External Trigger SDK

for

Version 4.5

Part Number E62384-01

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1 Introduction

1.1 Document Scope

This document describes the External Trigger API and is aimed at providing understanding of the External Trigger API operation and ensuring its successful interaction with Clients' external systems.
This document mainly describes the External Trigger API methods. The document also provides brief overview of the relevant internal procedures in ETAdirect environment and offers several examples of the External Trigger API usage.

1.2 Target Audience

This document is intended for developers of applications that require External Trigger API usage.

1.3 Glossary

Term	Explanation
Activity	Entity of the ETAdirect system that represents any time-consuming activity of the resource
API	Application Programming Interface – a particular set of rules and specifications that software programs follow to communicate and interact with each other
Bucket	Entity appearing on the resource tree which can contain resources of a defined type and be assigned activities
Client's Application	An application used by the Client along with ETAdirect
Customer	End-customer, entity that benefits from the activity
Delivery window	Statistically calculated time period in which a resource is expected to start an activity
ETA	Predicted time at which a resource will arrive at an activity and start it, calculated dynamically from current and historical data
External Trigger	Trigger invoked from an external system
Group	Resource of the resource tree which represents a group of resources and cannot execute activities
PAS/ Post Activity Survey	Customer-satisfaction level survey performed by phone after the activity completion
Route	List of activities assigned to a resource for a specific date, or a list of non-scheduled activities assigned to a resource
Resource	Element in the resource tree representing a defined company asset
Resource Tree	Hierarchy of company resources, showing "parent-child" relationships
Scenario	Complex algorithm of step sequences invoked by a corresponding trigger
Service Window	Time frame expected by the customer for an activity as

	scheduled by the company
Technician (Resource)	Person who performs work at the Customer’s premises (the one who provides the service)
Time Slot	1) Fixed service window, defined with a name and label, specifying when certain types of activities can be performed 2) Service Window (if the activity type does not support time slots)
Trigger	Code automatically executed in response to certain events (to a successful request validation)
User	1) Person using ETAdirect 2) Entity used for authentication and authorization, allowing people or external software to access ETAdirect
Validation	Verification that the data inserted into an application satisfies the pre-determined input criteria

2 External Trigger API Overview

External Trigger API provides the ability to:

- Find an activity in ETAdirect based on a key field (e.g. customer phone)
- Trigger a message scenario from an external system to generate a message for this activity
- Set final status for this generated message, optionally executing subsequent steps of the message scenario, and optionally changing properties of an activity and/or activity status.

2.1 Prerequisites to Working with External Trigger API

1. A user must be created in ETAdirect with the following properties:
    - login: 'ivr'
    - login policy type: 'Internal'
    - password: set to the shared secret known to the Client's Application. This password must be equal to 'auth_token' parameter in all requests to External Trigger API
2. The user must have the following permissions: 'SOAP'
3. Create message scenario with start step with Notification Method 'IVR' and particular Message Step Pattern
4. Assign this message scenario to Notification Trigger 'IVR'.

2.2 Message Scenario

The ETAdirect Notification Module provides the ability to create and trigger message scenarios – branching event-driven algorithms that consist of one or more steps, where a step corresponds to one message and defines how this message should be generated and processed.

2.2.1 Triggering the Scenario

The Notification Trigger invokes a message scenario if certain action has taken place in ETAdirect (Resource route activation/deactivation, activity completion, etc.) or certain situation (activity is due soon or activity is not started in time) has occurred.

The External Trigger API enables executing message scenarios with HTTP/HTTPS request directly from external system. The only event required to invoke the trigger and start the scenario, is the receipt of a valid 'Create Message' request.

2.2.2 Start Step

Start Steps are initial steps of a message scenario that are actually invoked by the relevant Notification Trigger upon certain predefined action or situation in ETAdirect. As a result of a Start Step a message is generated.

After the message is generated, the message content of the newly created message is then sent to the external system as "Create Message" Response.

2.2.3 Inner Steps

Inner Steps are the steps of the scenario invoked after the previous step message receives its final status.

In the External Trigger API, the External System sends a "Set Message Status" Request to ETAdirect. This finalizes the message processing, status, and description (if any) of the message are updated. ETAdirect returns the "Set Message Status" response and may execute inner steps if they are present in message scenario.

