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| **ComverseONE™ for Vinaphone**  **Postpaid Migration Legacy File definition and mapping** |

Revision History

| Version | Date | Author | Description |
| --- | --- | --- | --- |
| 0.1 | 08-Mar-14 | Hoang Chi Thang | First draft |
| 0.5 | 10-Mar-14 | Hoang Chi Thang | Reviewed by Vinaphone/Elcom |
| 1.0 | 15-Mar-14 | Hoang Chi Thang | Reviewed and Approved by Vinaphone |

Referenced Documents

| Ref. | Title | Version | Author/co | Date | Embed File |
| --- | --- | --- | --- | --- | --- |
| 1 | Vinaphone-C1\_RT\_Migration\_LegacyFile\_Definition | 0.1 | Vinaphone/Comverse | 07-Mar-2014 |  |
| 2 | Vinaphone-C1\_RT\_Migration\_LegacyFile\_Definition | 0.5 | Comverse/Vinaphone | 01-April-2014 |  |
| 3 | Vinaphone-C1\_RT\_Migration\_LegacyFile\_Definition | 1.0 | Comverse/Vinaphone | 25-April-2014 | Update for calling circle legacy extract and loading |

Glossary

| Term/Acronym | Description |
| --- | --- |
| API | Application Programming Interface |
| AVPs | Attribute Value Pairs |
| BSS | Billing Support Systems |
| CBS | Converged Billing Suite |
| CDR | Call Detail Record (see also xDR) |
| CLI | Command Line Interface |
| CMS | Comverse Media Server |
| COIN | Comverse Interface (Vinaphone GUI) |
| CRM | Customer Relationship Management system |
| CSR | Customer Service Representative |
| DCC | Diameter Credit Control |
| DON | Dealer online (part of COIN application) |
| DPI | Direct Provisioning Interface (existing Vinaphone interface) |
| DWH | Data Warehouse |
| ECI | Event Charging Interface |
| EFT | Electronic Funds Transfer; also the name of a module within Comverse® ONE™ Billing & Financials. |
| EJB | Enterprise Java Beans |
| FTP | File Transfer Protocol |
| GL | General Ledger |
| GPRS | General Packet Radio Service |
| GUI | Graphical User Interface |
| IETF | Internet Engineering Task Force |
| IN | Intelligent Network |
| IVR | Interactive Voice Response |
| LBX | Lockbox Bank; also the name of a module within Comverse® ONE™ Billing & Financials. |
| MMS | Multimedia Messaging Service |
| MO | Mobile Originating |
| MSC | Mobile Switching Center |
| NOC | Network Operations Center |
| OA&M | Operations Administration & Maintenance |
| OCM | Online Catalog Manager |
| OLTP | Online Transaction Processing |
| OSA | Open Services Access |
| PCI DSS | Payment Card Industry Data Security Standards |
| POS | Point Of Sale |
| RBT | Ring Back Torne |
| RTB | Real-time Billing |
| SDK | Software Development Kit |
| SMS | Short Message Service |
| SOHO | Small Office Home Office |
| SOX | Sarbanes-Oxley |
| TML | Total Monetary Liability |
| USSD | Unstructured Supplementary Service Data |
| VNO | Virtual Network Operator |
| xDR | Usage Data Record; any type of usage (see also CDR) |
| XML | Extensible Markup Language |
| Vinaphone CCBS | Vinaphone Legacy Postpaid Billing System |

