**TM Forum Specification**

**Payment Management API User Guide**

**TMF676**

**Team Approved Date: 29-Jul-2020**

|  |  |
| --- | --- |
| **Release Status: Pre-production** | **Approval Status: Team Approved** |
| **Version 4.0.0** | **IPR Mode: RAND** |

NOTICE

Copyright © TM Forum 2020. All Rights Reserved.

This document and translations of it may be copied and furnished to others, and derivative works that comment on or otherwise explain it or assist in its implementation may be prepared, copied, published, and distributed, in whole or in part, without restriction of any kind, provided that the above copyright notice and this section are included on all such copies and derivative works. However, this document itself may not be modified in any way, including by removing the copyright notice or references to TM FORUM, except as needed for the purpose of developing any document or deliverable produced by a TM FORUM Collaboration Project Team (in which case the rules applicable to copyrights, as set forth in the [TM FORUM IPR Policy](http://www.tmforum.org/IPRPolicy/11525/home.html), must be followed) or as required to translate it into languages other than English.

The limited permissions granted above are perpetual and will not be revoked by TM FORUM or its successors or assigns.

This document and the information contained herein is provided on an "AS IS" basis and TM FORUM DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY OWNERSHIP RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Direct inquiries to the TM Forum office:

4 Century Drive, Suite 100

Parsippany, NJ 07054, USA

Tel No. +1 973 944 5100

Fax No. +1 973 998 7196

TM Forum Web Page: [www.tmforum.org](http://www.tmforum.org/)

Table of Contents

[NOTICE 2](#_Toc47012415)

[Table of Contents 3](#_Toc47012416)

[List of Tables 5](#_Toc47012417)

[Introduction 6](#_Toc47012418)

[SAMPLE USE CASES 7](#_Toc47012419)

[Support of polymorphism and extension patterns 8](#_Toc47012420)

[RESOURCE MODEL 9](#_Toc47012421)

[Managed Entity and Task Resource Models 9](#_Toc47012422)

[Payment resource 9](#_Toc47012423)

[Refund resource 15](#_Toc47012424)

[Notification Resource Models 21](#_Toc47012425)

[Payment Create Event 22](#_Toc47012426)

[Payment Attribute Value Change Event 23](#_Toc47012427)

[Payment State Change Event 23](#_Toc47012428)

[Payment Delete Event 23](#_Toc47012429)

[Refund Create Event 24](#_Toc47012430)

[Refund Attribute Value Change Event 24](#_Toc47012431)

[Refund State Change Event 25](#_Toc47012432)

[Refund Delete Event 25](#_Toc47012433)

[API OPERATIONS 26](#_Toc47012434)

[Operations on Payment 26](#_Toc47012435)

[List payments 26](#_Toc47012436)

[Retrieve payment 33](#_Toc47012437)

[Create payment 36](#_Toc47012438)

[Operations on Refund 40](#_Toc47012439)

[List refunds 40](#_Toc47012440)

[Retrieve refund 43](#_Toc47012441)

[Create refund 44](#_Toc47012442)

[API NOTIFICATIONS 48](#_Toc47012443)

[Register listener 48](#_Toc47012444)

[Unregister listener 49](#_Toc47012445)

[Publish Event to listener 49](#_Toc47012446)

[Acknowledgements 51](#_Toc47012447)

[Version History 51](#_Toc47012448)

[Release History 51](#_Toc47012449)

List of Tables

N/A

Introduction

The following document is the specification of the REST API for Payments. It includes the model definition as well as all available operations for payments and refunds.

This API allows the following operations

• Notify of a performed payment

• Retrieve a list of payments filtered by a given criteria

• Retrieve a single performed payment

• Notify of a performed refund

• Retrieve a list of refunds filtered by a given criteria

• Retrieve a single performed refund

# SAMPLE USE CASES

This section includes a set of main use cases that can be performed with this API. Additional use cases can be generated using the operations and resources defined in this specification.

• Request a list of performed payments stored on a server filtered by different criteria

• Request a specific payment stored on a server

• Notify of a new performed payment

• Request a list of performed refunds stored on a server filtered by different criteria

• Request a specific refund stored on a server

• Notify of a new performed refund

Note that typically refunds that undo a payment will be applied to the same payment method that was used to perform it.

# Support of polymorphism and extension patterns

Support of polymorphic collections and types and schema based extension is provided by means of a list of generic meta-attributes that we describe below. Polymorphism in collections occurs when entities inherit from base entities, for instance a BillingAccount and SettlementAccount inheriting properties from the abstract Account entity.

Generic support of polymorphism and pattern extensions is described in the TMF API Guidelines v3.0 Part 2 document.

The @type attribute provides a way to represent the actual class type of an entity. For example, within a list of Account instances some may be instances of BillingAccount where other could be instances of SettlementAccount. The @type gives this information. All resources and sub-resources of this API have a @type attributes that can be provided when this is useful.

The @referredType can be used within reference entities (like for instance an AccountRef object) to explicitly denote the actual entity type of the referred class. Notice that in reference entities the @type, when used, denotes the class type of the reference itself, such as BillingAccountRef or SettlementAccountRef, and not the class type of the referred object. However since reference classes are rarely sub-classed, @type is generally not useful in reference objects.

