreements.

RtAgreements resources are child resources to the Customers resource they belong to.

An RtAgreements resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Customer resource
type	Type of resource (always 'addons')
ptype	Type of parent resource (always 'customers')
Uri	URI of resource
puri	URI of parent Customer resource
path	Hierarchical path to resource
text	Short textual description of the resource
rtAgreementID	Primary unique resource key (same as 'id')
rtAgreementUri	URI of resource (same as 'uri')
rtAgreementName	Name of agreement
customerID	Id of parent/ancestor Customer resource
customerUri	URI of parent/ancestor Customer resource
customerName	Name of parent/ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
merchantID	Id of Merchants Resource used to take payments
merchantName	Name Merchants Resource used to take payments
merchantUri	Uri of Merchants Resource used to take payments
cardID	Id of Cards resource used to take payments
cardName	Name of Cards resource used to take payments

Field Name	Description
cardUri	Uri of Cards resource used to take payments
walletID	Id of Cards resource's parent Wallets resource
walletName	Name of Cards resource's parent Wallets resource
walletUri	Uri of Cards resource's parent Wallets resource
description	Description of the agreement
baseTransactionID	Transaction id of base Transaction resource
baseTransactionUri	URI of base Transaction resource
baseTransactionXref	Cross reference of base Transaction resource
baseTransactionDate	Date the base Transaction was sent
policyRef	Recurring Transaction Policy Reference
startDate	Agreement start date (YYYY-MM-DD)
transactionUnique	Unique reference per transaction
method	Method (ECOM, MOTO or CA)
initialDate	Initial payment date (YYYY-MM-DD)
initialAmount	Initial payment amount (YYYY-MM-DD)
finalDate	Final payment date (YYYY-MM-DD)
finalAmount	Final payment amount (YYYY-MM-DD)
cycleAmount	Cost per billing cycle
cycleDuration	Plan cycle duration
cycleDurationUnit	Plan cycle duration unit. One of 'day', 'week', 'month', 'year'
cycleCount	Number of cycles plan last for
cycleRemainingCount	Number of cycles remaining in the current agreement
currencyCode	Currency the 'amount' are in (ISO 3 letter code, ie 'GBP')
currencyName	Descriptive name of the currency
currencySymbol	Symbol for the currency
currencyExponent	Exponent for the currency
currentCycleStartDate	Start date of the current cycle
currentCycleEndDate	End date of the current cycle

Field Name	Description
lastTrasactionID	ID of last recurring transaction
lastTransactionUri	URI of last recurring transaction was sent
lastTransactionXref	Cross reference of last recurring transaction (and used as xref of next transaction)
lastTransactionDate	Date the last recurring transaction was sent
paymentFailCount	Number of times recurring transaction has been retried
paymentFailMaxRetries	Number of times recurring transaction will be retried before giving up.
rtusEnabled	Recurring Transaction Update Service enabled. If enabled the card details will be checked for updates in card number and expiry date.
rtusMerchantID	Id of Merchants Resource used to make RTUS enquiries
rtusMerchantUri	Uri of Merchants Resource used to make RTUS enquiries
rtusMerchantName	Name Merchants Resource used to make RTUS enquiries
merchantData	Free format data (for merchants use)
state	State of the agreement. One of 'pending', 'running', 'pastdue', 'expired', 'stopped' or 'aborted'
responseCode	Response code of last recurring transaction
responseMsg	Response message of last recurring transaction
transactionCnt	Number of transactions made as part of this Subscription
transactionsUri	Uri to Transactions resource collection contain transactions made as part of this Subscription
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

4.20 RtusEnquiries Resources

The RtusEnquiries resource contains information about payment cards that should be submitted on behalf of a Merchant in the next Recurring Transaction Update Service enquiry. This service will query the card scheme for changes in the card number and expiry date and if any recurring transactions should be stopped on the card.

Wallet stored Cards can automatically be included in the next RTUS enquiry by setting their 'rtusEnabled' property, they will not be shown in the RtusEnquiries resource.

Likewise Wallet Cards stored used as payment for subscriptions will automatically be included.

RtusEnquiries resources are child resources to the Merchants resource they belong to.

