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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.

description 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

```json
{
    "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",
      "@referredType": "ProductOrder"
    }
  }
]
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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>channel</td>
<td>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.</td>
</tr>
<tr>
<td>correlatorId</td>
<td>A string. Unique identifier in the client for the refund in case it is needed to correlate.</td>
</tr>
<tr>
<td>description</td>
<td>A string. Text describing the contents of the refund.</td>
</tr>
<tr>
<td>href</td>
<td>A string. Hypertext Reference of the refund.</td>
</tr>
<tr>
<td>id</td>
<td>A string. Unique identifier of Refund.</td>
</tr>
<tr>
<td>name</td>
<td>A string. Screen name of the refund.</td>
</tr>
<tr>
<td>payment</td>
<td>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.</td>
</tr>
<tr>
<td>paymentMethod</td>
<td>A payment method ref or value (PaymentMethodRefOrValue). link to the resource that holds information about the payment mean used to complete the operation.</td>
</tr>
<tr>
<td>refundDate</td>
<td>A date time (DateTime). Date when the refund was performed.</td>
</tr>
<tr>
<td>requestor</td>
<td>A related party (RelatedParty). Related Entity reference. A related party defines party or party role linked to a specific entity.</td>
</tr>
<tr>
<td>status</td>
<td>A string. Status of the refund.</td>
</tr>
<tr>
<td>statusDate</td>
<td>A date time (DateTime). Date when the status was recorded.</td>
</tr>
<tr>
<td>taxAmount</td>
<td>A money (Money). Tax applied.</td>
</tr>
<tr>
<td>totalAmount</td>
<td>A money (Money). Amount to be paid (including taxes).</td>
</tr>
</tbody>
</table>

**Money sub-resource**

A base / value business entity used to represent money.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>unit</td>
<td>A string. Currency (ISO4217 norm uses 3 letters to define the currency).</td>
</tr>
<tr>
<td>value</td>
<td>A float. A positive floating point number.</td>
</tr>
</tbody>
</table>

**PaymentMethodRefOrValue sub-resource**

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

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>@referredType</td>
<td>A string. The actual type of the target instance when needed for disambiguation.</td>
</tr>
<tr>
<td>name</td>
<td>A string. Friendly name assigned to the payment method.</td>
</tr>
</tbody>
</table>
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.
- 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.
- 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.
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": "0000000000000000",
    "expirationDate": "2025-01-01T12:00:00Z",
    "cvv": "123",
    "nameOnCard": "Mr Michel Valette",
    "bank": "Imaginary Bank.inc"
  },
  "payment": {
    "id": "12345",
```

```
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

```json
{
  "eventId":"00001",
  "eventTime":"2015-11-16T16:42:25-04:00",
  "eventType":"PaymentCreateEvent",
  "resourceName"...
}
```
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

```json
{
    "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

```json
{
    "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

```json
{
  "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

```json
{
  "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

```json
{
  "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

```json
{
    "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

```json
{
    "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:

<table>
<thead>
<tr>
<th>Operation on Entities</th>
<th>Uniform API Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Query Entities</td>
<td>GET Resource</td>
<td>GET must be used to retrieve a representation of a resource.</td>
</tr>
<tr>
<td>Create Entity</td>
<td>POST Resource</td>
<td>POST must be used to create a new resource</td>
</tr>
</tbody>
</table>

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
         }
      }
   ]
}
"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
}
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",
      "@referredType": "CustomerBill"
    }
  },
  {
    "id": "2",
    "amount": {
      "unit": "EUR",
      "value": 4
    }
  }
]
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.

<table>
<thead>
<tr>
<th>Request</th>
</tr>
</thead>
</table>
| GET serverRoot/paymentManagement/v4/payment/12345  
Accept: application/json |