Signature section

| Document title | **VINAPHONE – IPA Phase 1** |
| --- | --- |
| Document Version and revision | Version vXXXXX |
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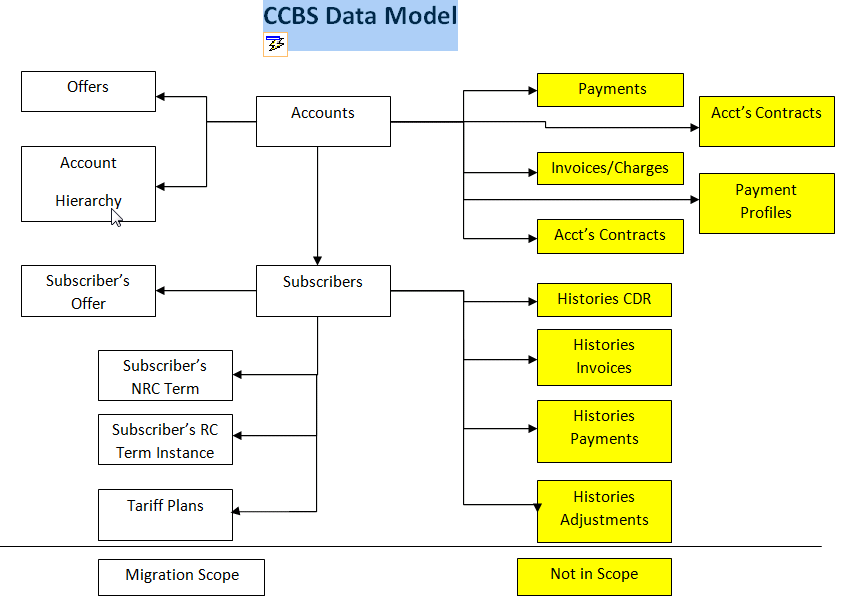
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# Migration Scope

## Vinaphone CCBS logical data model used for migration

For migration purposes we assume following logical (business) data model in Vinaphone CCBS. Model was discussed with Vinaphone during IPA sessions held in 2011:



More about Vinaphone CCBS data model and Vinaphone CCBS data extract specification in following documents: [1] [2] (referenced documents on page 1)

## Data objects to be migrated

Following objects described in above data model chart will be migrated from Vinaphone CCBS to Comverse ONE:

1. Customer, Customer Hierarchy Structure
2. Billing Group
3. Subscribers
4. Subscriber’s Services
5. Subscriber’s Monetary Discount
6. Subscriber’s Airtime Discount
7. Subscriber’s Tariff plan
8. Account/Subscriber’s Offer, RCs, NRCs.

## Data objects out of migration scope

Following objects described in above data model chart will not be migrated from Vinaphone CCBS to Comverse ONE:

1. Account/Subscriber’s change history of any object (only most recent state will be migrated)
2. Account/Subscriber’s History Invoices
3. Account/Subscriber’s Payments (billed)
4. Subscriber’s CDRs, Roaming CDRs – regardless of status
5. Account/Subscriber’s Adjustment – regardless of type
6. Account/Subscriber’s Order – regardless of status
7. Account/Subscriber’s Contract
8. Account/Subscriber’s Payment profile
9. Account/Subscriber’s Payment (limited to unbilled only)
10. Initial postpaid balance after last bill (not separate object but Customer attribute)
11. Any other not listed in 1.2

## Data objects migrated for open period (unbilled)

For open period (period between last bill run and cutover) following data objects having impact on customer billing and balance will be migrated:

Unbilled CDRs will not be migrated but processed using ORP, more details about this topic will be provided in next chapters.

# Migration tools

## Data extraction from Vinaphone CCBS

Data extraction from Vinaphone CCBS is out of Comverse scope and will be prepared and executed by Vinaphone.

Extraction format is specified in this document – [2] (details in referenced document section)

## MIGRATION BULK SCRIPTS – data conversion and load

Similar to prepaid migration, Comverse standard tool Legacy Conversion Utility ( MIGRATION BULK SCRIPTS) will be used for migration for most of data from Vinaphone CCBS. The MIGRATION BULK SCRIPTS tool consists of a conversion engine and a number of XML configuration files which describe various aspects of the conversion, including how to interpret the input, how to form the output, how to build static reference data, etc. In addition, the MIGRATION BULK SCRIPTS defines a set of abstract entities which are the pivot point around which the conversion operates. There is a single, fixed set of entities per Comverse ONE release and the entities do not vary from project to project. The pre-defined entities add an abstraction layer which permits a more flexible migration strategy, putting the customization work on the frontend, where the details of the source data will vary from project to project.