The @schemaLocation property can be used in resources to allow specifying user-defined properties of an Entity or to specify the expected *characteristics* of an entity.

The @baseType attribute gives a way to provide explicitly the base of class of a given resource that has been extended.

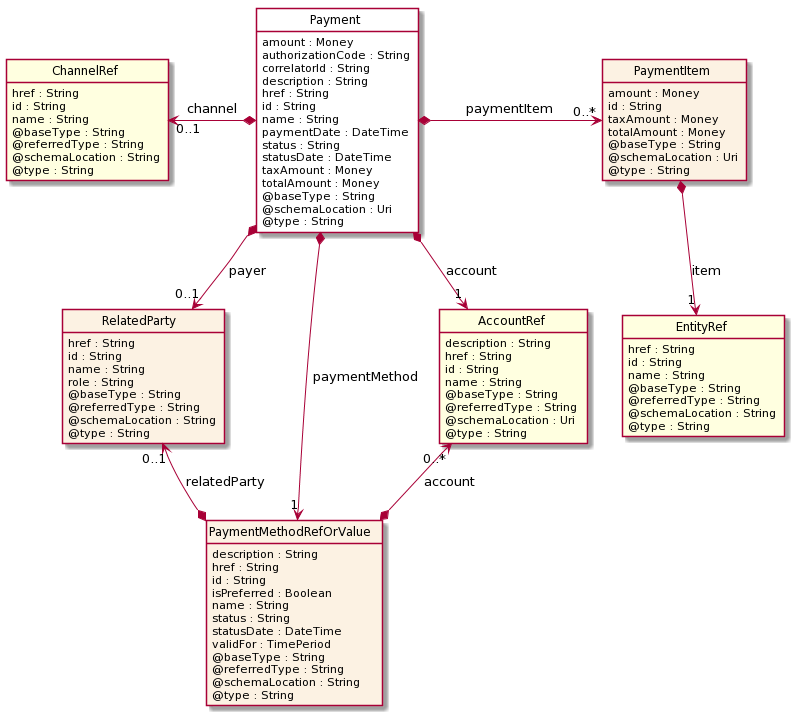
# RESOURCE MODEL

## Managed Entity and Task Resource Models

### Payment resource

The Payment resource represents a performed payment. It contains both information about the payment and the payment method used to perform it.

**Resource model**



**Field descriptions**

*Payment* fields

|  |  |
| --- | --- |
| account | An account reference (AccountRef). A account may be a party account or a financial account. |
| amount | A money (Money). Amount to be paid (net of taxes). |
| authorizationCode | A string. Authorization code retrieved from an external payment gateway that could be used for conciliation. |
| channel | A channel reference (ChannelRef). The channel to which the resource reference to. e.g. channel for selling product offerings, channel for opening a trouble ticket etc.. |
| correlatorId | A string. Unique identifier in the client for the payment in case it is needed to correlate. |
| description | A string. Text describing the contents of the payment. |
| href | A string. Hypertext Reference of the Payment. |
| id | A string. Unique identifier of Payment. |
| name | A string. Screen name of the payment. |
| payer | A related party (RelatedParty). Related Entity reference. A related party defines party or party role linked to a specific entity. |
| paymentDate | A date time (DateTime). Date when the payment was performed. |
| paymentItem | A list of payment items (PaymentItem [\*]). The paymentItem is the result of lettering process. It enables to assign automatically or manually part of incoming payment amount to a bill. |
| paymentMethod | A payment method ref or value (PaymentMethodRefOrValue). link to the resource that holds information about the payment mean used to complete the operation. |
| status | A string. Status of the payment. |
| statusDate | A date time (DateTime). Date when the status was recorded. |
| taxAmount | A money (Money). Tax applied. |
| totalAmount | A money (Money). Amount to be paid (including taxes). |

*Money* sub-resource

A base / value business entity used to represent money.

|  |  |
| --- | --- |
| unit | A string. Currency (ISO4217 norm uses 3 letters to define the currency). |
| value | A float. A positive floating point number. |

*PaymentItem* sub-resource

The paymentItem is the result of lettering process. It enables to assign automatically or manually part of incoming payment amount to a bill.

|  |  |
| --- | --- |
| amount | A money (Money). Amount to be paid (net of taxes). |
| id | A string. Unique identifier of the payment Item. |
| item | An entity reference (EntityRef). Entity reference schema to be use for all entityRef class. |
| taxAmount | A money (Money). Tax applied. |
| totalAmount | A money (Money). Amount to be paid (including taxes). |

*PaymentMethodRefOrValue* sub-resource

link to the resource that holds information about the payment mean used to complete the operation.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Friendly name assigned to the payment method. |
| href | A string. A resource URI pointing to the resource in the server that stores the detailed information. This is typically the resource url to retrieve individual details for the specific payment method. |
| id | A string. Unique Identifier within the server for the payment method. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |
| description | A string. Text describing the contents of the payment method. |
| isPreferred | A boolean. If the method is the preferred one by the owner. Typically used when querying for the payment methods of a specific customer or account. |
| status | A string. |
| statusDate | A date time (DateTime). |
| account | A list of account references (AccountRef [\*]). A account may be a party account or a financial account. |
| relatedParty | A related party (RelatedParty). Related Entity reference. A related party defines party or party role linked to a specific entity. |
| validFor | A time period. Date interval in which the payment method is valid. |

*RelatedParty* sub-resource

Related Entity reference. A related party defines party or party role linked to a specific entity.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Name of the related entity. |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |
| role | A string. Role played by the related party. |

*AccountRef* relationship

Account reference. A account may be a party account or a financial account.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| description | A string. Detailed description of the account. |
| href | A string. Reference of the account. |
| id | A string. Unique identifier of the account. |
| name | A string. Name of the account. |

*ChannelRef* relationship

The channel to which the resource reference to. e.g. channel for selling product offerings, channel for opening a trouble ticket etc..