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
</tr>
</tbody>
</table>

```json
{
    "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",
"@referredType": "ProductOrder"
}
}
],
"paymentMethod": {
"id": "15492MIFB865654",


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.

<table>
<thead>
<tr>
<th>Mandatory Attributes</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>totalAmount</td>
<td></td>
</tr>
<tr>
<td>paymentMethod</td>
<td></td>
</tr>
<tr>
<td>account</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non Mandatory Attributes</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>amount</td>
<td></td>
</tr>
<tr>
<td>authorizationCode</td>
<td></td>
</tr>
<tr>
<td>channel</td>
<td></td>
</tr>
<tr>
<td>correlatorId</td>
<td></td>
</tr>
<tr>
<td>description</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td></td>
</tr>
<tr>
<td>payer</td>
<td></td>
</tr>
<tr>
<td>paymentDate</td>
<td></td>
</tr>
<tr>
<td>paymentItem</td>
<td></td>
</tr>
<tr>
<td>status</td>
<td></td>
</tr>
<tr>
<td>statusDate</td>
<td></td>
</tr>
<tr>
<td>taxAmount</td>
<td></td>
</tr>
</tbody>
</table>

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",
    "@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",
      "@referredType": "CustomerBill"
    }
  },
  {
    "id": "2",
    "amount": {
      "unit": "EUR",
      "value": 4
    },
    "taxAmount": {

"unit": "EUR",
"value": 0.64
},
"totalAmount": {
"unit": "EUR",
"value": 4.64
},
"item": {
"id": "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

<table>
<thead>
<tr>
<th>Request</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET serverRoot/paymentManagement/v4/refund?requestor.id=1234567890</td>
</tr>
<tr>
<td>Accept: application/json</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
</tr>
<tr>
<td>[</td>
</tr>
<tr>
<td>{</td>
</tr>
<tr>
<td>&quot;id&quot;: &quot;23456&quot;,</td>
</tr>
<tr>
<td>&quot;href&quot;: &quot;<a href="https://host:port/paymentManagement/v4/refund/23456">https://host:port/paymentManagement/v4/refund/23456</a>&quot;,</td>
</tr>
<tr>
<td>&quot;name&quot;: &quot;Example of a Refund resource&quot;,</td>
</tr>
<tr>
<td>&quot;description&quot;: &quot;Refund due to order 666 cancellation&quot;,</td>
</tr>
<tr>
<td>&quot;refundDate&quot;: &quot;2020-01-11T12:06:38.230Z&quot;,</td>
</tr>
<tr>
<td>&quot;status&quot;: &quot;authorized&quot;,</td>
</tr>
<tr>
<td>&quot;statusDate&quot;: &quot;2017-05-11T12:10:38.230Z&quot;,</td>
</tr>
<tr>
<td>&quot;@type&quot;: &quot;Refund&quot;,</td>
</tr>
<tr>
<td>&quot;amount&quot;: {</td>
</tr>
<tr>
<td>&quot;amount&quot;: 10,</td>
</tr>
<tr>
<td>&quot;units&quot;: &quot;EUR&quot;</td>
</tr>
<tr>
<td>},</td>
</tr>
<tr>
<td>&quot;taxAmount&quot;: {</td>
</tr>
<tr>
<td>&quot;amount&quot;: 1.6,</td>
</tr>
<tr>
<td>&quot;units&quot;: &quot;EUR&quot;</td>
</tr>
<tr>
<td>},</td>
</tr>
<tr>
<td>&quot;totalAmount&quot;: {</td>
</tr>
<tr>
<td>&quot;amount&quot;: 11.6,</td>
</tr>
<tr>
<td>&quot;units&quot;: &quot;EUR&quot;</td>
</tr>
<tr>
<td>},</td>
</tr>
<tr>
<td>&quot;channel&quot;: {</td>
</tr>
<tr>
<td>&quot;id&quot;: &quot;channel1&quot;,</td>
</tr>
<tr>
<td>&quot;name&quot;: &quot;WEB Portal&quot;</td>
</tr>
<tr>
<td>},</td>
</tr>
<tr>
<td>&quot;account&quot;: {</td>
</tr>
<tr>
<td>&quot;id&quot;: &quot;856654654&quot;,</td>
</tr>
<tr>
<td>&quot;href&quot;: &quot;<a href="https://host:port/accountManagement/v4/account/856654654">https://host:port/accountManagement/v4/account/856654654</a>&quot;,</td>
</tr>
<tr>
<td>&quot;name&quot;: &quot;Telco fusion account&quot;,</td>
</tr>
<tr>
<td>&quot;description&quot;: &quot;John Doe's telco account&quot;,</td>
</tr>
<tr>
<td>&quot;@referredType&quot;: &quot;PartyAccount&quot;</td>
</tr>
<tr>
<td>},</td>
</tr>
<tr>
<td>&quot;paymentMethod&quot;: {</td>
</tr>
<tr>
<td>&quot;description&quot;: &quot;bank card&quot;,</td>
</tr>
<tr>
<td>&quot;@type&quot;: &quot;BankCard&quot;,</td>
</tr>
<tr>
<td>&quot;brand&quot;: &quot;MasterCard&quot;,</td>
</tr>
<tr>
<td>&quot;type&quot;: &quot;Debit&quot;</td>
</tr>
<tr>
<td>}</td>
</tr>
<tr>
<td>]</td>
</tr>
</tbody>
</table>
"cardNumber": "000000000000000000", 
"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" 
}
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's 2019 telco account",
  "@referredType": "PartyAccount"
},
"paymentMethod": {
  "description": "bank card",
  "@type": "BankCard",
  "brand": "MasterCard",
  "type": "Debit",
  "cardNumber": "0000000000000000",
  "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.

<table>
<thead>
<tr>
<th>Mandatory Attributes</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>totalAmount</td>
<td></td>
</tr>
<tr>
<td>paymentMethod</td>
<td></td>
</tr>
<tr>
<td>account</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non Mandatory Attributes</th>
<th>Rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>amount</td>
<td></td>
</tr>
<tr>
<td>authorizationCode</td>
<td></td>
</tr>
<tr>
<td>channel</td>
<td></td>
</tr>
<tr>
<td>correlatorId</td>
<td></td>
</tr>
<tr>
<td>description</td>
<td></td>
</tr>
<tr>
<td>name</td>
<td></td>
</tr>
<tr>
<td>payment</td>
<td></td>
</tr>
<tr>
<td>refundDate</td>
<td></td>
</tr>
<tr>
<td>requestor</td>
<td></td>
</tr>
<tr>
<td>status</td>
<td></td>
</tr>
<tr>
<td>statusDate</td>
<td></td>
</tr>
<tr>
<td>taxAmount</td>
<td></td>
</tr>
</tbody>
</table>

**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's telco account",
  "@referredType": "PartyAccount"
},
"paymentMethod": {
  "description": "bank card",
  "@type": "BankCard",
  "brand": "MasterCard",
  "type": "Debit",
  "cardNumber": "0000000000000000",
  "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"
}
201