Following diagram presents migration flow concept using MIGRATION BULK SCRIPTS:

We are going to use single MIGRATION BULK SCRIPTS instance (in compare to prepaid – there were 16) installed on SAP1 server (10.149.3.33). All hardware requirements are met with this machine.

# Migration legacy extract file definition

## Legacy Extract File

* Legacy extracted file for migration to C1 must be following
  + Unicode with Vietnamese supporting
  + Field Separated by “~!”
  + End of line in file extract must be “ ~!";
  + Detail format for each type of migration extract file below in 3.2, 3.3 and 3.4.

## Account Record

Below detail information of Account\_Subscribers Entities need to migration into C1 from Vinaphone CCBS System

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 1 | STT | Integer |  | Sequence of Record Extracted |
| 2 | MA\_TINH | String | account\_lookup.CITY |  |
| 2 | MA\_KH\_CHA | String |  | For lookup Parent Account ID for create subscriber in case value are set |
| 3 | MA\_KH | String | **account\_lookup.Address4** | Enable search by MA\_KH via C1 SAPI/WS. |
| 4 | TEN\_TT | String | account\_subscriber\_info.last\_name  account\_lookup.bill\_lname | Not Null |
| 5 | DIA\_CHI\_TT | String | account\_subscriber\_info.Address1  account\_lookup.Address1 | Not Null |
| 6 | SO\_DT\_DD | String | account\_lookup.cust\_phone1 | Nullable |
| 7 | QUOC\_TICH | String | account\_subscriber\_info.country\_code | Default VIETNAM |
| 8 | CO\_QUAN | String | account\_subscriber\_info.company  account\_lookup.bill\_company | Nullable |
| 9 | LOAI\_KH | String | account\_lookup.account\_category | Not NULL |
| 10 | MA\_CQ | String | account\_lookup.alt\_company\_name |  |
| 11 | ACCT\_OFFER\_ID | String |  | Nullable  If ACCT\_OFFER\_ID is not null, account will be added Acct Offer |
| 12 | EMAIL | String | account\_subscriber\_infor.address3 | Not NULL |
| 13 | MSISDN | String | account\_subscriber.dislay\_External\_id  account\_subscriber.range\_map\_external\_id  account\_subscriber.notification\_External\_id  external\_id\_type\_mape.external\_id\_type =1 /external\_id | In formart  8491xxx |
| 14 | PRIMARY\_OFFER\_ID | Integer | account\_subscriber.primary\_offer\_id | Not NULL |
| 15 | TEN\_TB | String | account\_subscriber\_info.last\_name | Not NULL |
| 16 | DIA\_CHI | String | account\_subscriber\_info.address1 | Not NULL |
| 17 | NGAY\_LD | String | account\_subscriber.creation\_date  account\_subscriber.date\_enter\_active | Format in DD/MM/YYYY |
| 18 | SIM | String | external\_id\_type\_mape.external\_id\_type =2 /external\_id | Not NULL |
| 19 | NGAY\_SINH | DATE | Account\_subscriber.birth\_day | Format in DD/MM/YYYY |
| 20 | EMAIL\_TB | String | account\_subscriber\_infor.address3 | Null able |

