



## **CPS UDC API Reference, Release 18.2.0 (Restricted Release)**

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# RESTRICTED RELEASE

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**IMPORTANT:** This is a Short Term Support (STS) release with availability and use restrictions. Contact your Cisco Account or Support representatives for more information.

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# UDC API Reference

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User Data Convergence (UDC) provides REST APIs to perform various operations on the UDC server. These operations should be used for testing and verification purposes only.

**NOTE:** Ensure these operations are carried out cautiously when used in a production environment.

For more information about UDC, see *CPS UDC Guide*.

# Get UDC Cache Entry

## Purpose

- Fetches UDC cache entry details from UDC VM.
- After successful handling of the request, UDC sends subscriber profile details comprising of LDAP attributes and Sy details.

## HTTP Operation Type

GET

## Example URL

/qps/rest/udc/profile?msisdn=1200000005 HTTP/1.1

## Curl Command

```
curl -X GET \  
  'http://10.81.71.35:8080/qps/rest/udc/profile?msisdn=1200000005' \  
  -H 'cache-control: no-cache' \  
  -H 'content-type: application/json'
```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "UdcFeDeviceSession": {  
    "apn": null,  
    "msisdn": "1200000005",  
    "responseAddress": "UDC.qns01-UDC-SiteA-1",  
    "attrList": [  
      {  
        "startDate": null,  
        "expirationDate": null,  
      }  
    ]  
  }  
}
```

```
    "code": "subscriber_id",
    "active": true,
    "value": "A_ABC_111_1234123404000124579279"
  },
  {
    "startDate": null,
    "expirationDate": null,
    "code": "ocs",
    "active": true,
    "value": "PHONE,XYZ,ABC"
  },
  {
    "startDate": null,
    "expirationDate": null,
    "code": "policy",
    "active": true,
    "value": "MVCH"
  },
  {
    "startDate": null,
    "expirationDate": null,
    "code": "reseller_id",
    "active": true,
    "value": "someval"
  },
  {
    "startDate": null,
```



```
    "expirationDate": null,  
    "code": "accountstatus",  
    "active": true,  
    "value": "ACSTAT111"  
  },  
  {  
    "startDate": null,  
    "expirationDate": null,  
    "code": "ent_attribute",  
    "active": true,  
    "value": "WLIST"  
  },  
  {  
    "startDate": null,  
    "expirationDate": null,  
    "code": " ent_attribute ",  
    "active": true,  
    "value": "OCSNEW"  
  },  
  {  
    "startDate": null,  
    "expirationDate": null,  
    "code": "paymenttype",  
    "active": true,  
    "value": "UP"  
  },  
  {
```

```
        "startDate": null,
        "expirationDate": null,
        "code": "sponsor_url",
        "active": true,
        "value": " http://sponsor.test.sp.com/sponsor-backend-
web/sponsor/service/v3"
    }
],
"deviceAccessKeys": [
    {
        "keyFields": null,
        "simpleValue": "msisdn:1200000005",
        "retryEnabled": false,
        "primary": true,
        "name": "msisdn",
        "value": {
            "msisdn": "1200000005"
        }
    }
],
"gxSessionList": [
    "site-2-host-gx;192158;647;123456",
    "site-2-host-gx;192158;652;123457"
],
"lastUnsubscribeTime": null,
"nextEvalTimeOfSubscription": 1498449041407,
"lastEventTime": 1498444392122,
"unsubscribeSend": false,
```

```
"localPdvps": [  
  {  
    "code": "APN",  
    "value": "PHONE"  
  }  
],  
"lastEvent": null,  
"deviceManagerId": "UDC_FE",  
"structure": {  
  "localPdvps": [  
    {  
      "code": "APN",  
      "_type": "com.broadhop.servicemodel.PolicyDerivedAvp",  
      "value": "PHONE"  
    }  
  ],  
  "nextEvalTimeOfSubscription": {  
    "_type": "java.util.Date",  
    "time": 1498449041407  
  },  
  "responseAddress": "UDC.qns01-UDC-SiteA-1",  
  "_type": "com.broadhop.udcfe.UdcFeDeviceSession",  
  "deviceManagerId": "UDC_FE",  
  "lastEventTime": {  
    "_type": "java.util.Date",  
    "time": 1498444392122  
  },  
}
```