A RtusEnquiries resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Customer resource
type	Type of resource (always 'rtusenquiries')
ptype	Type of parent resource (always 'customers')
Uri	URI of resource
puri	URI of parent Customers resource
path	Hierarchical path to resource
text	Short textual description of the resource
rtusEnquiryID	Primary unique resource key (same as 'id')
rtusEnquiryUri	URI of resource (same as 'uri')
merchantID	Id of parent Merchant resource
merchantUrl	URI of parent Merchant resource
merchantName	Name of parent Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource

Field Name	Description
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
cardsCsv	Card records in CSV format (see below)
cards	Card records in native format (see below)
totalCount	Total number of cards included in this enquiry
completedCount	Number of cards whose status has been checked
completedPercent	Percentage of cards whose status has been checked
updatedCount	Number of cards whose details have been updated
updatedPercent	Percentage of cards whose details have been updated
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions (to this resource) for the authenticated user

4.20.1 RtusEnquiries.CardsCsv Property

The payment cards can be included in the RtusEnquiries resource using the *cards* property or the *cardsCsv* property. The *cardsCsv* property expects a single string of data containing the contents of the CSV file used to upload/download the card details in the Merchant Management System (MMS).

The string should contain one or more CSV records separated by a new line character. The records should contain the following cells;

Cell Number	Description
1	Version identifier (always 'C1.1')
2	Card number (full PAN – 13-19 digits)
3	Card expiry date [MMYY] ²
4	Recurring Transaction (RT) Policy Ref [up to 20 characters] (optional)
5	Recurring Transaction (RT) Frequency [0-8] (optional)
6	Currency Code [180-4217 3 letter currency code] (optional)
7	Next transaction amount [11 digits implied 2 decimals] (optional)
8	Next transaction date [YYYY-MM-DD] (optional)
9	Originators data (free format)
11	New Card Number (if updated)
12	New Expiry Number [MMYY] ² (if updated)
13	Gateway response code (if updated)
14	Gateway response message (if updated)

² Card dates are specified month first unlike normal dates, they can be MMYY, MMYYYY and can optionally contain a hyphen (-) or forward slash (/) between the month and year components.

4.20.2 RtusEnquiries.Cards Property

The payment cards can be included in the RtusEnquiries resource using the *cards* property or the *cardsCsv* property. The *cards* property expects an array of card records. This is the more natural format for the interface as it allows a simple nested array type format..

The cards array should contain records with the follow fields;

Field Name	Description
number	Card number (full PAN – 13-19 digits)
expiryDate	Card expiry date [MMYY] ²
policyRef	Recurring Transaction (RT) Policy Ref [up to 20 characters] (optional)
transasctionFrequency	Recurring Transaction (RT) Frequency [0-8] (optional)
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
currencyCode	Currency Code [180-4217 3 letter currency code] (optional)
nextTranasctionAmount	Next transaction amount [11 digits implied 2 decimals] (optional)
nextTransactionDate	Next transaction date [YYYY-MM-DD] (optional)
data	Originators data (free format)
newNumber	New Card Number (if updated)
newExpiryDate	New Expiry Number [MMYY] ² (if updated)
responseCode	Gateway response code (if updated)
responseMessage	Gateway response message (if updated)

4.21 RtusFiles Resources

The RtusFiles resource contains information about communications with an Acquirer's Recurring Transaction Update Service.

This is a read only resource, the REST interface cannot be used to modify these resources.

RtusFiles resources are root resources and have no parent or child resources.

A RtusFiles resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent resource (always blank)
type	Type of resource (always 'rtusfiles')
ptype	Type of parent resource (always blank)
Uri	URI of resource
puri	URI of parent Wallet resource
path	Hierarchical path to resource
text	Short textual description of the resource
rtusFileID	Primary unique resource key (same as 'id')
rtusFileUri	URI of resource (same as 'uri')
rtusFileName	Name of resource
processorID	Id of associated Processor resource
processorUrl	URI of associated Processor resource
processorName	Name of associated Processor resource
date	Date the communications started
totalValue	Value of all amounts included
totalCount	Number of card enquiries included
updatedCount	Number of cards updated
outSentTime	Time the output file was successfully sent to the Acquirer
ackRecvTime	Time the acknowledgement file was received
rspRecvTime	Time the response file was received

