Using HTTP API - ‘sendExternalAlarm’

Introduction

‘Security Management System Server’ software allows integration with external systems and can receive alarms sent from the external systems.

This document describes HTTP API – ‘sendExternalAlarm’ which is used by external systems to send external alarm to the ‘Security Management System Server’ software.

Before the external system sends alarm to the ‘Security Management System Server’ software, the ‘Security Management System Server’ software needs to be configured to receive the alarm.

This document has following sections –
(a) ‘Security Management System Server’ software configuration – for receiving the external alarms
(b) API description -‘sendExternalAlarm’
(c) Testing the API using ‘Postman’ application. Postman application is free 3rd party tool, which can be used for quick testing of various HTTP APIs. It allows users to format and send HTTP requests and receive the HTTP responses.

It is advised to follow this document, to configure the ‘Security Management System Server’ software and to test the API using Postman. This confirms that configuration is correctly done and the API is functioning properly. Then the ‘API description’ can be reviewed in details and same can be implemented in the external system software. The API tests using Postman application can be used as reference, during API integration.

The ‘Security Management System Server’ software configuration involves adding one or more ‘External alarm modules’ in the ‘Security Management System Server’ software.
(a) Each ‘External alarm module’ added to ‘Security Management System Server’ software indicates one ‘alarm source’ associated with the external system.
(b) Each ‘External alarm module’ can be linked with one video source (e.g. video camera channel) already configured in the ‘Security Management System Server’ software. This is used to associated video evidence with alarms received for that ‘External alarm module’
(c) For each ‘External alarm module’, 32 types of ‘external alarms’ can be generated. ‘Security Management System Server’ software defines following 32 types of external alarms –

i. External Alarm 1
ii. External Alarm 2
iii. External Alarm 3
iv. External Alarm 4
v. External Alarm 5

vi. External Alarm 6
vii. External Alarm 7
viii. External Alarm 8
ix. External Alarm 9
x. External Alarm 10
xi. External Alarm 11
xii. External Alarm 12
xiii. External Alarm 13
xiv. External Alarm 14
xv. External Alarm 15
xvi. External Alarm 16
xvii. External Alarm 17
xviii. External Alarm 18
xix. External Alarm 19
xx. External Alarm 20
xxi. External Alarm 21
xxii. External Alarm 22
xxiii. External Alarm 23
xxiv. External Alarm 24
xxv. External Alarm 25
xxvi. External Alarm 26
xxvii. External Alarm 27
xxviii. External Alarm 28
xxix. External Alarm 29
xxx. External Alarm 30
xxxi. External Alarm 31
xxxii. External Alarm 32

The integration design hence involves the first step - to finalize the 'number of alarm sources' available with it and add one 'External alarm module' for each 'alarm source'
The second step in integration design is listing the 'types of external alarms' which can be generated by the 'alarm sources' and associating each type of external alarm with one of the 32 types listed above.

For example, we will consider a fire alarm system with 10 detectors. Each detector is capable of generating 2 types of alarms – 'Smoke detected' and 'Fire detected'.

(a) In this case, 10 'External alarm modules' will be configured in the 'Security Management System' server software. Each 'External alarm module' will be associated with a detector from external system (this association is flexible and can be finalized by the integration team) –
Detector 1 = EA001
Detector 2 = EA002
Detector 3 = EA003
Detector 4 = EA004

Detector 6 = EA005
Detector 7 = EA006
Detector 8 = EA007
Detector 9 = EA008
Detector 10 = EA009
Detector 11 = EA010

(b) The types of alarms may be associated as (this association is flexible and can be finalized by the integration team) –
'Smoke detected' = 'External Alarm 11'
'Fire detected' = 'External Alarm 23'

(c) When 'Smoke detected' alarm is generated in the external system from 'Detector 4'; it will use the 'sendExternalAlarm' API, and will set 'External alarm module name = EA004' and 'External alarm type = External Alarm 11'