```
"msisdn": "1200000005",  
"attrList": [  
  {  
    "code": "subscriber_id",  
    "_type":  
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",  
    "active": true,  
    "value": " A_ABC_111_1234123404000124579279"  
  },  
  {  
    "code": "ocs",  
    "_type":  
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",  
    "active": true,  
    "value": "PHONE,XYZ,ABC"  
  },  
  {  
    "code": "policy",  
    "_type":  
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",  
    "active": true,  
    "value": "MVCH"  
  },  
  {  
    "code": "reseller_id",  
    "_type":  
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",  
    "active": true,  
    "value": "someval"  
  }  
]
```

```
    },
    {
      "code": "accountstatus",
      "_type":
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",
      "active": true,
      "value": "ACSTAT111"
    },
    {
      "code": "ent_attribute",
      "_type":
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",
      "active": true,
      "value": "WLIST"
    },
    {
      "code": " ent_attribute ",
      "_type":
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",
      "active": true,
      "value": "OCSNEW"
    },
    {
      "code": "paymenttype",
      "_type":
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",
      "active": true,
      "value": "UP"
    },
  },
```

```

        {
            "code": "sponsor_url",
            "_type":
"com.broadhop.utilities.policy.authdomain.ExternalAttribute",
            "active": true,
            "value": "http://sponsor.test.sp.com/sponsor-backend-
web/sponsor/service/v3"
        }
    ],
    "gxSessionList": [
        {
            "_type": "java.lang.String",
            "value": "site-2-host-gx;192158;647;123456"
        },
        {
            "_type": "java.lang.String",
            "value": "site-2-host-gx;192158;652;123457"
        }
    ],
    "unSubscribeSend": false
},
"uniqueKey": null,
"nestedObjects": [],
"subFields": {},
"parentKey": "NetworkSession@",
"parented": false,
"containerName": "deviceSessions",
"deviceAccessKeysForSoftDelete": [

```

```
{
  "keyFields": null,
  "simpleValue": "msisdn:1200000005",
  "retryEnabled": false,
  "primary": false,
  "name": "msisdn",
  "value": {
    "msisdn": "1200000005"
  }
},
"keys": []
},
"DiameterSyTGPPSession": {
  "reinitiate": false,
  "gxSessionKeys": [],
  "awaitActionOnGx": false,
  "lastSyResultCode": 7000,
  "retryTime": null,
  "subscribedToAllPolicyCounters": false,
  "awaitSTRResponse": false,
  "countersSetStatus": true,
  "reinitiateCount": 0,
  "subscriberIdInSTR": false,
  "subscriberIdInSNA": false,
  "subscriberInfo": null,
  "lastSLReqType": 1,
```

```

"syActionSLRIntermediateCounter": 0,
"ocslegacy": false,
"syCountersList": [
  {
    "offerStatus": [],
    "pendingCounterMap": {},
    "code": "Sy-netflix",
    "identifier": "netflix",
    "status": "Exhausted",
    "value": "Exhausted"
  }
],
"failureReason": 0,
"subscriberAccState": null,
"subscriberBillingAccNumber": null,
"deviceAccessKeys": [
  {
    "keyFields": null,
    "simpleValue": "diameterSessionKey:iqns03-UDC-SiteA-2.cluster-udc.system-
1%3B1498001906%3B54%3B6433869195615666230",
    "retryEnabled": false,
    "primary": false,
    "name": "diameterSessionKey",
    "value": {
      "diameterSessionKey": "iqns03-UDC-SiteA-2.cluster-udc.system-
1%3B1498001906%3B54%3B6433869195615666230"
    }
  }
]

```



```
    ],
    "deviceAccessKeysForSoftDelete": [
      {
        "keyFields": null,
        "simpleValue": "diameterSessionKey:iqns03-UDC-SiteA-2.cluster-udc.system-
1%3B1498001906%3B54%3B6433869195615666230",
        "retryEnabled": false,
        "primary": false,
        "name": "diameterSessionKey",
        "value": {
          "diameterSessionKey": "iqns03-UDC-SiteA-2.cluster-udc.system-
1%3B1498001906%3B54%3B6433869195615666230"
        }
      }
    ],
    "subscriberBillingAccSubType": null,
    "subscriberBillingAccType": null,
    "syCountersIdentifiersAndStatus": [
      "netflix:Exhausted"
    ],
    "syCounterIdList": [
      "netflix"
    ],
    "action": 0,
    "connected": true,
    "sessionId": "iqns03-UDC-SiteA-2.cluster-udc.system-
1;1498001906;54;6433869195615666230",
    "destHost": "site-2-syocs-client.com",
```