Field Name	Description
dependentOnFileID	Id of RtusFile resource this one is dependent on
dependentOnFileUri	URI of RtusFile resource this one is dependent on
dependentOnFileName	Name of RtusFile resource this one is dependent on
dependentOnFileState	State of RtusFile resource this one is dependent on
state	Processing state (one of 'out', 'ack', 'rep', 'fin' or 'err')
responseCode	Response code of last processing stage
responseMessage	Response message for above responseCode
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions (to this resource) for the authenticated user

4.22 Secrets Resources

The Secrets resource contains information about a secrets piece of information stored in a shopper's wallet. A secret is stored encrypted and thus allows a Merchant to store information securely without having to deal with their own encryption systems and safe key handling.

Secrets should not be used to store card numbers but could be used to store other valuable information such as social security numbers, driving license numbers etc.

Secrets resources are child resources to the Wallets resource they belong to.

A Secrets resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Wallet resource
type	Type of resource (always 'secrets')
pptype	Type of parent resource (always 'wallets')
Uri	URI of resource
puri	URI of parent Wallet resource
path	Hierarchical path to resource
text	Short textual description of the resource
secretID	Primary unique resource key (same as 'id')
secretUri	URI of resource (same as 'uri')
secretName	Name of resource
walletID	Id of parent Wallet resource
walletUrl	URI of parent Wallet resource
walletName	Name of parent Wallet resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource

Field Name	Description
resellerName	Name of ancestor Reseller resource
description	Description of Secret
secret	Secret data, this will be encrypted on receipt and decrypted on return. It can be any value up to 32 kilobytes in length.
secretSize	Length of the secret data
data	Free format data (not encrypted)
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

4.23 SettlementFiles Resources

The SettlementFiles resource contains information about communications with an Acquirer's Settlement Service.

This is a read only resource, the REST interface cannot be used to modify these resources.

SettlementFiles resources are root resources and have no parent or child resources.

A SettlementFiles resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent resource (always blank)
type	Type of resource (always 'settlementfiles')
ptype	Type of parent resource (always blank)
Uri	URI of resource
puri	URI of parent Wallet resource
path	Hierarchical path to resource
text	Short textual description of the resource
settlementFileID	Primary unique resource key (same as 'id')
settlementFileUri	URI of resource (same as 'uri')
settlementFileName	Name of resource
processorID	Id of associated Processor resource
processorUrl	URI of associated Processor resource
processorName	Name of associated Processor resource
date	Date the communications started
totalValue	Value of all amounts included (creditValue + debitValue)
totalCount	Number of transactions included (creditCount + debitCount)
creditValue	Value of all credit transactions included
creditCount	Number of credit transactions included
debitValue	Value of all debit transactions included

Field Name	Description
debitCount	Number of debit transactions included
acceptedCount	Number of transactions accepted
rejectedCount	Number of transactions rejected
outSentTime	Time the output file was successfully sent to the Acquirer
ackRecvTime	Time the acknowledgement file was received
repRecvTime	Time the report file was received
dependentOnFileID	Id of RtusFile resource this one is dependent on
dependentOnFileUri	URI of RtusFile resource this one is dependent on
dependentOnFileName	Name of RtusFile resource this one is dependent on
dependentOnFileState	State of RtusFile resource this one is dependent on
state	Processing state (one of 'out', 'ack', 'rep', 'fin' or 'err')
responseCode	Response code of last processing stage
responseMessage	Response message for above responseCode
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions (to this resource) for the authenticated user

4.24 ThreeDSRequests Resources

The ThreeDSRequests resource gives information on a financial transaction which were sent to the 3-D Secure system. This resource provides auxiliary information to the main Transactions resource.

This is a read only resource, the REST interface cannot be used to modify these resources.

ThreeDSRequests resources are child resources to the Transactions resource to which they belong.

