

# **Diamond User Guide**

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## 1. HTTPS GET Request

HTTPS GET request should be sent to the appropriate host:port in the following format:

[attributeName1]=[attributeValue1];...;[attributeNameN]=[attributeValueN]

Example:

https://xxx.xxx.xxx.xxx:xxxx/action=MacroCommand;macroName=PingMacro;username=YourUserName;password=YourPassword

3<sup>rd</sup> party will be supplied with personal account on GW (username/password) and list of command that this certain user will be allowed to call.

Each command is invoked synchronously. The response message will contain the operation result code and short description.

Operation is considered as successfully completed if it responds with code 6015, 2001, 8019 or 6017. All other response codes are either warning or error messages with different level of severity defined by first digit in response code. Higher values are pointing on fatal errors while lower code values are warning or success messages.

**Note 1:** If Macro Command response code is 4002 do not retry the operation. In this case contact Azercell ICT/Helpdesk for further information.

**Note 2:** Response codes from 8016 to 8022 (including) are only for special operations with postpaid subscribers. Contact Azercell for additional information if your service uses these operations. In case you get 8022 error response code contact Azercell ICT/Helpdesk for further information

**Note 3:** If response code is 8012, it means that you have not access to use this macro command or there is invalid (or missed) parameter in request or you have reached your limit for 1 minute. If you have reached limit, please stop all commands for 1 minute, in other case don't retry this command.

## 2. HTTP/HTTPS GET Request Attributes Listing

Attribute Name	Possible Values
Action	alphanumeric
macroName	alphanumeric
Username	alphanumeric
Password	alphanumeric
amount (optional)	Numeric (default value = 1)
MSISDN	format 99450XXXXXXX
subscriberNumber	format 50XXXXXXX
externalData2	Client transaction identifier, alphanumeric, 255 byte (optional)
serviceName	alphanumeric

## 3. Commands request/response sample

### *Simple ping command*

Request:

https://127.0.0.1:4483/action=MacroCommand;macroName=PingMacro;username=xxxxx;password=xxx

Response:

```
<?xml
version="1.0"?><MethodResponse><ResponseCode>6015</ResponseCode><ResponseDescription>DI
AMOND_RESPONSE_OK</ResponseDescription></MethodResponse>
```

**GetSubscriberType – returns whether a subscriber is prepaid or postpaid**

**Here only the new version is described, since the old one was not described at all**

Request format:

https://127.0.0.1:4457/action=MacroCommand;macroName=SomeMacro;subscriberNumber=5XXXXXX  
XXX;username=xxxx;password=xxxx;externalData2=UniqueClientSideTransactionID;serviceName=XYZ;

Examples (with varying parameters):

subscriberNumber=34502210295;

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>7004</ResponseCode>
<ResponseDescription>subscriberNumber must be 9 digits</ResponseDescription>
<TransactionID>4360094113178448370</TransactionID>
</MethodResponse>
```

-- format OK, but no such number

subscriberNumber=506969696;

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>7004</ResponseCode>
<ResponseDescription>No such subscriber</ResponseDescription>
<TransactionID>436310181375985802</TransactionID>
</MethodResponse>
```

-- Normal request for prepaid

subscriberNumber=503900002;

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>0</ResponseCode>
<ResponseDescription>OK</ResponseDescription>
<SubscriberType>1</SubscriberType><Description>Prepaid</Description>
```

```
<TransactionID>436009365338017045</TransactionID>
</MethodResponse>
```

-- Normal request for postpaid  
subscriberNumber=502210295;

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>0</ResponseCode>
<ResponseDescription>OK</ResponseDescription>
<SubscriberType>0</SubscriberType><Description>Postpaid</Description>
<TransactionID>436009353677697750</TransactionID>
</MethodResponse>
```

***Direct debit (Note, here Azercell has made some changes. The request format is the same. The response might be slightly different so pay attention to highlighted changes).***

Used to add to or subtract from subscriber's main account. It used for both postpaid and prepaid subscribers.

Request:

```
https://127.0.0.1:4444/action=MacroCommand;amount=1;macroName=Charge123;MSISDN=99450XX
XXXXX;username=yourname;password=yourpass;externalData2=UniqueClientSideTransactionID;servic
eName=XYZ69
```

Notes: amount parameter represent multiplier to the tariff assigned on billing system side. For example: Tariff for Charge123 is set to 10AZN. By setting amount=2 it is possible to charge subscriber 20AZN as  $10 \times 2 = 20$ .

Service name parameter is mandatory parameter from 01.11.2016. You can write short description of service, which means subscriber charged for this service. Example values: HavaMelumat, ValyutaKursu, etc...