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Name of the channel. |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |

*EntityRef* relationship

Entity reference schema to be use for all entityRef class.

|  |  |
| --- | --- |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Name of the related entity. |

**Json representation sample**

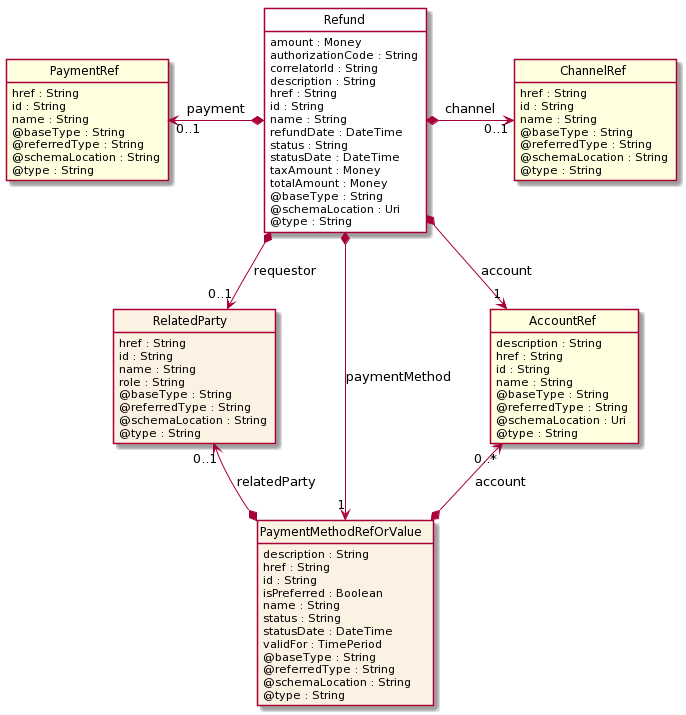
We provide below the json representation of an example of a 'Payment' resource object

|  |
| --- |
| {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "correlatorId": "67890",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example",  "description": "a payment example",  "status": "done",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "@referredType": "CustomerBill",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "id": "15492MIFB865654",  "href": "https://host:port/paymentMethodManagement/v4/voucher/15492MIFB865654",  "@referredType": "Voucher",  "@type": "PaymentMethodRef"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  } } |

### Refund resource

The Refund resource represents a performed Refund. It contains both information about the refund and the payment method used to perform it.

**Resource model**



**Field descriptions**

*Refund* fields

|  |  |
| --- | --- |
| account | An account reference (AccountRef). A account may be a party account or a financial account. |
| amount | A money (Money). Amount to be refunded (net of taxes). |
| authorizationCode | A string. Authorization code retrieved from an external payment gateway that could be used for conciliation. |
| channel | A channel reference (ChannelRef). The channel to which the resource reference to. e.g. channel for selling product offerings, channel for opening a trouble ticket etc.. |
| correlatorId | A string. Unique identifier in the client for the refund in case it is needed to correlate. |
| description | A string. Text describing the contents of the refund. |
| href | A string. Hypertext Reference of the refund. |
| id | A string. Unique identifier of Refund. |
| name | A string. Screen name of the refund. |
| payment | A payment reference (PaymentRef). If an immediate payment has been done at the product order submission, the payment information are captured and stored (as a reference) in the order. |
| paymentMethod | A payment method ref or value (PaymentMethodRefOrValue). link to the resource that holds information about the payment mean used to complete the operation. |
| refundDate | A date time (DateTime). Date when the refund was performed. |
| requestor | A related party (RelatedParty). Related Entity reference. A related party defines party or party role linked to a specific entity. |
| status | A string. Status of the refund. |
| statusDate | A date time (DateTime). Date when the status was recorded. |
| taxAmount | A money (Money). Tax applied. |
| totalAmount | A money (Money). Amount to be paid (including taxes). |

*Money* sub-resource

A base / value business entity used to represent money.

|  |  |
| --- | --- |
| unit | A string. Currency (ISO4217 norm uses 3 letters to define the currency). |
| value | A float. A positive floating point number. |

*PaymentMethodRefOrValue* sub-resource

link to the resource that holds information about the payment mean used to complete the operation.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Friendly name assigned to the payment method. |
| href | A string. A resource URI pointing to the resource in the server that stores the detailed information. This is typically the resource url to retrieve individual details for the specific payment method. |
| id | A string. Unique Identifier within the server for the payment method. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |
| description | A string. Text describing the contents of the payment method. |
| isPreferred | A boolean. If the method is the preferred one by the owner. Typically used when querying for the payment methods of a specific customer or account. |
| status | A string. |
| statusDate | A date time (DateTime). |
| account | A list of account references (AccountRef [\*]). A account may be a party account or a financial account. |
| relatedParty | A related party (RelatedParty). Related Entity reference. A related party defines party or party role linked to a specific entity. |
| validFor | A time period. Date interval in which the payment method is valid. |