A ThreeDSRequest resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Transactions resource
type	Type of resource (always 'threedsrequest')
ptype	Type of parent Transactions resource (always 'transactions')
uri	URI of resource
puri	URI of parent Transactions resource
path	Hierarchical path to resource
text	Short textual description of the resource
threeDSRequestID	Primary unique resource key (same as 'id')
threeDSRequestUri	URI of resource (same as 'uri')
transactionID	Id of parent Transaction resource (same as 'pid')
transactionUri	URI of parent Transaction resource (same as 'puri')
merchantID	Id of ancestor Merchant resource
merchantUri	URI of ancestor Merchant resource
merchantName	Name of ancestor Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource

Field Name	Description
resellerName	Name of ancestor Reseller resource
action	The transaction action
method	The transaction method (ECOM, KEYED, SWIPED etc.)
amount	The transaction amount in decimal format
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
currencyNumber	ISO-4217 3 digit currency code
countryCode	ISO-3166 alpha3 country code
countryName	ISO-3166 country name
cardTypeCode	Code for card type (refer to 'Hosted Integration Guide')
cardTypeName	Description of card type (e.g. 'Visa Credit')
cardNumber	Card number (obfuscated if insufficient privileges)
cardNumberMask	Obfuscated card number
cardExpiryDate	Card expiry date (MMYY) (obfuscated if insufficient privileges)
threeDSAcquirerBIN	Acquirers 'Bank Identification Number' in the 3DS system
threeDSAcquirerMID	Acquirers 'Merchant Account Identifier' in the 3DS system
threeDSMerchantName	Name of Merchant as sent to the 3DS system
threeDSMerchantUrl	Website of Merchant as sent to the 3DS system
threeDSOrderDescription	Order description as sent to 3DS system
threeDSEnrolled	3D-Secure enrolment status
threeDSAuthenticated	3D-Secure authentication status
threeDSXID	Unique 3D-Secure transaction identifier
threeDSACSURL	URL of the 3D-Secure Access Control Server (ACS)
threeDSECI	3D-Secure Electronic Commerce Indicator (ECI) required
threeDSCAVV	3D-Secure Cardholder Authentication Verification Value (CAVV)
threeDSCAVVAlgorithm	Algorithm used to generate the 3D-Secure CAVV
threeDSIReqCode	Internal 3D-Secure error code

Field Name	Description
threeDSIReqDetail	Internal 3D-Secure error details
threeDSVendorCode	Internal 3D-Secure vendor code
threeDSErrorCode	Error response code received during the 3D-Secure processing
threeDSErrorDescription	Description of ' threeDSErrorCode '
threeDSResponseCode	Gateway response code for 3D-Secure process
threeDSResponseMessage	Gateway response message for 3D-Secure process
threeDSVeReq	Verification Request sent to 3D-Secure DS
threeDSVeRes	Verification Response received from 3D-Secure DS
threeDSPaReq	Payer Authentication Request sent to 3D-Secure ACS
threeDSPaRes	Payer Authentication Response received from 3D-Secure ACS
threeDSOrigin	Original request received
threeDSVETime	Time the 3D-Secure Verify Enrolment request was made
threeDSCATime	Time the 3D-Secure Check Authentication request was made
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions for the authenticated user

4.25 Transactions Resources

The Transactions resource gives information on a financial transaction made on a Merchant Account.

This is a read only resource, the REST interface cannot be used to modify these resources.

Transactions resources are child resources to the Merchant resource that made the transaction.

A Transaction resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'transactions')
pptype	Type of parent Merchants resource (always 'merchants')
uri	URI of resource
puri	URI of parent Merchants resource
path	Hierarchical path to resource
text	Short textual description of the resource
transactionID	Primary unique resource key (same as 'id')
transactionUri	URI of resource (same as 'uri')
merchantID	Id of parent Merchant resource (same as 'pid')
merchantUri	URI of parent Merchant resource (same as 'puri')
merchantName	Name of parent Merchant resource
customerID	Id of ancestor Customer resource
customerUri	URI of ancestor Customer resource
customerName	Name of ancestor Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
userID	Id of user who submitted the transaction
userUri	URI of user who submitted the transaction
userName	Name of user who submitted the transaction
aliasID	Id of alias used to authenticate this transaction
aliasUri	URI of alias used to authenticate this transaction
aliasName	Name of alias used to authenticate this transaction
translatorID	Id of translation engine this transaction was received from
translatorUri	URI of translation engine this transaction was received from
translatorName	Name of translation engine this transaction was received from