```
"destRealm": "site-2-syocs-client.com",
"destQueue": "lb01-UDC-SiteA-5:diameter-lb",
"proxyBit": true,
"commandCode": 8388635,
"sessionReset": null,
"lastSTA": null,
"counter": 0,
"featureData": [],
"nextEvalTime": 1498444512119,
"originStateId": 0,
"lastSTR": null,
"lastCCA": null,
"lastCCRequestNumber": 0,
"origSubscriberId": null,
"clientCount": 1,
"imsi": null,
"msisdn": "1200000005",
"negotiatedFeatures": null,
"vzwNegotiatedFeatures": null,
"proxy": false,
"deviceManagerId": "SY_V11",
"structure": {
  "featureData": [],
  "commandCode": 8388635,
  "OCSLegacy": false,
  "subscriberIdInSNA": false,
  "syCounterIdList": [
```

```
{
  "_type": "java.lang.String",
  "value": "netflix"
}
],
"destQueue": "lb01-UDC-SiteA-5:diameter-lb",
"lastSLReqType": 1,
"syActionSLRIntermediateCounter": 0,
"action": 0,
"awaitSTRResponse": false,
"msisdn": "1200000005",
"clientCount": 1,
"countersSetStatus": true,
"destHost": "site-2-syocs-client.com",
"subscribedToAllPolicyCounters": false,
"_type": "com.broadhop.diameter2.policy.session.DiameterSyTGPPSession",
"deviceManagerId": "SY_V11",
"counter": 1,
"sessionId": "iqns03-UDC-SiteA-2.cluster-udc.system-
1;1498001906;54;6433869195615666230",
"awaitActionOnGx": false,
"destRealm": "site-2-syocs-client.com",
"connected": true,
"proxy": false,
"reinitiate": false,
"gxSessionKeys": [],
"reinitiateCount": 0,
"lastCCRequestNumber": 0,
```

```
    "nextEvalTime": {
      "_type": "java.util.Date",
      "time": 1498444512119
    },
    "lastSyResultCode": 7000,
    "syCountersList": [
      {
        "identifier": "netflix",
        "pendingCounterMap": {},
        "_type":
"com.broadhop.diameter2.policy.session.sy.DiameterSySessionCounter",
        "offerStatus": [],
        "status": "Exhausted"
      }
    ],
    "failureReason": 0,
    "proxyBit": true,
    "originStateId": 0,
    "subscriberIdInSTR": false
  },
  "uniqueKey": null,
  "nestedObjects": [],
  "subFields": {},
  "parentKey": "NetworkSession@",
  "parented": false,
  "containerName": "deviceSessions",
  "keys": []
}
```

```
}
```

# Synchronize UDC with UDR

## Purpose

- Used for triggering a LDAP (UDR) query by the UDC VM.
- After successful handling of the request messages, UDC VM triggers an LDAP query to read the attributes and re-subscribes to the UD Subscription to Notification Server.

## HTTP Operation Type

POST

## Example URL

/qps/rest/udc/profile/sync/sp?msisdn=1200000005 HTTP/1.1

## Curl Command

```
curl -X POST \  
  'http://10.81.71.35:8080/qps/rest/udc/profile/sync/sp?msisdn=1200000005' \  
  -H 'cache-control: no-cache' \  
  -H 'content-type: application/json'
```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "Operation": "Completed Sucessfully"  
}
```

# Synchronize UDC with Sy OCS Server

## Purpose

- Used for triggering a Sy SLR Intermediate request to the Sy OCS server by the UDC VM.
- After successful handling of the request messages, UDC VM triggers a Sy SLR Intermediate request to the Sy OCS server as per the configured Sy service.

## HTTP Operation Type

GET

## Example URL

/qps/rest/udc/profile?msisdn=1200000005 HTTP/1.1

## Curl Command

```
curl -X POST \  
  'http://10.81.71.35:8080/qps/rest/udc/profile/sync/sy?msisdn=1200000005' \  
  -H 'cache-control: no-cache' \  
  -H 'content-type: application/json'
```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "Operation": "Completed Sucessfully"  
}
```

# Insert Data in UDC LDAP Cache

## Purpose

To insert data in the UDC LDAP cache.

## SOAP HTTP API

This request is handled using the SOAP notification request provided by UDSN feature. The following is a sample request to inject an attribute:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:not="http://www.3gpp.org/udc/notification">
  <soapenv:Header/>
  <soapenv:Body>
    <not:notification>
      <!--1 or more repetitions:-->
      <not:object>
        <not:objectClass>?</not:objectClass>
        <not:DN>mobileprefix=1200000005,ou=accounts,o=profile</not:DN>
        <not:operation>modify</not:operation>
        <!--Zero or more repetitions:-->
        <not:attribute>
          <not:name>ocs</not:name>
          <not:modification>add</not:modification>
          <not:afterValue>ABC</not:afterValue>
        </not:attribute>
      </not:object>
    </not:notification>
  </soapenv:Body>
</soapenv:Envelope>
```



# Delete Single Cache Entry

## Purpose

To delete a single UDC cache entry.