*RelatedParty* sub-resource

Related Entity reference. A related party defines party or party role linked to a specific entity.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Name of the related entity. |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |
| role | A string. Role played by the related party. |

*AccountRef* relationship

Account reference. A account may be a party account or a financial account.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| description | A string. Detailed description of the account. |
| href | A string. Reference of the account. |
| id | A string. Unique identifier of the account. |
| name | A string. Name of the account. |

*ChannelRef* relationship

The channel to which the resource reference to. e.g. channel for selling product offerings, channel for opening a trouble ticket etc..

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. Name of the channel. |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |

*PaymentRef* relationship

If an immediate payment has been done at the product order submission, the payment information are captured and stored (as a reference) in the order.

|  |  |
| --- | --- |
| @referredType | A string. The actual type of the target instance when needed for disambiguation. |
| name | A string. A name for the payment. |
| href | An uri (Uri). Hyperlink reference. |
| id | A string. unique identifier. |
| @baseType | A string. When sub-classing, this defines the super-class. |
| @schemaLocation | An uri (Uri). A URI to a JSON-Schema file that defines additional attributes and relationships. |
| @type | A string. When sub-classing, this defines the sub-class Extensible name. |

**Json representation sample**

We provide below the json representation of an example of a 'Refund' resource object

|  |
| --- |
| {  "id": "23456",  "href": "https://host:port/paymentManagement/v4/refund/23456",  "name": "Example of a Refund resource",  "description": "Refund due to order 666 cancellation",  "correlatorId": "67890",  "refundDate": "2020-01-11T12:06:38.230Z",  "status": "authorized",  "statusDate": "2020-01-11T12:10:38.230Z",  "@type": "Refund",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "description": "bank card",  "@type": "bankCard",  "brand": "MasterCard",  "type": "Debit",  "cardNumber": "00000000000000000",  "expirationDate": "2025-01-01T12:00:00Z",  "cvv": "123",  "nameOnCard": "Mr Michel Valette",  "bank": "Imaginary Bank.inc"  },  "payment": {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "name": "Some payment",  "description": "Payment related to this refund",  "@type": "PaymentRef"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  } } |

## Notification Resource Models

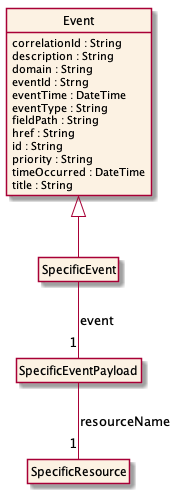
8 notifications are defined for this API

Notifications related to Payment:  
 - PaymentCreateEvent  
 - PaymentAttributeValueChangeEvent  
 - PaymentStateChangeEvent  
 - PaymentDeleteEvent

Notifications related to Refund:  
 - RefundCreateEvent  
 - RefundAttributeValueChangeEvent  
 - RefundStateChangeEvent  
 - RefundDeleteEvent

The notification structure for all notifications in this API follow the pattern depicted by the figure below.  
A notification event resource (depicted by "SpecificEvent" placeholder) is a sub class of a generic Event structure containing at least an id of the event occurrence (eventId), an event timestamp (eventTime), and the name of the resource (eventType).

This notification structure owns an event payload structure ("SpecificEventPayload" placeholder) linked to the resource concerned by the notification using the resource name as access field ("resourceName" placeholder).



### Payment Create Event

Notification PaymentCreateEvent case for resource Payment

**Json representation sample**

We provide below the json representation of an example of a 'PaymentCreateEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"PaymentCreateEvent",  "event": {  "payment" :   {-- SEE Payment RESOURCE SAMPLE --}  } } |

### Payment Attribute Value Change Event

Notification PaymentAttributeValueChangeEvent case for resource Payment

**Json representation sample**

We provide below the json representation of an example of a 'PaymentAttributeValueChangeEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"PaymentAttributeValueChangeEvent",  "event": {  "payment" :   {-- SEE Payment RESOURCE SAMPLE --}  } } |

### Payment State Change Event

Notification PaymentStateChangeEvent case for resource Payment

**Json representation sample**

We provide below the json representation of an example of a 'PaymentStateChangeEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"PaymentStateChangeEvent",  "event": {  "payment" :   {-- SEE Payment RESOURCE SAMPLE --}  } } |

### Payment Delete Event

Notification PaymentDeleteEvent case for resource Payment

**Json representation sample**

We provide below the json representation of an example of a 'PaymentDeleteEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"PaymentDeleteEvent",  "event": {  "payment" :   {-- SEE Payment RESOURCE SAMPLE --}  } } |

### Refund Create Event

Notification RefundCreateEvent case for resource Refund

**Json representation sample**

We provide below the json representation of an example of a 'RefundCreateEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"RefundCreateEvent",  "event": {  "refund" :   {-- SEE Refund RESOURCE SAMPLE --}  } } |

### Refund Attribute Value Change Event

Notification RefundAttributeValueChangeEvent case for resource Refund

**Json representation sample**

We provide below the json representation of an example of a 'RefundAttributeValueChangeEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"RefundAttributeValueChangeEvent",  "event": {  "refund" :   {-- SEE Refund RESOURCE SAMPLE --}  } } |