processorID	Id of processing engine this transaction was sent to
processorUri	URI of processing engine this transaction was sent to
processorName	Name of processing engine this transaction was sent to
xref	Transaction cross reference
action	The transaction action
method	The transaction method (ECOM, KEYED, SWIPED etc.)
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
currencyNumber	ISO-4217 3 digit currency code
countryCode	ISO-3166 alpha3 country code
countryName	ISO-3166 country name
amount	The amount in decimal format
netAmount	The net amount in decimal format
grossAmount	The gross amount in decimal format
taxAmount	The tax amount in decimal format
taxRate	The tax rate as a percentage
taxReason	The reason the tax was applied
discountAmount	The discount amount applied in decimal format
discountReason	The reason the discount was applied
taxDiscountReason	Tax reason if tax amount is none zero, else discount reason
transactionUnique	Unique identifier sent with the transaction
statementNarrative1	Line to show on card holder's statement
statementNarrative2	Line to show on card holder's statement
orderRef	Order reference sent with the transaction
cardNumber	Card number (obfuscated if insufficient privileges)
cardNumberMask	Obfuscated card number
cardTypeCode	Code for card type (refer to 'Hosted Integration Guide')
cardTypeName	Description of card type (e.g. 'Visa Credit')

cardExpiryDate	Card expiry date (MMYY) (obfuscated if insufficient privileges)
cardStartDate	Card start date (MMYY) (obfuscated if insufficient privileges)
cardIssueNumber	Card issue number (obfuscated if insufficient privileges)
cardCVV	Card security code number (obfuscated if insufficient privileges)
cardID	Internal Gateway identifier for the card
cardHolderName	Name of card holder
cardHolderAddress	Postal address of card holder
cardHolderPostcode	Postcode of card holder
cardHolderEmail	Email address of card holder
cardHolderPhone	Telephone number of card holder
avscv2CheckEnabled	AVS/CV2 checking is enabled on the Merchant account
avscv2CheckRequired	AVS/CV2 checking is required on this Transaction
cv2CheckPref	Allowed values for cardCVV check
addressCheckPref	Allowed values for cardHolderAddress check
postcodeCheckPref	Allowed valued for cardHolderPostcode check
avscv2ResponseCode	The result of the AVS/CV2 check
avscv2ResponseMessage	The result of the AVS/CV2 check
avscv2AuthEntity	Entity that performed the AVS/CV2 checks
cv2Check	Result of cardCVV check
addressCheck	Result of cardHolderAddress check
postcodeCheck	Result of cardHolderPostcode check
threeDSEnabled	Merchant is 3D-Secure enabled ('Y', 'N')
threeDSRequired	3D-Secure processing was required for this transaction
threeDSOnly	3D-Secure processing only was required for this transaction
threeDSCheckPref	Allowed values for threeDSCheck check
threeDSEnrolled	3D-Secure enrolment status
threeDSAuthenticated	3D-Secure authentication status
threeDSXID	Unique 3D-Secure transaction identifier
threeDSECI	3D-Secure Electronic Commerce Indicator (ECI) required

threeDSCAVV	3D-Secure Cardholder Authentication Verification Value (CAVV)
threeDSCAVVAlgorithm	Algorithm used to generate the 3D-Secure CAVV
threeDSCheck	Result of 3D-Secure check
threeDSRequestID	ID of any associated threeDSRequest resource
threeDSRequestUri	URI of any associated threeDSRequest resource
previousID	ID of any associated Transaction resource
previousUri	URI of any associated Transaction resource
walletID	ID of any associated Wallet resource
walletUri	URI of any associated Wallet resource
cardholderAddressID	ID of any associated Address resource
cardholderAddressUri	URI of any associated Address resource
deliveryAddressID	ID of any associated Address resource
deliveryAddressUri	URI of any associated Address resource
purchaseDetailID	ID of any PurchaseDetail resource
purchaseDetailUri	URI of any PurchaseDetail resource
purchaseItemsCnt	Count of associated PurchaseItem resources
purchaseItemsUri	URI of associated PurchaseItem resources
captureDelay	Delay in days before authorisation is captured
duplicateDelay	Delay in seconds before transaction can be duplicated
remoteIpAddress	IP address where transaction originated from
redirectURL	URL to hosted form transaction returned to on completion
callbackURL	URL called with results of transaction
origin	Original transaction data received by translation engine
merchantData	Raw data sent by merchant to be stored with transaction
amountApproved	Amount that was authorised
amountReceived	Amount that was captured (and will therefore be received)
customerReceiptsRequired	Customer receipt was required for this transaction
customerReceiptResponseCode	Outcome of sending the customer receipt
customerReceiptResponseMessage	Description of 'customerReceiptResponseCode'