2.2.4 Workflow Diagram

For better comprehension, the method workflow is illustrated with the diagram below and supplemented with brief step descriptions (Figure 1).

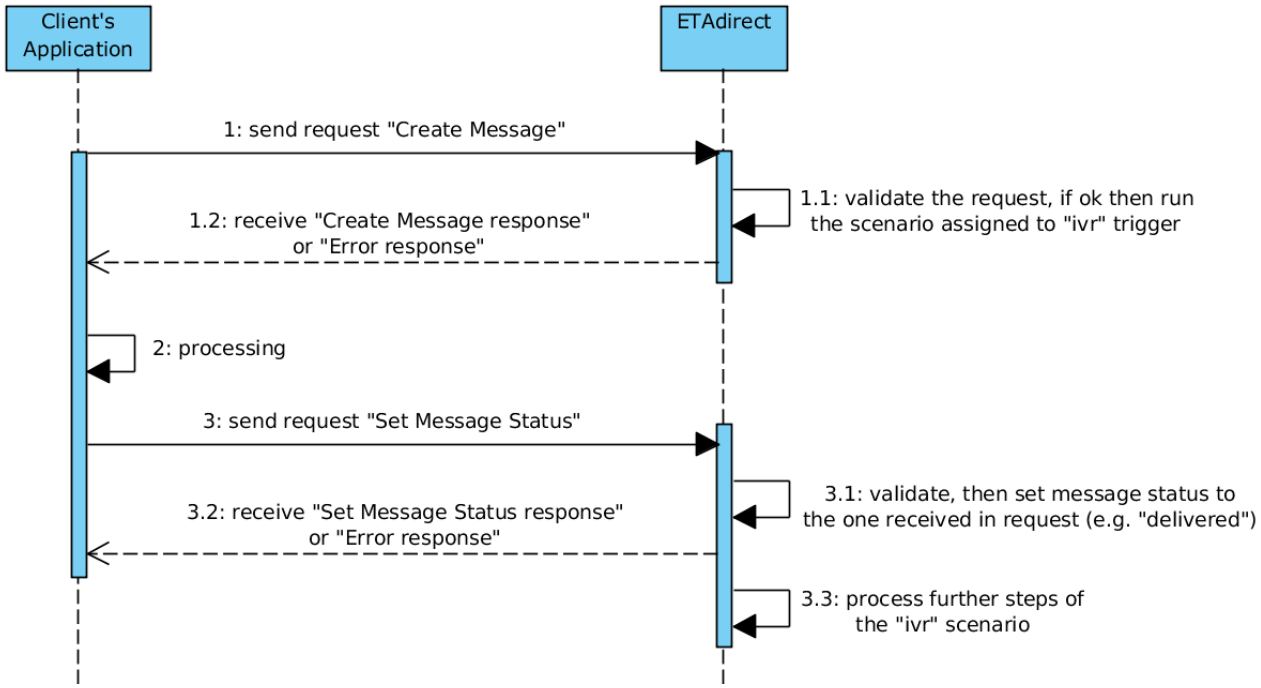

Figure 1: External Trigger Sequence Diagram

1. "Create Message" Request is generated in the Client's Environment

1.1. "Create Message" Request is validated in the ETAdirect Environment. If validation is performed successfully, the 'ivr' trigger is activated and the scenario is performed

If validation fails, the relevant error message is generated and sent to the Client's Environment

1.2 Response is returned from the ETAdirect environment and based on this response the Client specific process is initiated

2. Processing on the Client's Environment takes place

3. "Set Message Status" Request is generated on the Client's Environment. Set message status is needed to update the status of the previously generated message based on the processing result

3.1. The Set message status is validated on the ETAdirect environment. The targeted message status is updated

3.2. The "Set Message Status" Result is sent back to the Client's Environment

3.3. Further steps of the 'ivr' scenario are performed on the ETAdirect Environment.

3 External Trigger API Methods

External Trigger API consists of two methods:

- "Create Message" Method
- "Set Message Status" Method

Both methods are subject to validation. Validation fails if:

- Any mandatory parameter has empty value or is missing in the request
- Authentication fails
- There is no activity matching criteria (for the "Create Message" Request)
- There is no prior successful call to "Create Message" (for the "Set Message Status" Request)
- Message scenario for External Trigger is not set up properly
- System error occurs

In any of the above cases apply, a special Error Response is returned to the Client's environment.