```json
{
  "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's telco account",
    "@referredType": "PartyAccount"
  },
  "paymentMethod": {
    "description": "bank card",
    "@type": "BankCard",
    "brand": "MasterCard",
    "type": "Debit",
    "cardNumber": "0000000000000000",
    "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",
```

© TM Forum 2020. All Rights Reserved.
"href": "https://host:port/partyManagement/v4/individual/1234567890",
"role": "premium client advisor",
"name": "Jean-Claude Dusse",
"@referredType": "Individual"
}
API NOTIFICATIONS

For every single 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.

<table>
<thead>
<tr>
<th>Request</th>
</tr>
</thead>
</table>
| POST /api/hub  
Accept: application/json  
{"callback": "http://in.listener.com"} |

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
</table>
| 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

<table>
<thead>
<tr>
<th>DELETE /api/hub/42</th>
<th>Accept: application/json</th>
</tr>
</thead>
</table>

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

```plaintext
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

<table>
<thead>
<tr>
<th>Version Number</th>
<th>Date Modified</th>
<th>Modified by:</th>
<th>Description of changes</th>
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<td>4.0.0</td>
<td>29-Jul-2020</td>
<td>Alan Pope</td>
<td>Final edits prior to publication</td>
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### Release History

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<tr>
<td>Release 1.0.0</td>
<td>17-Nov-2017</td>
<td>Guillermo Martínez (Telefónica)</td>
<td>Final Release of the document</td>
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<tr>
<td>Release 18.0.0</td>
<td>19-Feb-2018</td>
<td>Adrienne Walcott</td>
<td>Formatting/style edits prior to publishing</td>
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<td>Release 18.0.1</td>
<td>02-May-2018</td>
<td>Adrienne Walcott</td>
<td>Updated to reflect TM Forum Approved status. Updated to TM Forum new brand guidelines</td>
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<td>Pre-production</td>
<td>29-Jul-2020</td>
<td>Ludovic Robert - Orange Grégoire Laurent - Orange</td>
<td>Updated based on schema-library and Design Guideline v4 patterns</td>
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