notifyEmailRequired	Merchant notification email was required for this transaction
nofiyEmail	Merchant notification email address used
notifyEmailResponseCode	Outcome of sending the merchant notification email
notifyEmailResponseMessage	Description of 'notifyEmailResponseCode'.
eReceiptsEnabled	eReceipts is enabled for this Merchant Account
eReceiptsApiKey	eReceipts default API key
eReceiptsApiSecret	eReceipts default API Secret
eReceiptsStoreID	eReceipts default Store ID
eRexeiptsApiKey	eReceipts API key
eReceiptsCustomerRef	eReceipts Customer reference
eReceiptsReceiptRef	eReceipts receipt reference
eReceiptsReceiptData	eReceipts receipt pre-prepared data
eReceiptsResponseCode	Outcome of sending the merchant notification email
eReceiptsResponseMessage	Description of 'eReceiptsResponseCode'.
eReceiptsReceiptUri	URI to eReceipts receipt data
state	State of the transaction
authorisationCode	Acquirer issued authorisation code
responseCode	Outcome of the transaction
responseMessage	Description of 'responseCode' or authorization code.
authenticatedTime	Time the transaction was sent for authentication
authorisedTime	Time the transaction was sent for 3DS authorisation
capturedTime	Time the transaction was last captured
settledTime	Time the transaction was last sent for settlement
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
perms	Resource permissions for the authenticated user

4.26 Translators Resources

The Translator resource is used to describe a translation engine used to translate an incoming transaction request from some foreign format such as WordPay© into the Gateway's native format.

Translation engines allow a quick way for Merchants to move from away from other providers due to not having to change the format of the messages they send.

The Translation engine often works closely with the Merchant Alias facility which allows foreign authentication details to be used to authenticate as a particular Merchant.

This is a read only resource, the REST interface cannot be used to modify these resources.

Translator resources are root resources and have no parent or child resources.

A Translator resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'translators')
pptype	Type of parent resource (always blank)
uri	URI of resource
puri	URI of parent resource (always blank)
path	Hierarchical path to resource
text	Short textual description of the resource
translatorID	Primary unique resource key (same as 'id')
translatorUri	URI of resource (same as 'uri')
translatorName	Name of resource
perms	Resource permissions for the authenticated user

4.27 Users Resources

The Users resource gives information on a user or login account. These accounts are used to authenticate to the various Gateway applications.

A Users resource contains authentication information and details on account lock outs, password expiry and login statistics.

Users resources are child resources to the Resellers, Referrers, Customers and Merchants resources allowing those entities login access to the system.

They can also exist with no parent resource in which case they are root administration users.

A Users resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Reseller resource
type	Type of resource (always 'users')
pptype	Type of parent resource (either blank, 'resellers', 'referrers', 'customers', or 'merchants')
uri	URI of resource
puri	URI of parent resource
path	Hierarchical path to resource
text	Short textual description of the resource
userID	Primary unique resource key (same as 'id')
userUri	URI of resource (same as 'uri')
username	Name of resource
merchantID	Id of any parent Merchant resource (same as 'pid')
merchantUri	URI of any parent Merchant resource (same as 'puri')
merchantName	Name of any parent Merchant resource
customerID	Id of any parent or ancestor Customer resource
customerUri	URI of parent or ancestor Customer resource
customerName	Name of parent or ancestor Customer resource
referrerID	Id of parent Referrer resource