If the request is successfully executed, the normal method response is returned ("Create Message" Response or "Set Message Status" Response).

3.1 "Create Message" Method

The "Create Message" Request is the initial HTTP/HTTPS POST request received from the external system. It defines a set of parameters used to find a specific activity in ETAdirect, for which the scenario will be started.

The Create Message Response is a content of the message generated by the Create Message Request.

Example:

```
# HTTP/HTTPS Post Request URL
http://api.etadirect.com/rest/external-trigger/v1/create-message/
# HTTP/HTTPS Post Body (split to several lines for readability)
 company=mycompany
 &auth_token=2f4ba7265107ba82c6d7d732d7fe3319ef7f0b
 &search_by=cphone
 &keyword=01234567890

# HTTP/HTTPS Response Body
<?xml version="1.0"?>
<xml>
  <data>
    <message_id>7409474</message_id>
    <date>2020-01-01</date>
    <from>16:00</from>
    <to>18:00</to>
  </data>
</xml>
```

3.1.1 Create Message Request Parameters

The Create Message Request contains the following parameters:

Name	Required	Default Value	Description	Example
company	Yes	none	Client's company name in ETAdirect environment (the instance name)	mycompany
keyword	Yes	none	the value to run the search by	1234567890
search_by	No	ccell	label of the field, label of the custom property that will be used to search for an activity. The following properties can be values of 'search_by' parameter : 1. customer_number 2. cname 3. appt_number 4. cemail 5. cphone 6. ccell 7. caddress 8. czip 9. labels of customer properties **Note:** Only properties defined in Manage Application→ Company Settings → Business Rules → Search Fields can be used	ccell
date_to	No	current date	the end date of the search in YYYY-MM-DD format	2010-03-17
date_from	No	date_to – 30 days	the start date of the search in YYYY-MM-DD format	2010-02-17
priority	No	complete, cancelled, pending, delete	priority of activity statuses used if several entities have been found with the same value of the search_by parameter (required form: activity statuses available for the Client in ETAdirect separated by a comma with no spaces). Available activity statuses are: cancelled, complete, suspended, started, pending, notdone	started, pending, notdone
auth_token	Yes	none	Authentication string. This string is provided to the Client's system by ETAdirect during integration, and is sent in every request as is	2f4ba7265107ba82c6d7d732d7fe3319ef7f0b

Name	Required	Default Value	Description	Example
output	No	vxml-2.0	The response will be returned in the format which is set in the Message Step Pattern. These formats also apply to error responses. Valid values: • **'vxml-2.0'** - indicates output in XML as expected by VXML client. • **'json'** - indicates output in JavaScript Object Notation (JSON) • other values may be added in future versions	vxml-2.0

3.1.2 Create Message Request Validation

If Create Message Request validation is completed successfully, the Create Message Response is returned to the Client's Environment and the Scenario is triggered. The detailed list of possible reasons of Create Message Request validation failure, parameters involved, and codes returned to the Client's system is provided below:

Parameters Involved	Error Description	Error code
company	mandatory parameter 'company' is missing or empty in the request	bad_request
keyword	mandatory parameter 'keyword' is missing or empty in the request	bad_request
date_to	value of 'date_to' parameter is not a valid calendar date (e.g. 2010-03-32) or has date format other than YYYY-MM-DD	bad_request
date_from	value of 'date_from' parameter is not a valid calendar date (e.g. 2010-03-32) or has date format other than YYYY-MM-DD	bad_request
search_by, keyword, date_to, date_from	for this company there are no activities with the requested 'keyword' parameter value of the 'search_by' parameter in the requested date range	activity_not_found
priority	some activities have been found but none of them have any of the statuses specified in the priority parameter (for example 'priority' is 'pending,complete' but the only activities that suit other parameters are of the 'cancelled' status), or 'priority' parameter has invalid value	activity_status

