



# Portability Check Synchronous SOAP



## Interface information

tyntec's Global Number Portability (GNP) resolves number portability by obtaining data directly from local number portability databases and live network information from across the globe.

Global Number Portability is available with the Synchronous SOAP API.

SOAP is a protocol used for exchanging messages over a computer network. The messages that are sent do not rely on the underlying transport protocol, which is in most cases HTTP (and in the specific case of the tyntec infrastructure).

The messages themselves are structured as XML documents and are defined in two parts:

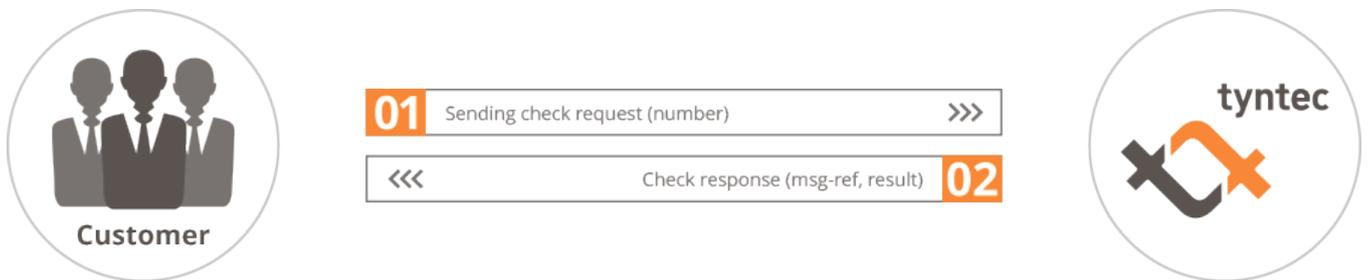
- **SOAP standard**  
The SOAP standard describes elements necessary for communication, such as the "SOAP Envelope," which encloses the actual content to be sent. This content is application-specific and is in this case defined by the WSDL file provided by tyntec. A simple XML parser can be used for extracting the data from the SOAP response.
- **WSDL file**  
The WSDL file can be accessed on one of the URLs below, depending if HTTP or HTTPS is used:  
<http://78.110.226.74:8080/soap/services/SuperQueryService?wsdl>  
<https://78.110.226.74:8080/soap/services/SuperQueryService?wsdl>

To implement and use Global Number Portability, you should have the call of a Web Service as defined by the SOAP specification (<http://www.w3.org/TR/soap12-part1/>) with the help of the provided WSDL file.

Furthermore, you need a computer system with a fixed IP address from where the SOAP call is initiated. This computer system must be reachable from the tyntec IP. For the fastest implementation and expert support from tyntec, it is strongly recommended that the Global Number Portability is implemented using:

- Java Axis2 1.3 Web Services framework:  
<http://ws.apache.org/axis2/>  
<http://java.sun.com/webservices/docs/1.6/tutorial/doc/>
- Tomcat 5.5 or higher for hosting the axis framework:  
<http://tomcat.apache.org/>
- The following documents are useful in implementing the Global Number Portability service with the above components:  
[http://ws.apache.org/axis2/1\\_3/userguide.html](http://ws.apache.org/axis2/1_3/userguide.html)  
[http://ws.apache.org/axis2/1\\_3/installationguide.html](http://ws.apache.org/axis2/1_3/installationguide.html)  
<http://www.onjava.com/pub/a/onjava/2001/10/24/xml databind.html>

This is the overview of the workflow for querying portability information:



As previously mentioned, tyntec’s SOAP implementation uses HTTP as its transport layer. The initial request consists of the number to be queried, in international format. The result will contain:

#### Subscription network information

- IMSI network information (MCC/MNC)
- IMSI country
- IMSI time zone
- HLR network information (MCC/MNC)
- HLR country
- HLR time zone

# Connection steps

## Step 1 - Sending check request (number)

The communication protocol is HTTP, whereby a request is submitted to a URL that tyntec specifies. A sample request is shown below.

```
<tyntec:checkrequest xmlns:tyntec="http://www.tyntec.biz/">
<tyntec:allnetworkquery>
<tyntec:destination>
<tyntec:number tyntec:ton="Unknown" tyntec:npi="Unknown">+491239876543</tyntec:number>
</tyntec:destination>
</tyntec:allnetworkquery>
</tyntec:checkrequest>
```

Please note that the XML request must be surrounded by a proper SOAP body in proper SOAP envelope.

## Step 2 - Check response

tyntec will respond to the Check Request with the CheckResponse message. Please note that this response will be delivered via the HTTP response to the previous HTTP request.

tyntec uses three response codes to determine the outcome of a Global Number Portability query. The table below shows the Response Codes and their associated Check State values:

| Check State | Response Code   | Description   |
|-------------|-----------------|---|
| Success     | 0 - Success     | The requested MSISDN information is returned.                                     |
| Failure     | 1 - No Response | Temporarily not connected to the network or the network is not covered by tyntec. |
| Failure     | 2 - Error       | Network has confirmed that MSISDN does not exist.                                 |

A response code is returned only when the Check State value = 'Failure'.