### Refund State Change Event

Notification RefundStateChangeEvent case for resource Refund

**Json representation sample**

We provide below the json representation of an example of a 'RefundStateChangeEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"RefundStateChangeEvent",  "event": {  "refund" :   {-- SEE Refund RESOURCE SAMPLE --}  } } |

### Refund Delete Event

Notification RefundDeleteEvent case for resource Refund

**Json representation sample**

We provide below the json representation of an example of a 'RefundDeleteEvent' notification event object

|  |
| --- |
| {  "eventId":"00001",  "eventTime":"2015-11-16T16:42:25-04:00",  "eventType":"RefundDeleteEvent",  "event": {  "refund" :   {-- SEE Refund RESOURCE SAMPLE --}  } } |

# API OPERATIONS

Remember the following Uniform Contract:

|  |  |  |
| --- | --- | --- |
| Operation on Entities | Uniform API Operation | Description |
| Query Entities | GET Resource | GET must be used to retrieve a representation of a resource. |
| Create Entity | POST Resource | POST must be used to create a new resource |

Filtering and attribute selection rules are described in the TMF REST Design Guidelines.

Notifications are also described in a subsequent section.

## Operations on Payment

### List payments

**GET /payment?fields=...&{filtering}**

**Description**

This operation lists payment entities.  
Attribute selection is enabled for all first level attributes.  
Filtering may be available depending on the compliance level supported by an implementation.

**Usage Samples**

The example below includes the attributes within the Payment resource model that must be included in the query response.

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/payment Accept: application/json |
| **Response** |
| 200  [  {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "correlatorId": "632147",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example #1",  "status": "done",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234",  "@referredType": "CustomerBill"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "id": "15492MIFB865654",  "href": "https://host:port/paymentMethodManagement/v4/voucher/15492MIFB865654",  "@referredType": "Voucher",  "@type": "PaymentMethodRef"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  }  },  {  "id": "369258",  "href": "https://host:port/paymentManagement/v4/payment/369258",  "correlatorId": "789414454",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example #2",  "status": "done",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 7.24  },  "taxAmount": {  "unit": "EUR",  "value": 1.16  },  "totalAmount": {  "unit": "EUR",  "value": 8.4  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "id": "15492MIFB865654",  "href": "https://host:port/paymentMethodManagement/v4/voucher/15492MIFB865654",  "@referredType": "Voucher",  "@type": "PaymentMethodRef"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  }  },  {  "id": "987321462",  "href": "https://host:port/paymentManagement/v4/payment/987321462",  "paymentDate": "2020-01-15T17:42:06.120Z",  "name": "Example #3",  "status": "done",  "statusDate": "2020-01-15T17:42:06.120Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 27  },  "taxAmount": {  "unit": "EUR",  "value": 4.32  },  "totalAmount": {  "unit": "EUR",  "value": 31.32  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "849897498",  "href": "https://host:port/accountManagement/v4/account/849897498",  "description": "John Doe personnal account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "id": "78913013154HGDI65621",  "brand": "visa",  "bank": "tmForum Bank",  "cardNumber": "9874651646546846516",  "expirationDate": "2021-01-31T00:00:00.000Z",  "cvv": "007",  "nameOnCard": "MR JOHN DOE",  "@type": "BankCard"  },  "payer": {  "id": "1320154rvb654654",  "href": "https://host:port/partyManagement/v4/individual/1320154rvb654654",  "name": "John Doe",  "role": "payer",  "@referredType": "Individual"  }  } ] |

Here is an example of a request for retrieving a list of payment(s). The given criteria is the correlatorId.

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/payment?correlatorId=632147 Accept: application/json |
| **Response** |
| 200  [  {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "correlatorId": "632147",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example #1",  "status": "done",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234",  "@referredType": "CustomerBill"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "id": "15492MIFB865654",  "href": "https://host:port/paymentMethodManagement/v4/voucher/15492MIFB865654",  "@referredType": "Voucher",  "@type": "PaymentMethodRef"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  }  }  ] |

Here is an example of a request for retrieving a list of payment(s). The given criteria is a date range.

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/payment?paymentDate.gt=2020-01-10&paymentDate.lt=2020-01-20 Accept: application/json |
| **Response** |
| 200  [  {  "id": "987321462",  "href": "https://host:port/paymentManagement/v4/payment/987321462",  "paymentDate": "2020-01-15T17:42:06.120Z",  "name": "Example #3",  "status": "done",  "statusDate": "2020-01-15T17:42:06.120Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 27  },  "taxAmount": {  "unit": "EUR",  "value": 4.32  },  "totalAmount": {  "unit": "EUR",  "value": 31.32  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "849897498",  "href": "https://host:port/accountManagement/v4/account/849897498",  "description": "John Doe personnal account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "id": "78913013154HGDI65621",  "brand": "visa",  "bank": "tmForum Bank",  "cardNumber": "9874651646546846516",  "expirationDate": "2021-01-31T00:00:00.000Z",  "cvv": "007",  "nameOnCard": "MR JOHN DOE",  "@type": "BankCard"  },  "payer": {  "id": "1320154rvb654654",  "href": "https://host:port/partyManagement/v4/individual/1320154rvb654654",  "name": "John Doe",  "role": "payer",  "@referredType": "Individual"  }  } ] |

### 

### Retrieve payment

**GET /payment/{id}?fields=...&{filtering}**

**Description**

This operation retrieves a payment entity.  
Attribute selection is enabled for all first level attributes.  
Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

**Usage Samples**

The example below includes the attributes within the Payment resource model that must be included in the query response.