Parameters Involved	Error Description	Error code
company, auth_token	authentication failed (for example company or auth_token parameters values are invalid, user with login 'ivr' does not exist, etc.)	auth_failed
N/A	system error	system_error
N/A	message step misconfigured: • no messages have been created • there is more than one message step with notification method 'ivr' • the message content is empty • there is no message step with notification method 'ivr' in message scenario or Notification trigger 'IVR' misconfigured	message_step

3.1.3 Create Message Response

The Create Message Response is a content of the message generated by the Create Message Request. The Message Step Pattern must include the fields necessary for External Trigger API operation. These fields are:

- {mqid} – 'message_id' – must be in the Message Step Pattern, as it is necessary for the Set Message Status Request generation
- all fields and properties that contain values required by the Client's Application for further processing (e.g. technicians name, customer's address etc).

Example of Message Step Pattern in xml format with placeholders, usually needed for External Trigger API operation:

```
<?xml version="1.0"?>
<xml>
    <data>
        <message_id>{mqid}</message_id>
        <date>{route_date}</date>
        <from>{activity_service_window_start}</from>
        <to>{activity_service_window_end}</to>
    </data>
</xml>
```

Example of Message Step Pattern in json format:

```
{
  "message_id": “{mqid}”,
  "date" : "{route_date}",
  "wo_type" : "{activity_worktype_label|json}",
  "from" : "{activity_service_window_start}",
  "to" : "{activity_service_window_end}",
  "city" : "{activity_city|json}",
  "zip" : "{activity_zip|json}"
}
```

Example of Create Message Response in xml format:

```
<?xml version="1.0"?>
<xml>
```

```
  <data>
    <message_id>7409474</message_id>
    <date>2020-01-01</date>
    <from>16:00</from>
    <to>18:00</to>
  </data>
</xml>
```

Example of Create Message Response in json format

```
{
                "message_id": “7409474”,
                "date"      : "2014-01-27",
                "wo_type"   : "15",
                "from"      : "16:00",
                "to"        : "18:00",
                "city"      : "Kharkiv",
                "zip"       : "12345"
}
```

3.2 "Set Message Status" Method

The Set Message Status is an HTTP/HTTPS POST request used to set final status for message generated by prior call to "Create Message" Method (see Workflow Diagram for more details).

The Set Message Status can also provide data to be used further in the Message Scenario.

The method returns "Set Message Status" Response on success, or Error response in case of an error.

Example:

```
# HTTP/HTTPS Post Request URL
http://api.etadirect.com/rest/external-trigger/v1/set-message-status/
# HTTP/HTTPS Post Body (split to several lines for readability)
 company=mycompany
 &auth_token=2f4ba7265107ba82c6d7d732d7fe3319ef7f0b
 &message_id=4523423
 &status=delivered
 &data=%23params%3Fcustomer_confirmed%3Dyes
 &output=vxml-2.0

Example of Response in xml format:

# HTTP/HTTPS Response Body
<?xml version="1.0"?>
<vxml xmlns="http://www.w3.org/2001/vxml" version="2.0">
  <meta name="maintainer" content="voice.support@toatech.com"/>
  <form id="status_reply">
    <block>
      <disconnect/>
    </block>
  </form>
</vxml>
```

Example of Response in json format:

```
{
"status_changed":"OK"}
)
```

3.2.1 "Set Message Status" Request Parameters

"Set Message Status" Request contains the parameters described in the table below.

Name	Required	Default Value	Description	Example
company	Yes	none	Client's company name in ETAdirect environment (the instance name)	Bestcable
message_id	Yes	none	Message ID (is defined by ETAdirect system and obtained from Create Message Response)	290874
status	Yes	none	New message status. Valid values: '**failed**': transaction has failed. An error occurred. '**delivered**': transaction has been successfully completed. '**sent**': transaction has been successfully completed under some specified conditions (can be used to fulfill Client-specific logic)	delivered
description	No	empty	Status description. Different Inner Steps in message scenario can be executed based on description value	confirmed
data	No	empty	Auxiliary data to be set in the ETAdirect system	Post activity survey answers 1=y;2=N;3=Y
time_delivered_start	No	empty	Start of the time window communicated to the customer. Required format HH:MM (can be used to fulfill Client-specific logic)	12:30
time_delivered_end	No	empty	End of the time window communicated to the customer. Required format HH:MM (can be used to fulfill Client-specific logic)	14:30
duration	No	empty	Time it took to process this message on Client's side (e.g. duration of the call) in seconds	60
auth_token	Yes	none	Authentication string. This string is provided to the Client's system by ETAdirect during integration, and is sent in every request as is.	2f4ba7265107ba82c6d7d732d7fe3319ef7f0b