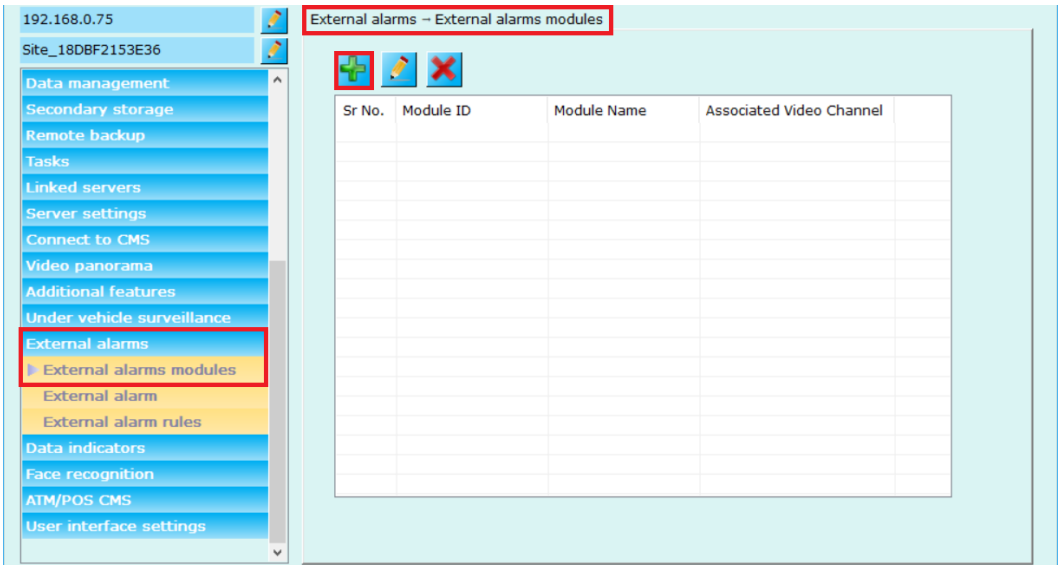
Security Management System Server configuration

This section explains steps to add one ‘External alarm module’ to the ‘Security Management System’ server software.

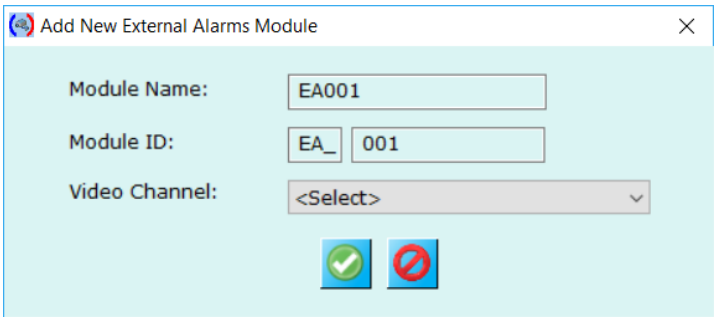
Same steps can be repeated to add multiple ‘External alarm modules’ to the ‘Security Management System’ server software.

1. Execute the ‘Security Management System Server’ software.

2. Navigate to ‘External alarms -> External alarm modules’ page from the left side navigation panel



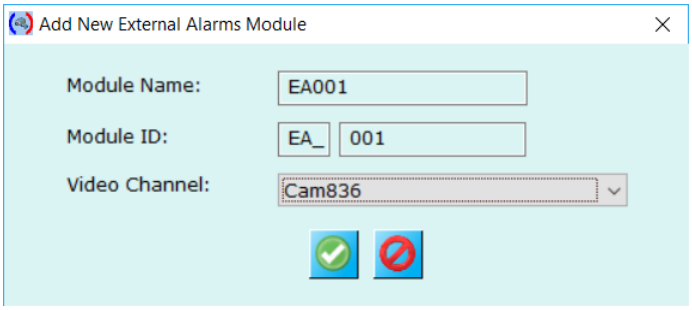
3. Click on ‘Add external alarms module…’ button to popup a dialog box as shown in below image



4. Enter ‘Module Name’ – any unique string (among all configured external alarm modules in the server software) which will identify the alarms module.