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/payment/12345 Accept: application/json |
| **Response** |
| 200  {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "correlatorId": "67890",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example",  "description": "a payment example",  "status": "done",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "@referredType": "CustomerBill",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "id": "15492MIFB865654",  "href": "https://host:port/paymentMethodManagement/v4/voucher/15492MIFB865654",  "@referredType": "Voucher",  "@type": "PaymentMethodRef"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  } } |

### Create payment

**POST /payment**

**Description**

This operation creates a payment entity.

**Mandatory and Non Mandatory Attributes**

The following tables provide the list of mandatory and non mandatory attributes when creating a Payment, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

|  |  |
| --- | --- |
| Mandatory Attributes | Rule |
| totalAmount |  |
| paymentMethod |  |
| account |  |

|  |  |
| --- | --- |
| Non Mandatory Attributes | Rule |
| amount |  |
| authorizationCode |  |
| channel |  |
| correlatorId |  |
| description |  |
| name |  |
| payer |  |
| paymentDate |  |
| paymentItem |  |
| status |  |
| statusDate |  |
| taxAmount |  |

**Usage Samples**

The example below includes the attributes within the payment entity resource model that are mandatory to be included in the request when creating a new resource in the server.

|  |
| --- |
| **Request** |
| POST serverRoot/paymentManagement/v4/payment Content-Type: application/json  {  "name": "Example",  "description": "a payment example",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "15463151",  "href": "https://host:port/accountManagement/v4/account/15463151",  "name": "Telco fusion account",  "description": "Jean Pontus's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234",  "@referredType": "CustomerBill"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "@type": "Check",  "description": "Check payment",  "code": "56564655165446",  "drawer": "Jean Pontus",  "payee": "TMF Telco",  "bank": "National Bank",  "date": "2020-02-01T00:00:00.000Z"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  } } |
| **Response** |
| 201  {  "id": "12345",  "href": "https://host:port/paymentManagement/v4/payment/12345",  "paymentDate": "2020-01-08T12:06:38.230Z",  "name": "Example",  "description": "a payment example",  "status": "initialized",  "statusDate": "2020-01-08T12:06:38.230Z",  "@type": "Payment",  "amount": {  "unit": "EUR",  "value": 10  },  "taxAmount": {  "unit": "EUR",  "value": 1.6  },  "totalAmount": {  "unit": "EUR",  "value": 11.6  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "15463151",  "href": "https://host:port/accountManagement/v4/account/15463151",  "name": "Telco fusion account",  "description": "Jean Pontus's telco account",  "@referredType": "PartyAccount"  },  "paymentItem": [  {  "id": "1",  "amount": {  "unit": "EUR",  "value": 6  },  "taxAmount": {  "unit": "EUR",  "value": 0.96  },  "totalAmount": {  "unit": "EUR",  "value": 6.96  },  "item": {  "id": "1234",  "href": "https://host:port/customerBillManagement/v4/customerBill/1234",  "@referredType": "CustomerBill"  }  },  {  "id": "2",  "amount": {  "unit": "EUR",  "value": 4  },  "taxAmount": {  "unit": "EUR",  "value": 0.64  },  "totalAmount": {  "unit": "EUR",  "value": 4.64  },  "item": {  "id": "666",  "href": "https://host:port/productOrdering/v4/productOrder/666",  "@referredType": "ProductOrder"  }  }  ],  "paymentMethod": {  "@type": "Check",  "description": "Check payment",  "code": "56564655165446",  "drawer": "Jean Pontus",  "payee": "TMF Telco",  "bank": "National Bank",  "date": "2020-02-01T00:00:00.000Z"  },  "payer": {  "id": "3333333333333",  "href": "https://host:port/partyManagement/v4/individual/3333333333333",  "name": "Jean Pontus",  "role": "payer",  "@referredType": "Individual"  } } |

## Operations on Refund

### List refunds

**GET /refund?fields=...&{filtering}**

**Description**

This operation list refund entities.  
Attribute selection is enabled for all first level attributes.  
Filtering may be available depending on the compliance level supported by an implementation.