Name	Required	Default Value	Description	Example
output	No	vxml-2.0	Response format expected to be returned to the client Valid values: • **'vxml-2.0'** - indicates output in XML as expected by VXML client. • **'json'** - indicates output in JavaScript Object Notation (JSON) • other values may be added in future versions.	vxml-2.0

3.2.1.1 Updating Properties and Processing Activities with 'data'

"Set Message Status" Request can perform the following additional actions, based on the value of 'data' parameter:

- update all custom properties of activity, as well as specific set of activity fields
- cancel activities and make activities non-scheduled

The fields to be assigned and the corresponding values are passed in the 'data' parameter.

The **#params?** string is used as a delimiter between 'data' itself and the passed parameters. The format of the parameter line is similar to URL. The **&** character is used as the delimiter between different parameters. Names and values of parameters are URL encoded.

3.2.1.1.1 Updating Fields and Properties

All custom properties of inventory and activity can be updated with the "Set Message Status" Request sent by the client's application:

- To update the custom property the 'data' parameter should contain the following string:

  #params?property-label=value
- For example, to set 'cconfirmed' property to 'yes' the 'data' parameter should contain:

  #params?cconfirmed=yes

Note: Parameter values have to be URL-encoded, so 'data' parameter value:

```
#params?cconfirmed=yes
```

Becomes after url-encoding:

```
data=%23params%3Fcconfirmed%3Dyes
```

In addition to updating custom properties, a predefined set of activity fields can be updated with the "Set Message Status" Request sent by the client's application.

The fields that can be updated are as follows (the values in the list are labels of the fields):

- email (field label 'cemail')
- sms
- cell (synonym for 'sms')
- phone
- appt_number
- customer_number
- customer_name
- address
- city
- state
- zip

To update the field from the list, the 'data' parameter should contain the following string:

#params?field-label=value

For example to set 'phone' field to '123456' the 'data' parameter should contain:

#params?phone=123456

Note: fields 'address', 'city', 'state', and 'zip' are used by geocoding and, therefore, must contain valid values of the customer's address, city of residence, state and zip/post code. Other values will not be resolved correctly by the geocoding server.

3.2.1.1.2 Managing Activities

Activities can be cancelled or made unscheduled with the 'Set Message Status' Request sent by the client's application:

- To cancel an activity the 'data' parameter should contain the following string:
  #params?action=cancel_activity
- To make an activity unscheduled the 'data' parameter should contain the following string:
  #params?action=unschedule_activity

3.2.1.1.3 Bulk Action

One client's application "Set Message Status" Request can contain several updates, delimited with the **&** sign. For example, to set 'cconfirmed' property to '1', 'phone' field to '123456' and make activity unscheduled, the 'data' parameter should contain the following string:

```
#params?cconfirmed=1&phone=123456&action=unschedule_activity
```

Note: The length of the 'data' parameter should not exceed 255 characters. If submitted 'data' parameter value exceeds the limit, it can be correctly processed but will be truncated in the database.

3.2.2 Set Message Status Request Validation

If the Set Message Status Request validation is completed successfully, the Set Message Status Response is returned to the Client's Environment. The detailed list of possible reasons of "Set Message Status" Request validation failure, parameters involved, and error codes returned to the Client's system is provided below:

Parameters Involved	Error Description	Error code
company	mandatory parameter 'company' is missing or empty in the request	bad_request
message_id	'message_id' parameter has empty value or is missing in the request	bad_request
status	mandatory parameter 'status' is missing or empty in the request	bad_request
status	status in the request does not exist (is not 'failed', 'delivered', or 'sent')	bad_request
N/A	system error	system_error
company, auth_token	authentication failed (e.g. 'company' parameter or 'auth_token' parameter are invalid, user with login 'ivr' does not exist, etc.)	auth_failed

3.2.3 "Set Message Status" Response

The "Set Message Status" Response is sent to the Client's environment following successful "Set Message Status" Request validation. The Set Message Status Response has fixed content which depends on the 'output' parameter.