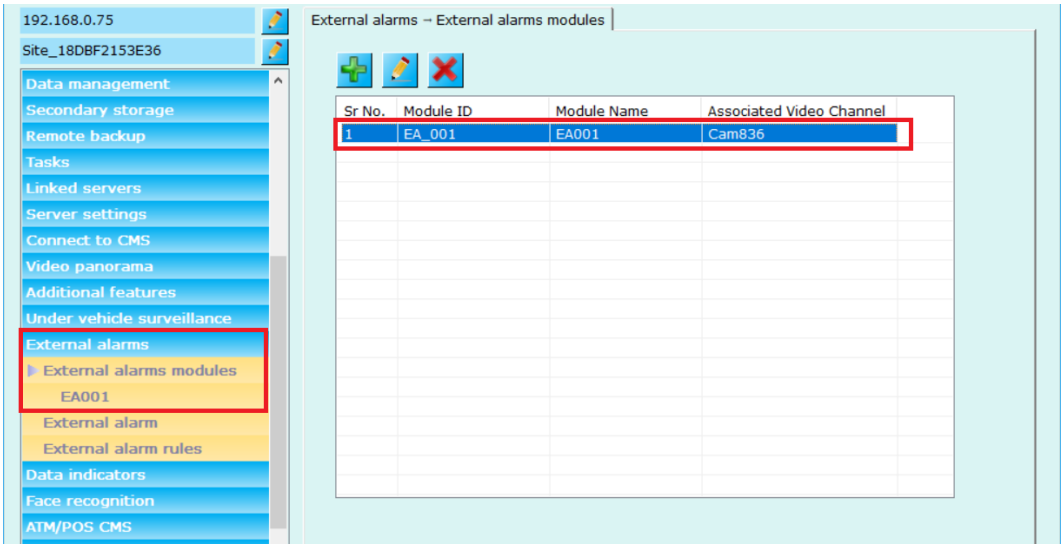
Enter ‘Module ID’ – any unique non-unicode string; or accept the default.

Video channel – select video channel from available options. This is used to associate the external alarm source to any configured video channel. The list contains video channels which are already configured in the ‘Security Management System Server’ software.



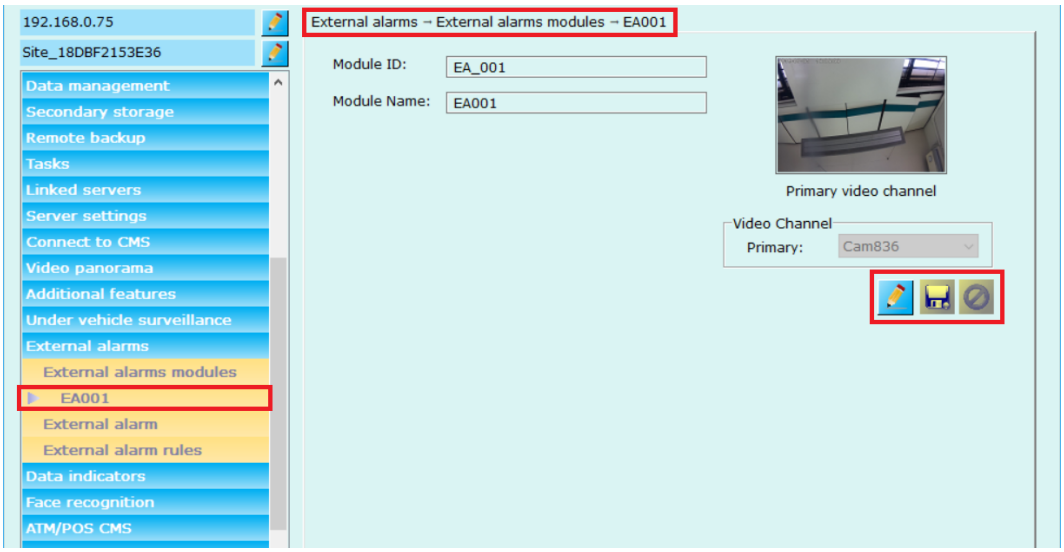
5. After configuring the parameters, click on ‘Ok’ button to finish adding the module in the ‘Security Management System Server’ software.