Business process for create Account Subscriber in C1

* If MA\_KH\_CHA was blank , script will create 1SA account subscriber with information mapping above table
* If MA\_KH\_CHA was not bank, scrip will create only subscriber with parent\_account\_no ( account\_lookup.CodeWord=MA\_KH\_CHA)
* All date format will be set in DD/MM/YYYY
* Primary Offer ID, MSISDN,IMSI must be set
* Priority
  1. 1st for loading in C1 that all 1SA and Account that have many child subscribers first
  2. 2nd priority loading all child subscribers of exist account created in 1st
  3. Legacy Extract file must be provide priority as mentioned above
  4. 3rd Subscriber’s Offer / Subcriber Calling Circle Record will be loaded in 3rd step
* Below information that will be set as default for all migrated Account and Subscriber Entity.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | C1 Field Name | Entity Name | Data Type | Description |
| 1 | Language\_code | Account/Subscriber | Short | 1 – English |
| 2 | Notification\_language\_code | Account/Subscriber | Short | 1-English |
| 3 | Create\_date | Account/Subscriber | Date | Date that subscriber migrated into C1 System |
| 4 | Notification\_level | Subscriber | Short | 0 –Non |
| 5 | LastTrans\_date | Account/Subscriber | Date | Date that subscriber migrated into C1 System |
| 6 | AccountState | Account | Short | 1–Active |
| 7 | Market\_code | Account | Short | 1- Standard Market Code |
| 8 | Regular ID | Account | Short | 1 Payment Order 1 |
| 9 | VIp Code | Account | Short | 0 - Non-VIP |
| 10 | Time\_Zone | Account | Integer | Asisa/Ho Chi Minh |
| 11 | Rate\_Class | Account/Subscriber | Short | 1- Standard Rate Class |
| 12 | Bill\_Period | Account | String | M01 -Monthy-1st |
| 13 | Subscriber State | Subscriber | Short | 2- Active |
| 14 | Usage Priority | Subscriber | Short | 1. Use Real and Shadow |
| 15 | Is shadow Subscriber | Subscriber | Boolean | False |
| 16 | Is Account Access Allowed | Subscriber | Boolean | False |
| 17 | Mobile Add | Subscriber | Boolean | False |
| 18 | Pin | Subscriber | String | BLANK |

## Subscriber Offer Record

The record contain information for provisioning supplementary offers that subscriber are using in Vinaphone CCBS . All information detail below

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets | Order theo MSISDN |
| 2 | SO\_ID | Integer | OFFER\_INST.Offer\_ID |  |
| 3 | NGAY\_SD | DATE | OFFER\_INST.Active\_dt | Format in DD/MM/YYYY |
| 4 | NGAY\_HD | DATE | OFFER\_INST.inActive\_dt | Format in DD/MM/YYYY |

# Subscriber Calling Member Circle Record

Each calling circle group stored in Legacy CCBS system will be migration as call\_circle name in C1 RT . Due to we can not determine the msisdn before all postpaid subscriber loading in C1 RT so that all Calling Circle Member records will be loading in the end ( after all subscribers record loaded in to C1 RT)

The format of legacy extract will be following description below .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 1 | STT | Number | NA | The Number of record extracted |
| 2 | CC\_NAME | STRING | Calling Circle Name | **Order theo calling circle Name** |
| *3* | *CC\_GROUP\_ID* | *Number* | *Calling Circle Group ID* | *ID of VNPT Free or DN\_GD Group* |
| 4 | MSISDN | String | MSISDN | MSISDN for add into calling circle name  No need to check C1 RT DB because extract data have been corrected with member\_types |
| 5 | Member\_type | Number | CC\_Member.member\_type | 1. C1 RT Vinaphone Number postpaid 2. Non C1 RT Vinaphone Number |

# Subscriber’s Family & Friends Record

Each mobile number of Family & Friend of Subscriber will be migrated in to C1 RT Account\_Subscirber.Destination\_number1..to Account\_Subscirber.Destination\_number10 (maximum 10 Friend & Family numbers)

The format of legacy extract will be following description below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 1 | STT | Number | NA | The Number of record extracted |
| 2 | MSISDN | STRING | Subscriber’s MSISDN |  |
| 3 | FF\_MSISDN\_LIST | String | Account\_subscirber.Destination\_number1  ..  Account\_subscirber.Destination\_number10 | Contain list of MSISDN for Friend & Family number separately by “,” |

# Priority Processing of Legacy File for migrations

C1 RT Project Migration strategy using sapi so that the priority of migration should following sapi logic below.