Field Name	Description
referrerUri	URI of parent Referrer resource
referrerName	Name of parent Referrer resource
resellerID	Id of parent or ancestor Reseller resource
resellerUri	URI of parent or ancestor Reseller resource
resellerName	Name of parent or ancestor Reseller resource
userType	Type of user (one of 'admin', 'reseller', 'referrer', 'customer' or 'merchant')
fullName	Full name and title for this user
timeZone	Timezone of user
password	Password used to authenticate this user (obfuscated on read)
passwordModifyTime	Time password was last modified
passwordExpiryTime	Time password expires and must be changed
loginTime	Time account was last successfully logged in
loginFailTime	Time account was last unsuccessfully logged in
loginFailCount	Number of failed login attempts (since reset)
loginFailMax	Number of failed logins allowed before account locked
loginFailPeriod	Period account is locked for is loginFailMax is reached
loginFailLocked	Account is locked out due to failed login attempts
loginFailExpiryTime	Time lock fail lock will be reset and login can be re-attempted
groups	List of Group resource primary ids the user is a member of
groupNames	List of Group resource names the user is a member of
groupsCnt	Number of joined Groups resources
groupsUri	URI of joined Groups resource collection
transactionsCnt	Number of Transactions recorded as made by this User
transactionsUri	URI of Transactions resource collection
termsAcceptedTime	Time the terms of conditions were accepted
acl	Access Control List for this user
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)

Field Name	Description
status	Resource status 'active' or 'inactive'
perms	Resource permissions for the authenticated user

4.28 VcRules Resources

The VcRules resource contains information about all Velocity Check Rules available to the accessing user.

VcRules are owned by either Resellers or Customers but can be related to Merchant Accounts.

A VcRules resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Customer or Reseller resource
type	Type of resource (always 'addons')
ptype	Type of parent resource (either 'customers' or 'resellers')
Uri	URI of resource
puri	URI of parent Customer or Reseller resource
path	Hierarchical path to resource
text	Short textual description of the resource
vcRuleID	Primary unique resource key (same as 'id')
vcRuleUri	URI of resource (same as 'uri')
vcRuleName	Name of agreement
customerID	Id of parent/ancestor Customer resource
customerUri	URI of parent/ancestor Customer resource
customerName	Name of parent/ancestor Customer resource
resellerID	Id of parent/ancestor Reseller resource
resellerUri	URI of parent/ancestor Reseller resource
resellerName	Name of parent/ancestor Reseller resource
description	Description of the agreement
ruleType	Rule type. One of 'count' or 'value'.
threshold	Counter maximum (threshold)
window	Counter window in minutes. Maximum 44,640 (31 days).

Field Name	Description
grouping	Grouping properties. Comma separated list of transaction property names.
action	Action taken if threshold is exceeded. Comma separated list of one or more of the values; 'email', 'decline'.
emailAddress	Comma separated list of email mailboxes.
merchantID	Id any Merchants Resource requirement
merchantName	Name of any Merchants Resource requirement
merchantUri	Uri of any Merchants Resource requirement
currencyCode	ISO-4217 3 character currency code
currencyName	ISO-4217 currency name
currencySymbol	ISO-4217 currency symbol
currencyExponent	Exponent for the currency
purpose	Purpose of transaction. One of 'sale', 'refund', 'verify'
outcome	Outcome of transaction. One of 'success', 'failure'.
triggerCnt	Number of times the rule has been triggered since reset
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

4.29 Wallets Resources

The Wallets resource contains information about a shopper's wallet.

Wallets resources are child resources to the Customers resource they belong to.

A Wallets resource consists of the following fields;

Field Name	Description
id	Primary unique resource key
pid	Id of parent Customer resource
type	Type of resource (always 'wallets')
ptype	Type of parent resource (always 'customers')
Uri	URI of resource
puri	URI of parent Customer resource
path	Hierarchical path to resource
text	Short textual description of the resource
walletID	Primary unique resource key (same as 'id')
walletUri	URI of resource (same as 'uri')
walletName	Name of resource
customerID	Id of parent Customer resource
customerUri	URI of parent Customer resource
customerName	Name of parent Customer resource
resellerID	Id of ancestor Reseller resource
resellerUri	URI of ancestor Reseller resource
resellerName	Name of ancestor Reseller resource
description	Description of Card
cardID	Id of default Card stored in this Wallet
cardUri	URI of default Card stored in this Wallet
cardName	Name of default Card stored in this Wallet
cardDescription	Description of default Card stored in this Wallet