Response prepaid:

Old:

```
<?xml
version="1.0"?><MethodResponse><ResponseCode>2001</ResponseCode><Description>DIAMETER_
SUCCESS</Description><Amount>1</Amount><Cost>22.0</Cost><TransactionID>858656502</Transa
```

ctionID></MethodResponse>

New:

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>2001</ResponseCode>
<ResponseDescription>DIAMETER_SUCCESS</ResponseDescription>
<Amount>1</Amount><Cost>0.6</Cost> <TransactionID>4360114832267176261</TransactionID>
</MethodResponse>
```

Response postpaid:

Old:

```
<?xml
version="1.0"?><MethodResponse><ResponseCode>6017</ResponseCode><Description>DIAMOND_
CDR_GENERATED</Description><Amount>1</Amount><Cost>0.0</Cost><TransactionID>858675570<
/TransactionID></MethodResponse>
```

New:

```
<?xml version="1.0"?>
<MethodResponse>
<ResponseCode>6017</ResponseCode>
<ResponseDescription>DIAMOND_CDR_GENERATED</ResponseDescription>
<Amount>1</Amount><Cost>0.0</Cost> <TransactionID>4360100711137411700</TransactionID>
</MethodResponse>
```

### ***Payment profile assignment (only prepaid, UCIP)***

Request:

https://127.0.0.1:4457/action=MacroCommand;macroName=YYYWC0DOT6;subscriberNumber=5XXXX  
XXXX;username=xxxx;password=xxxx;externalData2=UniqueClientSideTransactionID

Response:

```
<?xml version="1.0" encoding="utf-
```

```
8"?><methodResponse><params><param><value><struct><member><name>currency1</name><value><string>AZM</string></value></member><member><name>languageIDCurrent</name><value><i4>1</i4></value></member><member><name>masterAccountNumber</name><value><string>506279346</string></value></member><member><name>originTransactionID</name><value><string>3303867406</string></value></member><member><name>refillType</name><value><i4>2</i4></value></member><member><name>responseCode</name><value><i4>0</i4></value></member><member><name>segmentationID</name><value><string>WC</string></value></member><member><name>transactionAmount</name><value><string>1.2</string></value></member><member><name>transactionCurrency</name><value><string>AZM</string></value></member></struct></value></param></params></methodResponse><Description><Status>Successful</Status><TransactionID>3303867406</TransactionID></Description>
```

transactionAmountRefill – is an additional optional parameter which can be used to assign one of the predefined values (configured on prepaid billing side)

***SetUsageAccumulator (only prepaid, MINSAT,) – MINSAT will be phased out. If you are not using it, do not start.***

Request:

https://127.0.0.1:8463/action=MacroCommand;macroName=SetAccumulator;subscriberNumber=5XXXXXXX;username=test;password=XXXX;01=68,20140317

accumulator – 01

value – 68

20140317 – expire date (yyyymmdd)

```
<?xml
```

```
version="1.0"?><MethodResponse><ResponseCode>0</ResponseCode><ResponseDescription>Successful</ResponseDescription><ResponseDateTime>2014031614.40.48</ResponseDateTime><TransactionID>5445217366</TransactionID></MethodResponse>
```

***Get Balance Information (only prepaid, UCIP)***

Request:

https://127.0.0.1:8463/action=MacroCommand;macroName=GetBalanceInfo;subscriberNumber=5XXXXXXX;username=XXX;password=XXXX

```
<?xml version="1.0" encoding="utf-
```

```
8"?><methodResponse><params><param><value><struct><member><name>accountValue1</name><value><string>98.56</string></value></member><member><name>creditClearanceDate</name><value><dateTime.iso8601>20140907T00:00:00+0000</dateTime.iso8601></value></member><member><name>currency1</name><value><string>AZM</string></value></member><member><name>dedicatedAccountInformation</name><value><array><data><value><struct><member><name>dedicatedAccountActiveValue1</name><value><string>0</string></value></member><member><name>dedicatedAccountID</name><value><i4>1</i4></value></member><member><name>dedicatedAccount
```



[illegible]

[illegible]