### Response Code 0 – Success

A successful Check Response will return all data regarding the subscription network, e.g.:

```
<tyntec:checkresponse xmlns:tyntec="http://www.tyntec.biz/">
<tyntec:messageref>15-21088981464922+491239876543</tyntec:messageref>
<tyntec:checkstate value="Success"></tyntec:checkstate>
<tyntec:allnetworkinfo>
<tyntec:subscriptionnetwork>
<tyntec:imsiinformation>
<tyntec:networkinfo>
<tyntec:mcc>262</tyntec:mcc>
<tyntec:mnc>07</tyntec:mnc>
<tyntec:tyntecid>1099</tyntec:tyntecid>
<tyntec:operatorname>O2 (Germany) GmbH & Co. OHG</tyntec:operatorname>
<tyntec:country>
<tyntec:countryname isoalpha3code="DEU">Germany</tyntec:countryname>
<tyntec:timezone>
<tyntec:daylightsavingtime>
<tyntec:hasdst>true</tyntec:hasdst>
<tyntec:dstcurrentlyactive>false</tyntec:dstcurrentlyactive>
<tyntec:dstoffset>3600000 ms</tyntec:dstoffset>
</tyntec:daylightsavingtime>
```

```

<tyn:name>Europe/Berlin</tyn:name>
<tyn:gmtoffset>3600000 ms</tyn:gmtoffset>
</tyn:timezone>
</tyn:country>
</tyn:networkinfo>
</tyn:imsiinformation>
<tyn:hlrinformation>
<tyn:networkinfo>
<tyn:mcc>262</tyn:mcc>
<tyn:mnc>07</tyn:mnc>
<tyn:tyntecid>1099</tyn:tyntecid>
<tyn:operatorname>O2 (Germany) GmbH & Co. OHG</tyn:operatorname>
<tyn:country>
<tyn:countryname isoalpha3code=""DEU"">Germany</tyn:countryname>
<tyn:timezone>
<tyn:daylightsavingtime>
<tyn:hasdst>true</tyn:hasdst>
<tyn:dstcurrentlyactive>>false</tyn:dstcurrentlyactive>
<tyn:dstoffset>3600000 ms</tyn:dstoffset>
</tyn:daylightsavingtime>
<tyn:name>Europe/Berlin</tyn:name>
<tyn:gmtoffset>3600000 ms</tyn:gmtoffset>
</tyn:timezone>
</tyn:country>
</tyn:tyntecid></tyn:tyntecid></tyn:networkinfo>
</tyn:hlrinformation>
</tyn:subscriptionnetwork>
</tyn:allnetworkinfo>
</tyn:checkresponse>

```

Although the response code '0' is not explicitly returned, success is implied when the network operator information is returned.

With the delivery of MCC + MNC and TynTecID we ensure uniqueness in the transmission of the network operator information, regardless of any changes that may have taken place regarding the name of the operator.

### Response Code 1 – No Response

Response Code '1' indicates that the network did not return a response, e.g.:

```

<tyn:checkresponse xmlns:tyn=""http://www.tyntec.biz/"">
<tyn:messageref>15-21088981464922+491239876543</tyn:messageref>
<tyn:checkstate tyn:value=""Failure""></tyn:checkstate>
<tyn:networkerrorcode tyn:networktype=""GSM"" tyn:value=""1""></tyn:networkerrorcode>
</tyn:checkresponse>

```

There are a number of reasons why a network may not return a response. Often, poor number quality results in the network being unable to respond. Check the quality of the number to ensure that it consists only of the '+' sign and decimal digits; no other characters or spaces are permitted. If number quality is good, there may be a problem with the network; we recommend that you query again at a later time. Another possibility is that the number belongs to an operator that tyntec cannot reach.

### Response Code 2 – Error

Response Code '2' indicates that the network has confirmed that the MSISDN does not exist, e.g.:

```

<tyn:checkresponse xmlns:tyn="http://www.tyntec.biz/">
<tyn:messageref>15-21088981464922+491239876543</tyn:messageref>
<tyn:checkstate tyn:value="Failure"></tyn:checkstate>
<tyn:networkerrorcode tyn:networktype="GSM" tyn:value="2"></tyn:networkerrorcode>
</tyn:checkresponse>

```

## Example request

This example shows a Check Request enclosed in a SOAP Envelope with a full HTTP POST Header. Authorization information for „user:testpassword“ is encoded in the Authorization header (to be found in RFC 2617, chapter 2 – <http://www.ietf.org/rfc/rfc2616.txt>). Please note that the login “user” with password “testpassword” is not valid on the tyntec system and the host given in the example may differ from the host that is valid for you.

Please refer to the Products section in [my tyntec](#) for the correct host.