4 External Trigger API Usage Example

As it has already been mentioned, the External Trigger API can invoke any ETAdirect scenario developed in accordance with the Client's logic.

For example, when the "Create Message" Request validation is successful and an activity that meets all requirements set in the "Create Message" Request is found, ETAdirect can:

- check if 'VIP' property is checked for the activity found, and if this is the case, make a phone call where the phone number is the value of 'manager_phone' property of the activity found
- parse the "Set Message Status" Response and send the 'external trigger transaction failure' text to the Client's support, if 'status' parameter = 'failed'

Scenarios can perform complex logic and the only requirement that must be fulfilled is that one of the scenario start steps is with Notification Method 'IVR' and generates a "Create Message" Response.

4.1 Message Pattern of External Trigger Scenario Start Step

```
<?xml version="1.0"?>
<xml>
 <data>
   <message_id>{mqid}</message_id>
   <from>{delivery_window_start}</from>
   <to>{delivery_window_end}</to>
   <transfer_phone>{transfer_phone}</transfer_phone>
 </data>
</xml>
```

In the following example after a successful "Create Message" Request validation, the Client's Application will create the message, receive the activity delivery window (from-to), and transfer phone number which it can use in its further work, as well as the Message ID of the created message that will be used as one of the "Set Message Status" Request Parameters.

4.2 "Create Message" Request

When the scenario has been developed, the Client can send a request to ETAdirect via HTTP/HTTPS. If an error occurs, the Error Response will be returned to the Client's Application.
An example of a correct "Create Message" Request is provided below:
https://example.etadirect.com/rest/external-trigger/v1/create-message/?company=bestcable&auth_token=MTIzNDU2Nzg5MGFiY2RlZmdoCg&keyword=1234567890&search_by=cphone&date_from=2010-03-10&date_to=2010-03-17&priority=complete%2Ccancelled

Upon this request an activity will be found that:

Belongs to Bestcable Company	company=bestcable
Has cell phone value 1234567890	keyword=1234567890&search_by=ccell
Is to be performed in a period between the 10th of March 2010 and the 17th of March 2010	date_from=2010-03-10&date_to=2010-03-17
If several activities that meet these requirements are found and one of them have 'complete' status, it will be processed further. If there is no such activity with 'complete' status, the one with 'cancelled' status will be processed. If neither of the two can be found in the system, error response will be returned	priority=complete%2Ccancelled
auth_token	'auth_token' is a plain text password of an ETAdirect user, created specifically to process External Trigger. Prior to using External Trigger API, this user must be created in ETAdirect, the user's login must be 'ivr'

	and password must be set to the same value as sent in 'auth_token' parameter. The user must have the following permissions: 'SOAP'

4.3 "Create Message" Response

When such activity is found, "Create Message" Response is returned to the Client's Environment that contains the service window (from-to), and transfer phone number of the activity, and the Message ID of the created message, which will be used as one of the "Set Message Status" Request Parameters. For example:

```
<?xml version="1.0"?>
<xml>
 <data>
  <message_id>12345</message_id>
  <from>14:30</from>
  <to>18:30</to>
  <transfer_phone>1122334455</transfer_phone>
 </data>
</xml>
```

4.4 "Set Message Status" Request

"Set Message Status" Request must contain the company name, Message ID (taken from the Create Message Response), the new Message status, and status Description (optional).

An example of the correct "Set Message Status" Request is shown below:

https://example.etadirect.com/rest/external-trigger/v1/set-message-status/?company=bestcable&auth_token=MTIzNDU2Nzg5MGFiY2RlZmdoCg&message_id=12345&status=delivered&description=CONFIRMED_

This "Set Message Status" Request means that:

For Bestcable Company	company=bestcable
Message with ID 12345	message_id=12345
Has been delivered	status=delivered
And confirmed	description=CONFIRMED

4.5 "Set Message Status" Response

After a successful "Set Message Status" Request, the response is returned. The "Set Message Status" response is static text that depends on the request parameter 'output'.