**Usage Samples**

Here is an example of a request for retrieving a list of refund(s) requested by a given requestor

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/refund?requestor.id=1234567890 Accept: application/json |
| **Response** |
| 200  [  {  "id": "23456",  "href": "https://host:port/paymentManagement/v4/refund/23456",  "name": "Example of a Refund resource",  "description": "Refund due to order 666 cancellation",  "refundDate": "2020-01-11T12:06:38.230Z",  "status": "authorized",  "statusDate": "2017-05-11T12:10:38.230Z",  "@type": "Refund",  "amount": {  "amount": 10,  "units": "EUR"  },  "taxAmount": {  "amount": 1.6,  "units": "EUR"  },  "totalAmount": {  "amount": 11.6,  "units": "EUR"  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "856654654",  "href": "https://host:port/accountManagement/v4/account/856654654",  "name": "Telco fusion account",  "description": "John Doe\u2019s telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "description": "bank card",  "@type": "BankCard",  "brand": "MasterCard",  "type": "Debit",  "cardNumber": "00000000000000000",  "expirationDate": "2025-01-01T12:00:00Z",  "cvv": "123",  "nameOnCard": "Mr Michel Valette",  "bank": "Imaginary Bank.inc"  },  "payment": {  "id": "55555",  "href": "https://host:port/paymentManagement/v4/payment/55555",  "name": "Some payment",  "description": "Payment related to this refund",  "@type": "PaymentRef"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  }  },  {  "id": "987634",  "href": "https://host:port/paymentManagement/v4/refund/987634",  "name": "Another example of a Refund resource",  "description": "Compensation for downtime",  "refundDate": "2020-01-11T12:06:38.230Z",  "status": "confirmed",  "statusDate": "2020-01-11T12:10:38.230Z",  "@type": "Refund",  "amount": {  "amount": 4,  "units": "EUR"  },  "taxAmount": {  "amount": 0.3,  "units": "EUR"  },  "totalAmount": {  "amount": 4.3,  "units": "EUR"  },  "channel": {  "id": "channel4",  "href": "https://host:port/channel/v4/channel/channel4",  "name": "Call Center"  },  "account": {  "id": "44444",  "href": "https://host:port/accountManagement/v4/account/44444",  "name": "Telco fusion account",  "description": "Michel Valette's telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "id": "696871684",  "href": "https://host:port/accountManagement/v4/account/696871684",  "name": "Refund using Bank account transfer",  "description": "Customer's bank account",  "@referredType": "BankAccountTransfer"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  }  } ] |

### Retrieve refund

**GET /refund/{id}?fields=...&{filtering}**

**Description**

This operation retrieves a refund entity.  
Attribute selection is enabled for all first level attributes.  
Filtering on sub-resources may be available depending on the compliance level supported by an implementation.

**Usage Samples**

The example below includes the attributes within the Refund resource model that must be included in the query response.

|  |
| --- |
| **Request** |
| GET serverRoot/paymentManagement/v4/refund/23456 Accept: application/json |
| **Response** |
| 200  {  "id": "23456",  "href": "https://host:port/paymentManagement/v4/refund/23456",  "name": "Example of a Refund resource",  "description": "Refund due to order 666 cancellation",  "refundDate": "2020-01-11T12:06:38.230Z",  "status": "authorized",  "statusDate": "2017-05-11T12:10:38.230Z",  "@type": "Refund",  "amount": {  "amount": 10,  "units": "EUR"  },  "taxAmount": {  "amount": 1.6,  "units": "EUR"  },  "totalAmount": {  "amount": 11.6,  "units": "EUR"  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "856654654",  "href": "https://host:port/accountManagement/v4/account/856654654",  "name": "Telco fusion account",  "description": "John Doe\u2019s telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "description": "bank card",  "@type": "BankCard",  "brand": "MasterCard",  "type": "Debit",  "cardNumber": "00000000000000000",  "expirationDate": "2025-01-01T12:00:00",  "cvv": "123",  "nameOnCard": "Mr Michel Valette",  "bank": "Imaginary Bank.inc"  },  "payment": {  "id": "55555",  "href": "https://host:port/paymentManagement/v4/payment/55555",  "name": "Some payment",  "description": "Payment related to this refund",  "@type": "PaymentRef"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  } } |

### Create refund

**POST /refund**

**Description**

This operation creates a refund entity.

**Mandatory and Non Mandatory Attributes**

The following tables provide the list of mandatory and non mandatory attributes when creating a Refund, including any possible rule conditions and applicable default values. Notice that it is up to an implementer to add additional mandatory attributes.

|  |  |
| --- | --- |
| Mandatory Attributes | Rule |
| totalAmount |  |
| paymentMethod |  |
| account |  |

|  |  |
| --- | --- |
| Non Mandatory Attributes | Rule |
| amount |  |
| authorizationCode |  |
| channel |  |
| correlatorId |  |
| description |  |
| name |  |
| payment |  |
| refundDate |  |
| requestor |  |
| status |  |
| statusDate |  |
| taxAmount |  |

**Usage Samples**

The example below includes the attributes within the refund entity resource model that are mandatory to be included in the request when creating a new resource in the server.