HTTP-Post-Header and SOAP-Envelope:

===== begin =====

POST /soap/services/SyncEnhancedCheckService HTTP/1.0

Content-Type: text/xml; charset=utf-8

Accept: application/soap+xml, application/dime, multipart/related, text/\*

User-Agent: Axis/1.2alpha

Host: 78.110.226.164:8972

Cache-Control: no-cache

Pragma: no-cache

SOAPAction: „“

Content-Length: 583

Authorization: Basic dXNlcj0ZNXN0cGFzc3dvcmQ=

<!--?xml version="1.0" encoding="UTF-8"?-->

<soapenv:envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:tyn="http://www.tyntec.biz/">

<soapenv:body>

<tyn:checkrequest>

<tyn:allnetworkquery>

<tyn:destination>

<tyn:number tyn:ton="Unknown" tyn:npi="Unknown">+491239876543</tyn:number>

</tyn:destination>

</tyn:allnetworkquery>

</tyn:checkrequest>

</soapenv:body>

</soapenv:envelope>

===== end =====

## Features

| Feature              | Activation | Functionality   |
|----------------------|------------|---|
| AlertSC notification | On request | <p>With this feature, you will be notified when a handset that is originally turned off gets turned back on.</p> <p><b>Here is how it works:</b></p> <ol style="list-style-type: none"> <li>1. You query a phone number and receive a “phone turned off” response</li> <li>2. tyntec instructs the mobile operator to provide a notification when the phone number becomes available</li> <li>3. When tyntec receives the information that the phone number is available, we will notify you.</li> </ol> <p>This functionality depends on the capabilities of each mobile operator’s infrastructure and is not guaranteed, so you might not receive AlertSC notifications from some mobile operators.</p> |

## FAQs

### Q - The URL provided by tyntec for Global Number Portability doesn't work. What can be done?

A - Check the firewall settings to ensure that requests to URLs with a port number other than 80 are indeed permitted. If in doubt, please connect to the following URL (<http://support.tyntec.biz:8968>) and report to tyntec Customer Support the date and time of the attempted connection.

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### Q - Why do I receive multiple Check Delivery Requests with the same ID?

A - In the event that your server is unable to process a request, e.g. an error generating the XML document, the Check Delivery Request will be resent. Please check your processes for receiving Check Delivery Requests.

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### Q - I can send a request and receive back a message ID, but I do not get any results.

A - The URL to which results are to be directed must be registered at tyntec. Please check that the URL has the same IP address as the originating request (see also the second question in this FAQ section.) Also, please ensure that your SOAP service that accepts the results is running. The service must be kept running even if you have sent all requests, since there is a time delay between request and receipt of result. If you use a firewall, please ensure that tyntec's IP address (i.e., the IP address you sent the requests to) is accepted.

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### Q - I do not receive results for operator xyz any more.

A - The operator's name may have changed, while you are still using a transcription table based on the names of operators. Please refer to a transcription table containing MCC +MNC.

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### Q - Why do I receive an authorization failure?

A - An authorization failure can be caused by an incorrect username and/or password. Please contact tyntec Support to verify your user details. If you have a test account and have previously been able to send requests successfully you may have reached your test message limit.

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### Q - How do I know when my test message limit has been reached?

A - If you attempt to send messages beyond your test account limit, you will receive an HTTP 401 Error (Unauthorized).

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### Q - I receive the same Check Delivery Request repeatedly, or results come in very slowly. What can I do?

A - There are two possibilities for receiving multiple Check Delivery Requests:

- 1) tyntec received a Check Delivery Response with an error message included, or
- 2) There was a problem in the communication process.

In the case of an error message in a Check Delivery Response, the Check Delivery Request will be resent, regardless of the content of the error message. If for some reason you no longer wish to receive a certain Check Delivery Request, please return a Check Delivery Response without an error message. An improperly structured Check Delivery Response is the most common cause for a communication problem. The Check Delivery Response may have incorrect syntax that could not be parsed by the XML compiler. Alternatively, a CheckDelivery Response may never have been sent successfully. In either case, the Check Delivery Request will be resent, since it cannot be determined whether the Check Delivery Request has been successfully received.

Please make sure that your receiving service returns a proper SOAP envelope with a proper Check Delivery Response included in the SOAP body.

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### Q - I send Check Requests but why do I always get an error back?

A - This can be due to a number of reasons, including:

- 1) You have not supplied a username and/or password. Please make sure that you supply both in the HTTP Header in the Basic Authorization Scheme (Refer to RFC 2616)
  - 2) The supplied username and/or password are invalid: Please check if you have mistyped the username and/or password provided to you
  - 3) The supplied number is not a valid phone number; the number must consist only of digits (except a leading +). Any other characters including spaces will not be accepted.
  - 4) Our service cannot parse the Check Request. Please verify that the Check Request is equivalent to the example request given in this API guide (refer to Section 4, Step 1). If you have created your program/service with an automatic tool and the WSDL file supplied by tyntec, this should not happen
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