6. Image below shows ‘EA001’ module with ‘EA_001” module ID is added to the system with ‘Cam836’ is associated with the module.



7. Click on any added ‘External alarms modules’ from the list and use ‘Edit’ button to edit parameters. Remove button can be used to remove selected alarms module from the system.

8. Separate link is provided in the tab control for each added ‘External alarms sources’ module as shown in below image. Click on the link to see the details for the alarm source.



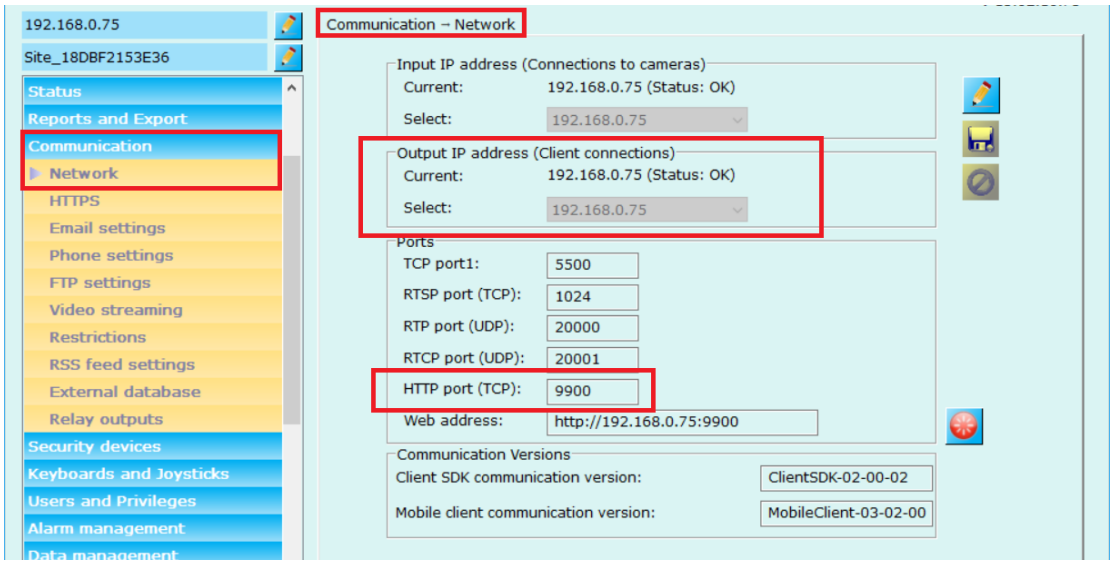
9. Video channel can be edited using this dialog. Use 'Edit' button available on the dialog to enable 'Video channel' user interface. Select video channel from the available options and click on 'Save' button to save the changes. 'Cancel' button can be used to discard the unsaved changes for 'Video channel' settings

Security Management System Server – IP address and port number

The external systems need to send the HTTP requests to the IP address and HTTP port number associated with the 'Security Management System' server software.

To locate the IP address and the HTTP port number associated with the 'Security Management System' server software, please follow the steps listed below -

1. In the 'Security Management System Server' software, navigate to 'Communication -> Network' page from the left side navigation panel



2. Note the IP address listed under 'Output IP address (Client connections) -> Current'. Also please ensure that the status displayed next to this IP address is 'OK'

3. Note the 'HTTP port (TCP)' value

Security Management System Server – New user

The HTTP APIs can be called by authorized users. The authorization requires the username and password. Hence a new user needs to be added to the 'Security Management System' server software, when using the HTTP APIs.

1. In the 'Security Management System Server' software, navigate to 'Users and Privileges -> Users' page from the left side navigation page.