|  |
| --- |
| **Request** |
| POST serverRoot/paymentManagement/v4/refund Content-Type: application/json  {  "name": "Example of a Refund resource",  "description": "Refund due to order 666 cancellation",  "@type": "Refund",  "amount": {  "amount": 10,  "units": "EUR"  },  "taxAmount": {  "amount": 1.6,  "units": "EUR"  },  "totalAmount": {  "amount": 11.6,  "units": "EUR"  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "856654654",  "href": "https://host:port/accountManagement/v4/account/856654654",  "name": "Telco fusion account",  "description": "John Doe\u2019s telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "description": "bank card",  "@type": "BankCard",  "brand": "MasterCard",  "type": "Debit",  "cardNumber": "00000000000000000",  "expirationDate": "2025-01-01T12:00:00",  "cvv": "123",  "nameOnCard": "Mr Michel Valette",  "bank": "Imaginary Bank.inc"  },  "payment": {  "id": "55555",  "href": "https://host:port/paymentManagement/v4/payment/55555",  "name": "Some payment",  "description": "Payment related to this refund",  "@type": "PaymentRef"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  } } |
| **Response** |
| 201  {  "id": "23456",  "href": "https://host:port/paymentManagement/v4/refund/23456",  "name": "Example of a Refund resource",  "description": "Refund due to order 666 cancellation",  "refundDate": "2020-01-11T12:06:38.230Z",  "status": "authorized",  "statusDate": "2017-05-11T12:10:38.230Z",  "@type": "Refund",  "amount": {  "amount": 10,  "units": "EUR"  },  "taxAmount": {  "amount": 1.6,  "units": "EUR"  },  "totalAmount": {  "amount": 11.6,  "units": "EUR"  },  "channel": {  "id": "channel1",  "name": "WEB Portal"  },  "account": {  "id": "856654654",  "href": "https://host:port/accountManagement/v4/account/856654654",  "name": "Telco fusion account",  "description": "John Doe\u2019s telco account",  "@referredType": "PartyAccount"  },  "paymentMethod": {  "description": "bank card",  "@type": "BankCard",  "brand": "MasterCard",  "type": "Debit",  "cardNumber": "00000000000000000",  "expirationDate": "2025-01-01T12:00:00",  "cvv": "123",  "nameOnCard": "Mr Michel Valette",  "bank": "Imaginary Bank.inc"  },  "payment": {  "id": "55555",  "href": "https://host:port/paymentManagement/v4/payment/55555",  "name": "Some payment",  "description": "Payment related to this refund",  "@type": "PaymentRef"  },  "requestor": {  "id": "1234567890",  "href": "https://host:port/partyManagement/v4/individual/1234567890",  "role": "premium client advisor",  "name": "Jean-Claude Dusse",  "@referredType": "Individual"  } } |

# API NOTIFICATIONS

For every single of operation on the entities use the following templates and provide sample REST notification POST calls.

It is assumed that the Pub/Sub uses the Register and UnRegister mechanisms described in the REST Guidelines reproduced below.

## Register listener

**POST /hub**

**Description**

Sets the communication endpoint address the service instance must use to deliver information about its health state, execution state, failures and metrics. Subsequent POST calls will be rejected by the service if it does not support multiple listeners. In this case DELETE /api/hub/{id} must be called before an endpoint can be created again.

**Behavior**

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 409 if request is not successful.

**Usage Samples**

Here's an example of a request for registering a listener.

|  |
| --- |
| **Request** |
| POST /api/hub  Accept: application/json  {"callback": "http://in.listener.com"} |
| **Response** |
| 201  Content-Type: application/json  Location: /api/hub/42  {"id":"42","callback":"http://in.listener.com","query":null} |

## Unregister listener

**DELETE /hub/{id}**

**Description**

Clears the communication endpoint address that was set by creating the Hub.

**Behavior**

Returns HTTP/1.1 status code 204 if the request was successful.

Returns HTTP/1.1 status code 404 if the resource is not found.

**Usage Samples**

Here's an example of a request for un-registering a listener.

|  |
| --- |
| **Request** |
| DELETE /api/hub/42  Accept: application/json |
| **Response** |
| 204 |

## Publish Event to listener

**POST /client/listener**

**Description**

Clears the communication endpoint address that was set by creating the Hub.

Provides to a registered listener the description of the event that was raised. The /client/listener url is the callback url passed when registering the listener.

**Behavior**

Returns HTTP/1.1 status code 201 if the service is able to set the configuration.

**Usage Samples**

Here's an example of a notification received by the listener. In this example “EVENT TYPE” should be replaced by one of the notification types supported by this API (see Notification resources Models section) and EVENT BODY refers to the data structure of the given notification type.

|  |
| --- |
| **Request** |
| POST /client/listener  Accept: application/json  {  "event": {  EVENT BODY  },  "eventType": "EVENT\_TYPE"  } |
| **Response** |
| 201 |

For detailed examples on the general TM Forum notification mechanism, see the TMF REST Design Guidelines.

# Acknowledgements

## Version History

| **Version Number** | **Date Modified** | **Modified by:** | **Description of changes** |
| --- | --- | --- | --- |
| 4.0.0 | 29-Jul-2020 | Alan Pope | Final edits prior to publication |

## Release History

|  |  |  |  |
| --- | --- | --- | --- |
| **Release Status** | **Date** | **Release led by:** | **Description** |
| Release 0.1 | 05-Jun-2017 | Guillermo Martínez (Telefónica) | First Release of Draft Version of the Document. |
| Release 1.0.0 | 17-Nov-2017 | Guillermo Martínez (Telefónica) | Final Release of the document |
| Release 18.0.0  Version 1.0.1 | 19-Feb-2018 | Adrienne Walcott | Formatting/style edits prior to publishing |
| Release 18.0.1  Version 1.0.2 | 02-May-2018 | Adrienne Walcott | Updated to reflect TM Forum Approved status. Updated to TM Forum new brand guidelines |
| Pre-production | 29-Jul-2020 | Ludovic Robert - Orange  Grégoire Laurent - Orange | Updated based on schema-library and Design Guideline v4 patterns |