Field Name	Description
cardTypeCode	Code identifying particular Card type
cardTypeName	Descriptive name of Card type
cardHolder	Card holders name (as printed on card)
cardNumber	Card number (full PAN – spaces between digits is ignored). This will contain the 'mask' on reading unless the called has permission to extract card numbers.
cardToken	Token number which can be used instead of the card number to in transactions. The Token number will look like a real card number and will have the same last 4 digits of the actual card number.
cardMask	A masked representation of the card number.
cardExpiryDate	Card expiry date (MMYY format)
cardStartDate	Card start date where used (MMYY format)
cardIssueNumber	Card issue number where used
cardDuplicatesAllowed	Allow duplicates of this card number to be stored in the same Wallet. Reserved for future use.
addressID	Id of Address resource linked to this Card (billing address)
addressUri	URI of Address resource linked to this Card (billing address)
addressName	Name of Address resource linked to this Card (billing address)
addressDescription	Description of Address resource linked to this Card
addressContact	Contact's full name and title
addressCompany	Company Name
addressStreet	Postal Street (can be multiple lines)
addressTown	Postal town
addressCounty	Postal county/region
addressPostcode	Postal postcode/zipcode
addressCountryCode	Country code (ISO-3166 2 letter code)
addressCountryName	Country name (readonly)
addressPhone	Contact's phone number (ITU-T E.164 format)
addressFax	Contact's fax number (ITU-T E.164 format)
addressMobile	Contact's mobile number (ITU-T E.164 format)

Field Name	Description
addressEmail	Contact's email address
addressesCnt	Number of child Address resources
addressesUri	URI of child Address resource collection
cardsCnt	Number of child Card resources
cardsUri	URI of child Card resource collection
secretsCnt	Number of child Secret resources
secretsUri	URI of child Secret resource collection
data	Free format data
createTime	Time the resource was created (UTC)
modifyTime	Time the resource was modified (UTC)
status	Resource status 'active' or 'inactive'
perms	Resource permissions (to this resource) for the authenticated user

A-1 CSV Encoding/Decoding

The rest interface supports data sent using CSV records in addition to the normal XML, PHP, JSON encodings. Unfortunately CSV doesn't natively support the encoding of complex records and nested records.

CSV output encoding however is useful for importing columns of information into spreadsheets etc. and therefore this encoding method is supported to ease such usage.

To overcome the restrictions of the CSV format the interface encodes information about the data structures and hierarchy within the CSV records.

By default all resource records and other data structures are mapped to individual CSV records with the first 4 columns of the record having the following meaning;

Cell Number	Description
1	Rest Indicator (always '#'). This indicates that the record has been generated with the encoding as opposed to some random CSV file being sent.
2	Schema Identifier – this gives the numeric id of the records structure. It identifies a CSV record in the data whose values contain the element names for the actual data held in this records columns
3	Record identifier – this gives the numeric id of the data structure giving this records place in the data hierarchy
4	Index number – this gives the numeric index number if this record is part of a numerically indexed array of records
5...	The remain cells are the actual data structures values or if cell 3 and 4 are empty the remaining cells contain the names of the data structure elements for this given schema identifier given in cell 2

In addition to CSV records starting with '#' in the first cell as above, certain cell values are also encoded and prefixed with a '#' as follows;

Cell Format	Description
# { <i>N</i> }	The actual data for this cell is the structure which is stored as the CSV record whose Record Identifier (Cell 3) is the number <i>N</i>
# [<i>N</i>]	The actual data for the cell is an array of structures which are stored in the CSV records whose Record Identifier (Cell 3) is the number <i>N</i> . Their actual index in the array is given by the CSV records Index Number (Cell 4)
# (<i>N</i>)	The actual data for the cell is an array containing the cell values stored in the CSV records whose Record Identifier (Cell 3) is the number <i>N</i> . Their actual index in the array is number of the cell (excluding the first 4 cells, so cell 5 is index 0, cell 6 is index 1, etc.)
# [[<i>SET</i>]]	The actual data for the cell is a short array given by the comma separated values in <i>SET</i> . The cell data can only contain simple data values and is not CSV encoded, so the values will never contain commas themselves. To encode an sequential array of string values which may contain a large number of values or values containing commas or quotes etc. the <i>#(N)</i> encoding format must be used.
# #XXXXXX	The data for the cell is the value of the cell with the first '#' removed. This is used to replace cells that may start with a '#' so that they do not get mistaken for one of the above encodings.