## HTTP Operation Type

DELETE

## Example URL

//qps/rest/udc/profile?msisdn=1200000005 HTTP/1.1

## Curl Command

```
curl -X DELETE \  
  'http://10.81.71.35:8080/qps/rest/udc/profile?msisdn=1200000005' \  
  -H 'cache-control: no-cache' \  
  -H 'content-type: application/json' \  

```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "Operation": "Completed Sucessfully"  
}
```

**IMPORTANT:** The following section describes two new APIs for sending UDC SOAP subscribe and unsubscribe messages to external UD SOAP servers. These APIs are meant only for test purpose and not recommended for use in production environment. Also these APIs do not have any state machine handling and are used for only sending messages to test communication with external UD SOAP servers.

# UDC Send SOAP Subscribe Request

## Purpose

To send SOAP subscription message to the configured SOAP server URL. This API requests uses the following two mandatory parameters:

- msisdn – subscriber number
- attributename – name of the attribute

**NOTE:** These parameters are only needed for building a valid SOAP request and do not have any association to either an existing subscriber or existing attributename.

## HTTP Operation Type

POST

## Example URL

/qps/rest/udc/profile/soap/subscribe?msisdn=1200000005&attributename=acwpaymenttype HTTP/1.1

Host: 10.81.71.35:8080

Content-Type: application/json

## Curl Command

```
curl -X POST \  
  
  'http://  
10.81.71.35:8080/qps/rest/udc/profile/soap/subscribe?msisdn=1200000005&attributename=paym  
enttype' \  
  
  -H 'cache-control: no-cache' \  
  
  -H 'content-type: application/json' \  

```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "Operation": "Completed Successfully"  
}
```

# UDC SOAP Unsubscribe Request

## Purpose

To send SOAP unsubscribe message to the configured SOAP server URL. This API requests uses the following two mandatory parameters:

- msisdn – subscriber number
- attributename – name of the attribute

**NOTE:** These parameters are only needed for building a valid SOAP request and do not have any association to either an existing subscriber or existing attributename.

## HTTP Operation Type

POST

## Example URL

/qps/rest/udc/profile/soap/unsubscribe?msisdn=1200000005&attributename=acwpaymenttype HTTP/1.1

Host: 10.81.71.35:8080

Content-Type: application/json

## Curl Command

```
curl -X POST \  
  
  'http://  
10.81.71.35:8080/qps/rest/udc/profile/soap/unsubscribe?msisdn=1200000005&attributename=  
paymenttype' \  
  
  -H 'cache-control: no-cache' \  
  
  -H 'content-type: application/json' \  

```

## Response

**HTTP status code:** 200

### Body

Type: application/json

Schema

```
{  
  "Operation": "Completed Successfully"  
}
```

# LWR API Fetch Profile

## Purpose

Fetches the current user profile stored in LWR. This API request uses two mandatory parameters:

- `msisdn`: subscriber number
- `topic`: name of the topic as per configuration

**NOTE:** This API is intended for test purposes only and is not recommended for use in production environment. This API also does not have any scope of modifying the data in LWR as it is read-only.

## HTTP Operation Type

GET

## Example URL

```
/qps/rest/lwr/profile?msisdn=1740000129&topic=lwr
```

Host: 172.19.65.105:8080

Content-Type: application/json

## Curl Command

```
curl -X GET \  
'http://172.19.65.105:8080/qps/rest/lwr/profile?msisdn=1740000129&topic=lwr-test-new' \  
-H 'cache-control: no-cache' \  
-H 'content-type: application/json' \  

```

## Response

**HTTP status code:** 200

### Body

```
{  
  "msisdn": "1740000129",  
  "attribute":  
  "{\"msisdn\":\"1740000129\",\"attribute\":\"acwperferab:CHG#25166080:HST#2172649728:LAST_CHANGE#CHG\"  
}"  
}
```