2. Please add a new user with 'Operator' privilege.

HTTP API - sendExternalAlarm

Request details -

Server IP address:	IP address associated with the 'Security Management System' server software
Server HTTP port number:	HTTP port associated with the 'Security Management System' server software
HTTP request URI:	/sendExternalAlarm Note – the request URI is case sensitive
Request type:	HTTP POST
Authorization:	HTTP Digest Authentication
Request headers:	The request should include the 'Content-Length' header, as defined in standard HTTP specifications
POST data:	In XML format – *<NData> <NRequestType>smsExternalAlarmNotificationRealTime</NRequestType> <NType>**External Alarm 11**</NType> <DataStandard> <SMSModuleName>**EA001**</SMSModuleName> </DataStandard> <DataCustom/> </NData>* The 2 strings highlighted in yellow background will be different in each request - (a) 'External Alarm 11' string indicates the alarm type. It can be any string associated with the 32 exernal alarm types available in the 'Security Management System Server' software (b) 'EA001' string is for the 'External alarm module name'. It should match the name of the target 'External alatm module' defined in the 'Security Management System' server software.

Response details -

HTTP response status code:	(a) '200 OK' indicates the request was processed by the 'Security Management System' server software. Please note that this is HTTP request processing status code and NOT return code associated with the processing from within 'Security Management System' server software. (b) Any other status code = standard HTTP response status
Response data:	In XML format – *<NResponse> <NRequestType>smsExternalAlarmNotificationRealTime</NRequestType> <ResponseStandard> <RCode>1</RCode> <RDescription>Success</RDescription> </ResponseStandard> </NResponse>* The 2 strings highlighted in yellow background may be different in each response - <RCode> value = indicates the return code related to the processing from 'Security Management System' server software. <RDescription> value = human readabale string which eplains the return code
Return codes:	(a) '<RCode> value => 1' indicates success (b) '<RCode> value = 0' indicates unspecified error (c) '<RCode> value < 0' value indicates specific error

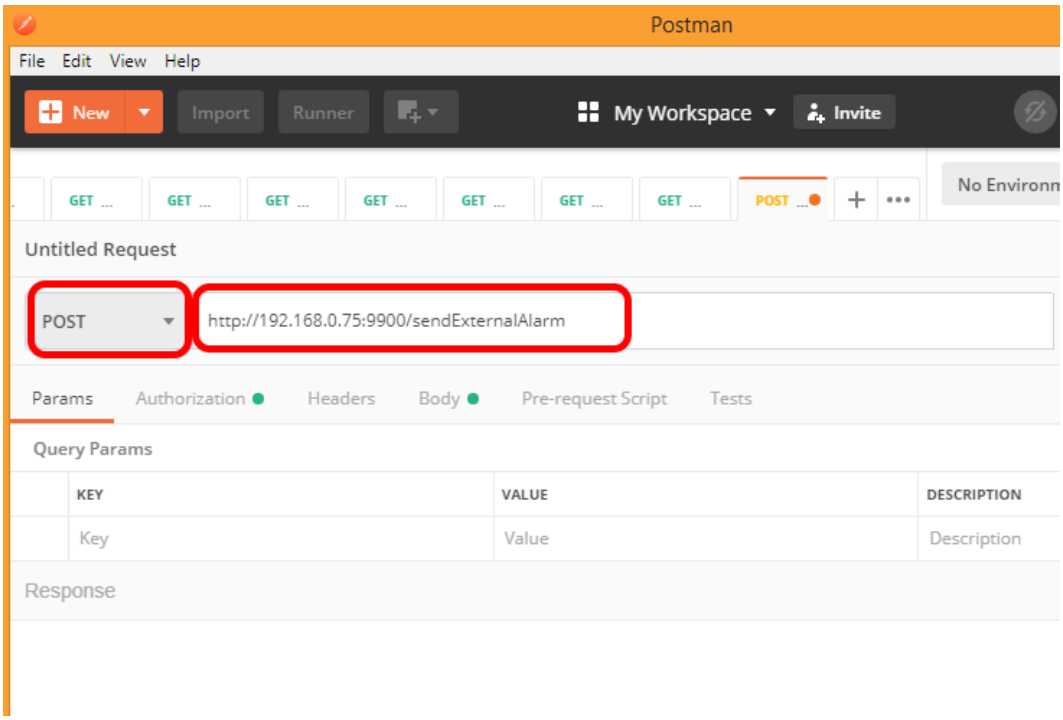
API test using Postman application

Postman application is free 3rd party tool, which can be used for quick testing of various HTTP APIs. It allows users to format and send HTTP requests and receive the HTTP responses.

