TranspariX Engine API User Manual

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Transparix Engine API Quick Start

To use the TranspariX Engine API follow these steps:

1. Create a QueryData object containing the shipment (or route) details.
2. POST it to https://rate-engine-api.transparix.com/api/v1/engine

3. Receive a ResultData object containing the list of forwarder service alternatives.

STEP 1: Create A QueryData Object

The QueryData object contains the details of the shipment (or route) and other query parameters (most of them optional). An example:

```json
{
  "databaseCode": "ACME-TEST",
  "divisionCode": "ACME-DIV-01",
  "targetCurrencyCode": "EUR",
  "shipment":
  {
    "shipmentId": 0,
    "pickup":
    {
      "countryCode": "PE",
      "postalCode": "LIMA18",
      "requestedDate": "2017-04-18"
    },
    "delivery":
    {
      "countryCode": "NL",
      "postalCode": "1438AN"
    },
    "packages":
    [
      {
        "packageId": 1,
        "packageTypeCode": "BOX",
        "weight": 2.3,
        "length": 40,
        "width": 50,
        "height": 60
      },
      {
        "packageId": 2,
        "packageTypeCode": "BOX",
        "weight": 2.3,
        "length": 40,
        "width": 50,
        "height": 60
      }
    ],
    "packageCount": 2,
    "totalWeight": 4.6,
    "totalVolume": 0.24
  },
  "settings":
  {
    "engineVersion": "v8",
    "calculateCostPerPackage": "true",
    "ignoreSurcharges": "true"
```

```
      }
  }
```

Some notes:

- The QueryData.DatabaseCode parameter determines the database to connect to. Go to the TranspariX Engine Room to find all the database codes. Read "The QueryData.DatabaseCode Parameter" section for more info.
- You can create the QueryData object from scratch or you can use the Query-Builder endpoint to get started. Read "The Query-Builder Endpoint" section for more info.

STEP 2: POST It

POST the QueryData object to https://rate-engine-api.transparix.com/api/v1/engine

STEP 3: Receive A ResultData Object

The ResultData object contains the list of forwarder services that match the requested query parameters. An example:

```
{
  "engineVersion": "8.2018.07.17",
  "resultDataVersion": "1.2018.07.25",
  "forwarderServices":
  [
    {
      "enabled": true,
      "rateCode": "RATE-01",
      "forwarderCode": "DHL",
      "serviceCode": "DHL-X",
      "transitTime": 3,
      "estimatedPickupDate": "2017-12-13",
      "estimatedDeliveryDate": "2017-12-16",
      "deliveryTimeStart": null,
      "deliveryTimeEnd": null,
      "currencyCodeBeforeExchange": "EUR",
      "freightRateBeforeExchange": 120,
      "currencyCode": "EUR",
      "freightRate": 120,
      "totalSurcharge": 0,
      "totalCost": 120
    },
    {
      "enabled": true,
      "rateCode": "RATE-02",
      "forwarderCode": "UPS",
      "serviceCode": "UPS-X",
      "transitTime": 3,
      "estimatedPickupDate": "2017-12-13",
      "estimatedDeliveryDate": "2017-12-16",
      "deliveryTimeStart": null,
      "deliveryTimeEnd": null,
```

```json
          "currencyCodeBeforeExchange": "EUR",
          "freightRateBeforeExchange": 140,
          "currencyCode": "EUR",
          "freightRate": 140,
          "totalSurcharge": 0,
          "totalCost": 140
      },
  ],
  "shipmentCostBreakdown":
  {
    "listOfCostPerPackage":
    [
      {
        "packageId": 1,
        "rateCode": "RATE-01",
        "partOfFreightRate": 60,
        "partOfTotalSurcharge": 0,
        "partOfTotalCost": 60,
        "percentageOfFreightRate": 50,
        "percentageOfTotalSurcharge": 0,
        "percentageOfTotalCost": 50
      },
      {
        "packageId": 2,
        "rateCode": "RATE-01",
        "partOfFreightRate": 60,
        "partOfTotalSurcharge": 0,
        "partOfTotalCost": 60,
        "percentageOfFreightRate": 50,
        "percentageOfTotalSurcharge": 0,
        "percentageOfTotalCost": 50
      },
      {
        "packageId": 1,
        "rateCode": "RATE-02",
        "partOfFreightRate": 70,
        "partOfTotalSurcharge": 0,
        "partOfTotalCost": 70,
        "percentageOfFreightRate": 50,
        "percentageOfTotalSurcharge": 0,
        "percentageOfTotalCost": 50
      },
      {
        "packageId": 2,
        "rateCode": "RATE-02",
        "partOfFreightRate": 70,
        "partOfTotalSurcharge": 0,
        "partOfTotalCost": 70,
        "percentageOfFreightRate": 50,
        "percentageOfTotalSurcharge": 0,
        "percentageOfTotalCost": 50
      }
    ],
```

```
    "listOfSurchargePerPackage": []
    }
}
```

The QueryData.DatabaseCode Parameter

Running Engine 7

When running Engine 7, only one code (the customer DB code) can be provided. Some (fictional) examples:

- ACME-TEST
- ACME-ACCP
- ACME-PROD

Running Engine 8

When running Engine 8, two codes (the Engine DB code and the customer DB code) separated by a semi-colon can be provided. Some (fictional) examples:

- ENGINE-V8-DB-TEST;ACME-TEST
- ENGINE-V8-DB-ACCP;ACME-ACCP
- ENGINE-V8-DB-PROD;ACME-PROD

The first part is the Engine database code. Some (real) examples:

- ENGINE-V8-DB-TEST
- ENGINE-V8-DB-ACCP
- ENGINE-V8-DB-PROD

The second part is the customer database code. Some (fictional) examples:

- ACME-TEST
- ACME-ACCP
- ACME-PROD

If only one database code is provided, then each environment will connect to its default database (for example: https://rate-engine-api-TEST.transparix.com will connect to the Engine TEST database) and the provided code will be assumed to be the customer database code.

The Query-Builder Endpoint

The Query-Builder endpoint builds a QueryData object from an existing shipment.

For TranspariX 7

GET https://rate-engine-api.transparix.com/api/v1/engine/query-builder/tx7/{databaseCode}/{shipmentId}

- The databaseCode identifies the database to connect to. Go to the TranspariX Engine Room to find all the database codes.

- The shipmentId identifies the shipment to use to build the QueryData object.

The Definitive Codes

The Bound Codes

Definitive Code	Description	Old Code
INBOUND	An inbound shipment.	IB
OUTBOUND	An outbound shipment.	OB
3RDPARTY	A third party shipment.	3P

The Chargeable Factor Codes

Definitive Code	Description	Old Code
DISTANCE	The distance of a route.	idem
PACKAGE-COUNT	The number of packages of a shipment.	COLLI_NR ITEM_COUNT PACKAGE_COUNT
TIME	The driving time of a route.	idem
WEIGHT	The weight of a shipment.	idem

The Chargeable Weight Code

Definitive Code	Description	Old Code
ACTUAL-WT	The actual-weight of a shipment.	ACTUAL WT
HEAVIEST-WT	The heaviest value between the actual-weight, the loading-length-weight and the volume-weight.	CHARGEABLE WT
LOADING-LENGTH-WT	The loading-length-weight of a shipment.	LOADING LENGTH WT
VOLUME-WT	The volume-weight of a shipment.	VOLUME WT

The Division Match Level Code

Definitive Code	Description	Old Code
DIVISION	The service matches at the division level.	n/a
DIVISION-GROUP	The service matches at the division-group level.	n/a
DIVISION-COUNTRY	The service matches at the division-country level.	n/a
ALL-DIVISIONS	The service matches all divisions.	n/a

The Goods Classification Code

Definitive Code	Description	Old Code
NONE	No goods-classification.	idem
SENSITIVE	Sensitive goods.	SD
DANGEROUS	Dangerous goods.	DG

The Service Level Code

Definitive Code	Description	Old Code
ROUTINE	A routine service.	ROU
PRIORITY	A priority service.	PRI
EMERGENCY	An emergency service.	EME

The Surcharge Type Code

Definitive Code	Description	Old Code
FIXED	The surcharge amount is fixed.	1
PERCENTAGE	The surcharge amount is a percentage of the freight-rate.	2
PER-N-DRIVING-HOURS	The surcharge amount depends on the number of driving hours. There is a surcharge per each N driving hours.	69
PER-N-EXTRA-KG	The surcharge amount depends on the number of extra-kilograms. There is a surcharge per each N extra kilograms.	64
PER-N-EXTRA-KM	The surcharge amount depends on the number of extra-kilometers. There is a surcharge per each N extra kilometers.	68
PER-N-EXTRA-STOPS	The surcharge amount depends on the number of extra-stops. There is a surcharge per each N extra stops.	66
PER-N-KG	The surcharge amount depends on the number of kilograms. There is a surcharge per each N kilograms.	63
PER-N-KM	The surcharge amount depends on the number of kilometers. There is a surcharge per each N kilometers	67
PER-N-PACKAGES	The surcharge amount depends on the number of packages. There is a surcharge per each N packages.	65

Engine Settings

Notes:

- [E7] indicates the setting is compatible with Engine 7.
- [E8] indicates the setting is compatible with Engine 8.
- All settings are optional, use them as required.

bookingCutOffTime [E7; E8]

A time value to be used as default booking cut-off time when a freight-rate does not specify one.

If this value is NOT set, and if the freight-rate does NOT specify a booking cut-off time either, then booking a same-day pickup shipment is possible at any time (because there is no booking cut-off restriction).

Couple examples:

Value	Meaning
"08:00"	If the freight-rate does not specify a booking cut-off time, then the engine will use 08:00. In this case, if the current time is 07:59 booking a same-day pickup is still possible. But if the current time is 08:01, then same-day pickup is no longer possible.
"12:00"	If the freight-rate does not specify a booking cut-off time, then the engine will use 12:00. In this case, if the current time is 11:59 booking a same-day pickup is still possible. But if the current time is 12:01, then same-day pickup is no longer possible.

calculateCostPerPackage [E7; E8]

Note: This is only for shipment-based rate requests (where the QueryData.Shipment object is used).