```

tring></value></member><member><name>dedicatedAccountID</name><value><i4>52</i4></value>
</member><member><name>dedicatedAccountUnitType</name><value><i4>1</i4></value></me
mber><member><name>dedicatedAccountValue1</name><value><string>0</string></value></mem
ber><member><name>startDate</name><value><dateTime.iso8601>99991231T00:00:00+1200</dat
eTime.iso8601></value></member></struct></value><value><struct><member><name>dedicatedAc
countActiveValue1</name><value><string>0</string></value></member><member><name>dedicat
edAccountID</name><value><i4>54</i4></value></member><member><name>dedicatedAccountUn
itType</name><value><i4>1</i4></value></member><member><name>dedicatedAccountValue1</n
ame><value><string>0</string></value></member><member><name>startDate</name><value><da
teTime.iso8601>99991231T00:00:00+1200</dateTime.iso8601></value></member></struct></value>
<value><struct><member><name>dedicatedAccountActiveValue1</name><value><string>0</string>
</value></member><member><name>dedicatedAccountID</name><value><i4>71</i4></value></m
ember><member><name>dedicatedAccountUnitType</name><value><i4>1</i4></value></member>
<member><name>dedicatedAccountValue1</name><value><string>0</string></value></member><
member><name>startDate</name><value><dateTime.iso8601>99991231T00:00:00+1200</dateTime
.iso8601></value></member></struct></value></data></array></value></member><member><nam
e>currentLanguageID</name><value><i4>1</i4></value></member><member><name>originTransac
tionID</name><value><string>5446294125</string></value></member><member><name>response
Code</name><value><i4>0</i4></value></member><member><name>serviceClassCurrent</name>
<value><i4>5</i4></value></member><member><name>serviceFeeDate</name><value><dateTime.
iso8601>20140311T00:00:00+0000</dateTime.iso8601></value></member><member><name>servic
eRemovalDate</name><value><dateTime.iso8601>20140907T00:00:00+0000</dateTime.iso8601></v
alue></member><member><name>supervisionDate</name><value><dateTime.iso8601>20140311T0
0:00:00+0000</dateTime.iso8601></value></member></struct></value></param></params></meth
odResponse><Description><Status>Successful</Status><TransactionID>5446294125</TransactionID>
</Description>

```

### ***Get Usage Accumulators Information (only prepaid, UCIP)***

Request:

<https://127.0.0.1:8463/action=MacroCommand;macroName=GetAccumulatorsInfo;subscriberNumber=5XXXXXXX;username=XXX;password=XXXX>

Response:

```

<?xml version="1.0" encoding="utf-
8"><methodResponse><params><param><value><struct><member><name>accumulatorInformatio
n</name><value><array><data><value><struct><member><name>accumulatorEndDate</name><val
ue><dateTime.iso8601>20140416T00:00:00+0000</dateTime.iso8601></value></member><member>
<name>accumulatorID</name><value><i4>1</i4></value></member><member><name>accumulat
orStartDate</name><value><dateTime.iso8601>20140317T00:00:00+0000</dateTime.iso8601></valu
e></member><member><name>accumulatorValue</name><value><i4>884</i4></value></member>
</struct></value><value><struct><member><name>accumulatorEndDate</name><value><dateTime

```

```
.iso8601>20140405T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorID</name><value><i4>2</i4></value></member><member><name>accumulatorStartDate</name><value><dateTime.iso8601>20140306T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorValue</name><value><i4>0</i4></value></member></struct></value><value><struct><member><name>accumulatorEndDate</name><value><dateTime.iso8601>20140405T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorID</name><value><i4>3</i4></value></member><member><name>accumulatorStartDate</name><value><dateTime.iso8601>20140306T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorValue</name><value><i4>0</i4></value></member></struct></value><value><struct><member><name>accumulatorEndDate</name><value><dateTime.iso8601>20140405T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorID</name><value><i4>4</i4></value></member><member><name>accumulatorStartDate</name><value><dateTime.iso8601>20140306T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorValue</name><value><i4>0</i4></value></member></struct></value><value><struct><member><name>accumulatorEndDate</name><value><dateTime.iso8601>20140317T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorID</name><value><i4>5</i4></value></member><member><name>accumulatorStartDate</name><value><dateTime.iso8601>20140316T00:00:00+0000</dateTime.iso8601></value></member><member><name>accumulatorValue</name><value><i4>0</i4></value></member></struct></value></data></array></value></member><member><name>currentLanguageID</name><value><i4>1</i4></value></member><member><name>originTransactionID</name><value><string>5446284922</string></value></member><member><name>responseCode</name><value><i4>0</i4></value></member><member><name>serviceClassCurrent</name><value><i4>5</i4></value></member></struct></value></param></params></methodResponse><Description><Status>Successful</Status><TransactionID>5446284922</TransactionID></Description>
```

#### Note:

In case of charging Postpaid Subscriber you get 6017 response code on success. If it is Prepaid Subscriber you get 2001 response code. For UCIP/MINSAT requests response code 0 means success.

externalData2 – is an optional field. It should contain client side transaction ID. These ID can be used by client to fetch the result of previously sent command. Diamond Proxy does check uniqueness of the externalData2. As a result it is client responsibility to guarantee its uniqueness; otherwise it will be not possible to fetch the result of previously sent commands.

## 4. CTRIM Macro command (this part might be outdated)

It fetches the result of previously send command by provided UniqueClientSideTransactionID field (i.e externalData2).

If initial request used MSISDN field:

<https://127.0.0.1:4478/action=MacroCommand;macroName=CTRIM;username=username;password=xxxxxx;externalData2=xxxx;date=20130816;MSISDN=994XXXXXXXXX>

If initial request used subscriberNumber field:

<https://127.0.0.1:4478/action=MacroCommand;macroName=CTRIM;username=username;password=xxxxxx;externalData2=xxxx;date=20130816;subscriberNumber=5XXXXXXXXX>