* 1. All information of Account must be first ( Account, Account Offer)
  2. All information of subscriber’s offer instance
  3. All information of subscriber’s calling circle members.

So that all files of AccountSubscriber must be processing in 1st , 2nd steps processing Subscriber’s Offer Record or Subscriber’s Calling Circle member files.

# File legacy extract naming convention

1. All information of Account Subscribers file naming are set as naming pattern : BATCH[N]\_ACCT\_SUBS00.txt . Each batch maximum 200K of lines
2. All information of Account Subscribers file naming are set as naming pattern : BATCH[N]\_ACCT\_SUBS01.txt ( order by ma\_kh\_cha)

Each batch maximum 200K of lines

1. All information of subscriber’s offer instance , file naming are set as naming pattern : BATCH[N]\_SUBS\_OFFER00.txt ( order by MSISDN)

Each batch maximum 200K of lines

1. All information of subscriber’s calling circle members, file naming are set as naming pattern : SUBS\_CCC\_00.txt ( order by CIRCLE\_NAME)
2. All information of Subscriber’s Friend & Family record must be stored in file naming pattern : SUBS\_FF\_00.txt

# OPEN ISSUES

|  |  |  |
| --- | --- | --- |
| **#** | **Issue** | **Status** |
| 1 | Vietnamese | CMV checked it’s OK |
| 2 | Backdate Subscriber create | CMV checked it’s OK |
| 3 | Backdate of Offer Instance create | CMV checked it’s OK |
| 4 | Expiration Date of Offer instance must be next of Bill cut off date, not in middle of circle as C1 logic | CMV should develop script for update expiration date of offer instance after migration legacy subscribers. |
|  |  |  |
|  |  |  |
|  |  |  |

# Daily synchronous transaction between CCBS and C1 RT

Due to running in parallel postpaid legacy system with C1 RT during pilot period around one month , Vinaphone want an mechanism for ensure all transactions missing during this time will be checked and corrected by end of daily by using reconcile report and synchronous tools ( that supporting these sapi functions )

* Create Account/Subscriber
* Add Offer Instance
* **Disconnect Offer Instance**
* Add Calling Circle Member
* **Remove Calling Circle Memb**er
* Add Friend & Family member
* **Remove Friend & Family member**
* **Change Subscriber State ( Active -> S1, S2, S3 and S4)**
* **Disconnect Subscriber**

# Format of file for input Sapi Tool for synchronous Account and Subscriber Daily

These are detail file definition for file input for synchronous tools . Some functions that using in migration Create Account/Subsriber, Add Offer Instance, Add Calling Circle Member, Add Friend and Family are keeping in same format .

* + 1. Disconnect Offer Instance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets |  |
| 2 | SO\_ID | Integer | OFFER\_INST.Offer\_ID |  |

* + 1. Disconnect Calling Circle Member

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets |  |
| 2 | CC\_NAME | String |  |  |

* + 1. Remove exist Friend & Family Member

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets |  |
| 2 | MSISDN\_List | String |  | For removing in Friend & Family, these MSISDN separate by commas “,” in case more than one |

* + 1. Change Subscriber State

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets |  |
| 2 | NewState | Integer | These convention of state value  1 – IDLE  2 -- ACTIVE  50 -- S1  51 -- S2  53 – S4 | For removing in Friend & Family |

* + 1. Disconnect Subscriber

Due to function Subscriber Disconnect in C1 RT will delete all records of subscriber so that using in case end of month after the last bill of disconnect subscriber close.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Field Name | Data Type | C1 Entity Mapping | Description |
| 0 | STT | String |  |  |
| 1 | MSISDN | String | OFFER\_INST.Subsc\_no/ Subsc\_no\_resets |  |
| 2 | Comment | String |  | Reason of Disconnect Subscriber |