1. Please download and install the 'Postman' application.
   Note – this documentation uses 'Postman for Windows - version 7.3.5'.
   However latest available version for any suitable OS / browser can be used for the tests.

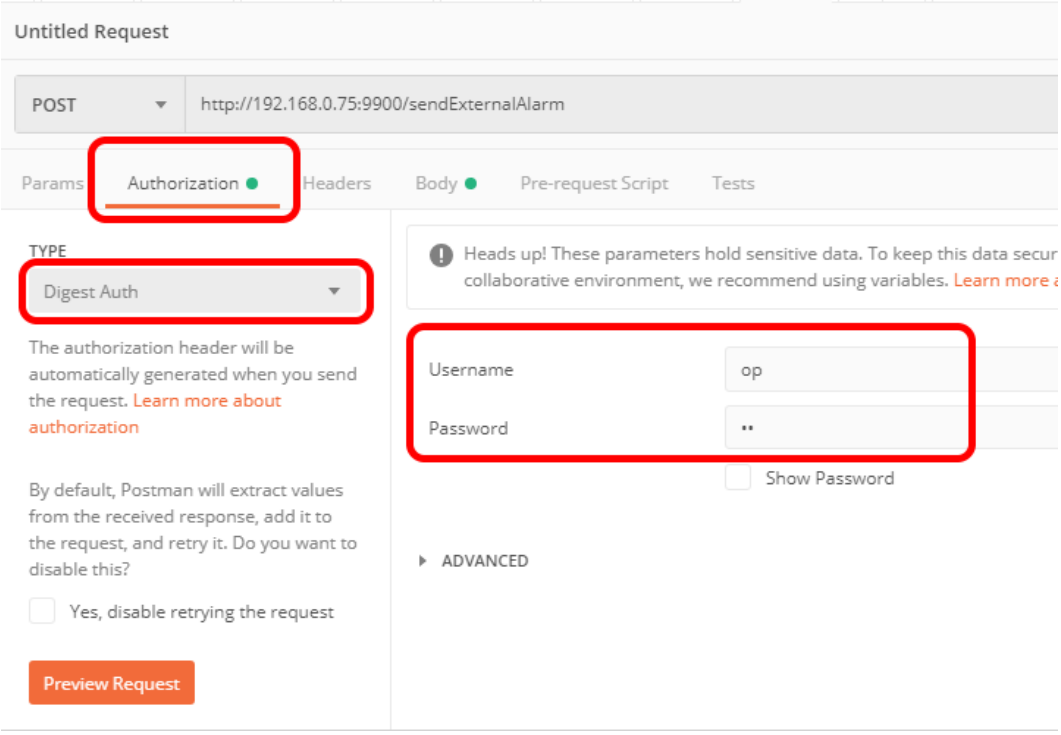
2. Execute the Postman application

3. Create a new request



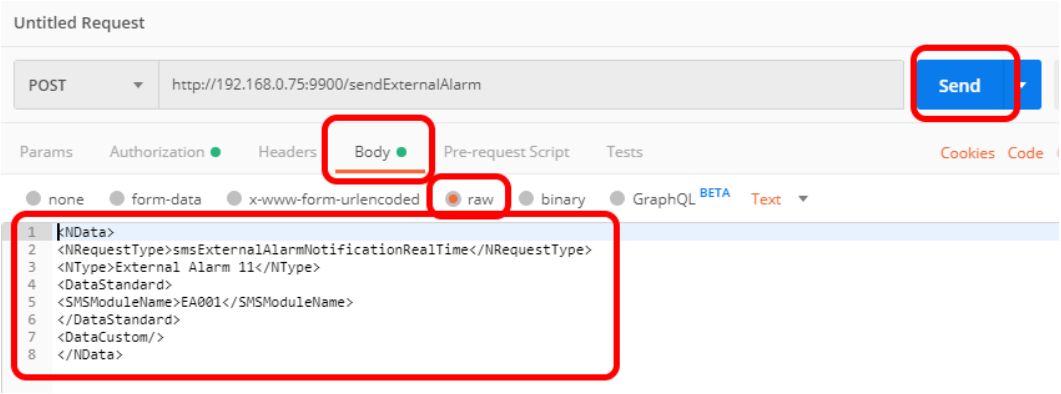
   Select 'request type' as 'Post'
   Type the URL. In this example we are using URL –
   http://192.168.0.75:9900/sendExternalAlarm
   Where –
   (a) '192.168.0.75' is the IP address associated with the 'Security Management System' server software
   (b) '9900' is the port number associated with the 'Security Management System' server software