```
<?xml
version="1.0"?><MethodResponse><ResponseCode>0</ResponseCode><Description>Successful</De
scription><RequestedResponse><![CDATA[<?xml
version="1.0"?><MethodResponse><ResponseCode>4241</ResponseCode><Description>DIAMETER_
END_USER_SERVICE_DENIED</Description><Amount>3</Amount><Cost>0.0</Cost><TransactionID>4
650099327</TransactionID></MethodResponse>]]></RequestedResponse><TransactionID>46500996
17</TransactionID></MethodResponse>
```

This command will not provide result if there is more than one record for the same client transaction ID and username. In this case command will result with error response -  
6029=DIAMOND\_TOO\_MANY\_ROWS

If client transaction id is not found then response code is 6030=DIAMOND\_NO\_DATA\_FOUND

Command to fetch archived result by externalData2 is relatively "slow". It should be used only if client by some unknown reasons does not get proper response from Diamond Proxy (such cases as: empty response or closed/broken http connection).

## 5. Proxy usage restrictions

Proxy has following restrictions:

- The number of commands that can be executed is limited in time (N command per minute).  
When this number is exceeded client gets response with code 8012 and "Maximum number of wrong request" is increased on one point. In such case, wait one minute and then continue operations. This is done in order to avoid system overflow in short periods of time.
- Maximum number of wrong requests sent in one sequence from one IP address.  
This also includes requests with wrong username/password or syntax. After exceeding this number (usually - 5) IP address is blocked permanently. In such case contact Azercell support to unblock it.

- Allowed IP addresses  
Requests are accepted only from allowed IP addresses.
- Proxy uses self-signed SSL certificate.

## 6. Proxy response codes

2001=DIAMETER\_SUCCESS (prepaid number, success)  
2002=DIAMETER\_LIMITED\_SUCCESS  
3004=DIAMETER\_TOO\_BUSY  
4002=DIAMETER\_OUT\_OF\_SPACE (don't retry)  
4003=ELECTION\_LOST  
4241=DIAMETER\_END\_USER\_SERVICE\_DENIED (prepaid number, not enough balance)  
5241=DIAMETER\_END\_USER\_NOT\_FOUND  
6015=DIAMOND\_RESPONSE\_OK  
6017=DIAMOND\_CDR\_GENERATED (postpaid number, success)  
6018=DIAMOND\_CDR\_NOT\_GENERATED (postpaid number, not success)  
6020=DIAMOND\_ACCESS\_DENIED  
6021=DIAMOND\_CORE\_UNREACHABLE (stop commands & contact with Azercell technical team)  
6028=DIAMOND\_SUBSCRIBER\_NOT\_FOUND (stop service!!!)  
7004=DIAMOND\_INVALID\_REQUEST (don't retry)  
7005=DIAMOND\_NOT\_IMPLEMENTED  
7006=DIAMOND\_SERVICE\_TEMPORARY\_DISABLED  
7007=DIAMOND\_IMSI\_CHECK\_FAILED (stop service!!!)  
7008=DIAMOND\_POSTPAID\_STATUS\_CHECK\_FAILED  
8012=PROXY\_ACCESS\_DENIED  
8016=POSTPAID\_BILLING\_ON  
8017=POSTPAID\_UNKNOWN\_BILLING\_STATE  
8018=POSTPAID\_NO\_SUCH\_POSTPAID\_SUBSCRIBER  
8019=OK  
8020=Service already active

8021=Service already deactive

8022=POSTPAID\_RESPONSE\_UNKNOWN

6029=DIAMOND\_TOO\_MANY\_ROWS

6030=DIAMOND\_NO\_DATA\_FOUND

6969= DIAMOND\_SUBSCRIBER\_IN\_BLACK\_LIST (stop service!!!)

8030=POSTPAID\_CHARGEABLE\_FLAG\_UNKNOWN (charge postpaid numbers not allowed for this macro command)

## 7. Proxy response codes for using UCIP macro commands

“0” value response code means success. All other response codes are errors, see description field for more information. In general on all “not success” responses you can retry operation.

Examples:

0= Successful

115= Refill not accepted

102= Subscriber not found