If request parameter 'output' is absent or is equal to 'vxml-2.0' then response is:

```
<?xml version="1.0" ?>
<vxml version="2.0" xmlns="http://www.w3.org/2001/vxml">
  <meta name="maintainer" content="voice.support@toatech.com"/>
  <form id="status_reply">
  <block>
  <disconnect/>
  </block>
  </form>
</vxml>
```

If request parameter 'output' is equal to 'json' then response is:

```
{"status_changed":"OK"}
```

5 Transaction Errors

5.1 Error Response

Error Response is generated whenever "Create Message" or "Set Message Status" operation fails.

Error Response contains two fields:

- error code – a machine-readable constant string stating the nature of error (e.g. "bad_request")
- error detail – a human-readable string describing what happened in English.

Error response format depends on the 'output' parameter of request.

If 'output' parameter value is **vxml2.0** then Error Response is an XML document with the following layout:

```
# HTTP/HTTPS Request
http://api.etadirect.com/rest/external-trigger/v1/set-message-status
 ?output=vxml-2.0


# HTTP/HTTPS Response body
<?xml version="1.0" ?>
<xml>
  <data>
    <error_code>bad_request</error_code>
    <error_detail>Parameter is absent: 'status'</error_detail>
  </data>
</xml>
```

If 'output' parameter value is **json** then Error Response is a JSON document with the following layout:

```
# HTTP/HTTPS Request
http://api.etadirect.com/rest/external-trigger/v1/set-message-status
 ?output=json

# HTTP/HTTPS Response body
{
  "error_code" : "bad_request",
  "error_detail" : "Parameter is absent: 'status'"
}
```

If 'output' parameter value is set to unknown value, then default 'output' parameter value is used: vxml-2.0:

```
# HTTP/HTTPS Request
```

```
http://api.etadirect.com/rest/external-trigger/v1/set-message-status
 ?output=blarg

# HTTP/HTTPS Response body
<?xml version="1.0" ?>
<xml>
  <data>
    <error_code>bad_request</error_code>
    <error_detail>Parameter is invalid: 'output'. Value: 'blarg'. Allowed values are:
('vxml-2.0','json')</error_detail>
  </data>
</xml>
```

5.2 Error Codes

- 'bad_request' – returned when request is missing a required parameter, etc
- 'auth_failed' – returned when authentication failed
- 'activity_not_found' – returned when no activities matching the search criteria were found
- 'activity_status' – returned when activity was found but has an unexpected status (depending on 'priority' parameter of request)
- 'message_step' – returned when Message Scenario for External Trigger is misconfigured
- 'system_error' – returned when there is a problem in ETAdirect and request cannot be processed (one of backends is down, etc).

6 Changes and Improvements

The following changes took place in version 4.5.

1. Methods have been renamed to match their actions:

- 'Basic' method renamed to 'Create Message' method
- 'Status' method renamed to 'Set Message Status' method

2. URLs have been sanitized:

- URL for 'Create Message' method has changed

from: "$host/ivr/index.php"

to: "$host/rest/external-trigger/v1/create-message/"

- URL for 'Set Message Status' method has changed

from: "$host/ivr/status.php"

to: "$host/rest/external-trigger/v1/set-message-status/"

3. New parameters have been added to both methods:

- 'auth_token' parameter is now required for both methods – it is used to authenticate a request
- 'output' parameter is now optional and has 2 possible values:

'vxml-2.0' – default. Old behavior. Returns responses as expected by Voxeo

'json' – returns responses as JSON objects

4. Existing parameter 'company' has a different meaning. In 4.4 it was a company name, as opposed to 4.5 where it is an instance name

5. No customization is required for operation:

- File templates no longer need to be put into front-end "wwwcustom" folder
- 'Create Message' response is now an actual message body as configured in Message Step Pattern screen
- 'Set Message Status' response is now a static text, which depends on the 'output' parameter of a request
- Error response is now either XML or JSON text, depending on the 'output' parameter of the request.

6. Error codes have been added.