4. Access the 'Authorization' tab



Select TYPE 'Digest Auth'
Type the 'Username' and 'Password'. This is the login information for 'Operator' privilege user configured in the 'Security Management System' server software.

5. Access the 'Body' tab



Select the option 'raw'
Type the XML string –

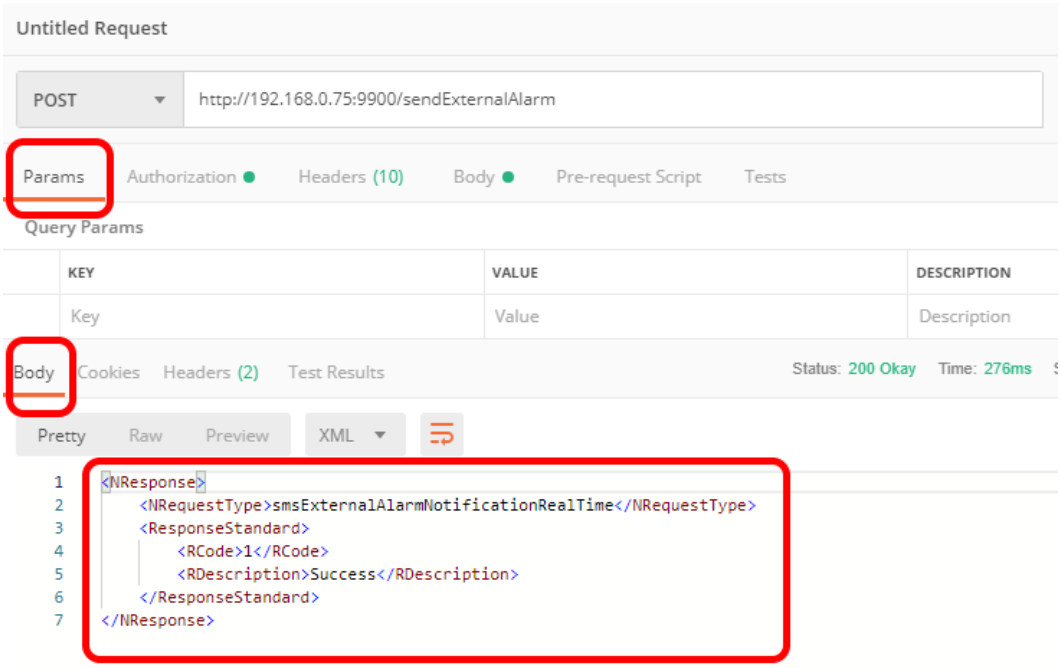
<NData>
<NRequestType>smsExternalAlarmNotificationRealTime</NRequestType>
*<NType>**External Alarm 11**</NType>*
<DataStandard>
*<SMSModuleName>**EA001**</SMSModuleName>*

</DataStandard>
<DataCustom/>
</NData>

The 2 strings highlighted in yellow background should match -
i. ‘External Alarm 11’ string indicates the alarm type. It can be any string associated with the 32 exernal alarm types available in the ‘Security Management System Server’ software
ii. ‘EA001’ string is for the ‘External alarm module name’. It should match the name of the target ‘External alatm module’ defined in the ‘Security Management System’ server software.

6. Click on the ‘Send’ button. The Postman application will send the request to ‘Security Management System’ server software, and will receive the response and will display it.

7. Please access the ‘Params’ tab to view the response details



Please access the ‘Body’ sub-tab, which will show the response XML data.