A boolean value to indicate that the engine should also calculate the cost per package.

Value	Meaning
false [default]	The engine will NOT calculate the cost per package.
true	The engine will calculate the cost per package. This information will be returned in the ResultData.ShipmentCostBreakdown.

calculateCostPerShipment [E7; E8]

Note: This is only for route-based rate requests (where the QueryData.Route object is used).

A boolean value to indicate that the engine should also calculate the cost per shipment.

Value	Meaning
false [default]	The engine will NOT calculate the cost per shipment.
true	The engine will calculate the cost per shipment. This information will be returned in the ResultData.RouteCostBreakdown.ListOfCostPerShipment.

calculateCostPerStop [E7; E8]

Note: This is only for route-based rate requests (where the QueryData.Route object is used).

A boolean value to indicate that the engine should also calculate the cost per stop.

Value	Meaning
false [default]	The engine will NOT calculate the cost per stop.
true	The engine will calculate the cost per stop. This information will be returned in the ResultData.RouteCostBreakdown.ListOfCostPerStop.

currentDateTime [E7; E8]

A date-time value to be used as current local date-time when performing any date or time operations.

If this value is NOT set, then the default value is the current date-time of the server. In other words, if this value is set, then it will override the date-time of the server for all related estimations.

engineVersion [E7; E8]

This value determines which version of the engine to run.

Value	Meaning
v7 [default]	Run Engine 7
v8	Run Engine 8

ignoreRestrictions [E8]

A boolean value to indicate that any restrictions found in the database should be ignored.

This is related to the restrictions uploaded using the restriction-data-sheet via the Engine Room. This is NOT related to the inherent limitations of each forwarder-service.

For example: A forwarder-service that does NOT support EUROPALLETs, will still NOT be listed for a shipment that has an EUROPALLET. But a restriction that limits the size of EUROPALLETs will be ignored when listing forwarder-services that DO support EUROPALLETs.

Value	Meaning
false [default]	The engine will enforce all service-level, goods-classification or shipment-dimension restrictions.
true	The engine will NOT enforce any service-level, goods-classification or shipment-dimension restrictions.

ignoreSurcharges [E8]

A boolean value to indicate that any surcharges found in the database should be ignored.

Value	Meaning
false [default]	The engine will calculate all surcharges.
true	The engine will NOT calculate any surcharges.

includeAllDeliveryTimes [E8]

A boolean value to indicate that the engine should also return the forwarder-services that do not match the requested delivery time window.

Value	Meaning
false [default]	The engine will NOT return any forwarder-services that do not match the requested delivery time window.
true	The engine will return some forwarder-services that do not match the requested delivery time window.

includeAllIncoterms [E7; E8]

A boolean value to indicate that the engine should also return the forwarder-services that do not match the requested Incoterm.

Value	Meaning
false [default]	The engine will NOT return any forwarder-services that do not match the requested Incoterm.
true	The engine will return some forwarder-services that do not match the requested Incoterm.

returnInvalidResults [E8]

A boolean value to indicate that the engine should also return some forwarder-services that do not fully match the requested query parameters.

Value	Meaning
false [default]	The engine will NOT return any forwarder-services that do not fully match the requested query parameters.
true	The engine will return some forwarder-services that partially match the requested query parameters. These forwarder-services will be disabled.

returnMoreInfo [E7; E8]

A boolean value to indicate that the engine should return additional info about each forwarder-service.

Value	Meaning
false [default]	The engine will NOT return the ForwarderService.MoreInfo object.
true	The engine will return the ForwarderService.MoreInfo object.

roughDateEstimates [E8]

A boolean value to indicate that the engine should NOT take in account holidays nor weekends when estimating the pickup and delivery dates.

Value	Meaning
false [default]	The engine will take in account holidays and weekends when estimating the pickup and delivery dates.
true	The engine will NOT take in account holidays nor weekends when estimating the pickup and delivery dates.

Deprecated Settings

calculateInvalidCostsThreshold [E7]

This setting is deprecated and always 0 in Engine 8.

This means that Engine 8 does NOT calculate the cost of invalid forwarder services.

This is the old description: This value determines the "there are too many forwarder-services so do NOT calculate the cost of the invalid ones" threshold. It this value is NOT set, then the default value is "30".

disableForwarderServiceIfIncotermIsNotOK [E7]

This setting was replaced by "includeAllIncoterms" in Engine 8.

disableForwarderServiceIfIncotermIsNotOK = !includeAllIncoterms

ignoreDivisionForwarderRelationship [E7]

This setting is deprecated and always TRUE in Engine 8.

To achieve the old FALSE behavior, the calling application should provide the list of acceptable forwarders (QueryData.ForwarderCodes).

ignoreDivisionServiceRelationship [E7]

This setting is deprecated and always TRUE in Engine 8.

To achieve the old FALSE behavior, the calling application should provide the list of acceptable services (QueryData.ServiceCodes).