CDR Loader For load Testing

Internship Project

Submitted to:

Prof. R. R. JANGHEL
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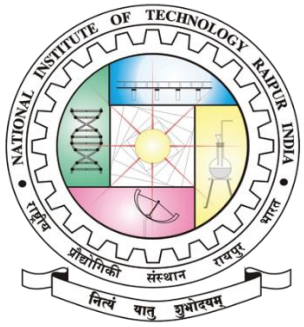

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Start Date for Internship: 25th May, 2015
End Date for Internship: 26th June, 2015

DECLARATION BY THE CANDIDATE

I, the undersigned *NARENDRA KUMAR DHAKER*, 7th semester hereby declare that the project report entitled "***CDR Loader For Load Testing***" submitted by me to *Prof. R.R. Janghel*, Department of Information Technology, NIT Raipur is my own work and has been carried out under the supervision of *Mr. Khalifathullah Khan*, Relationship Manager in Mahindra comviva.

This work has not been previously submitted to any other university for any examination.

Date: Signature

Place: Raipur NARENDRA Kr. DHAKER

CERTIFICATE

I hereby certify that the work which is being presented in the B. Tech. Major (or Minor) Project entitled **"CDR Loader For Load Testing",** which is submitted by **Mr. Narendra Kumar Dhaker** in partial fulfillment of the requirements for the award of the **Bachelor of Technology in Information Technology** and submitted to the Department of Information Technology of National Institute of Technology Raipur C G is an authentic record of my own work carried out during a period from May 2015 to June 2015 under the supervision of **Mr. Khalifathullah Khan, Relationship Manager, Mahindra Comviva.**

The matter presented in this thesis has not been submitted by me for the award of any other degree elsewhere.

Signature

NARENDRA KUMAR DHAKER

Roll No. 12118037

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Signature

Date:

Mr. Khalifathullah Khan
Relationship Manager
Mahindra Comviva

Preface

This report documents the work done during the summer internship at Consumer Value Solution (CSV Unit), Mahindra Comviva, Gurgaon Haryana under the supervision of Mr. Khalifathullah Khan R.M. and mentored by Mr. Pankaj Gautam. The report first shall give an overview of the tasks completed during the period of internship with technical details. Then the results obtained shall be discussed and analyzed.

Report shall also elaborate on the future works which can be persuaded as an advancement of the current work.

I have tried my best to keep report simple yet technically correct. I hope I succeed in my attempt.

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Acknowledgement and Endorsement

This report has been written by me and have not received any previous academic credit at this or any other institution.

I could not have done this work without the lots of help I received cheerfully from whole Consumer Value Solution (unit). The work culture in CVS unit is really motivates. Everybody is such a friendly and cheerful companion here that work stress is never comes in way.

I would specially like to thanks Mr. Khalifathullah Khan R.M. for providing a platform where I can enhance my skill and apply my knowledge and Mr. Pankaj Gautam, who mentored me by his Precious guidance. They taught me how to get some solution when you really stuck to a somewhere in problem.

Executive Summery

The report presents the two tasks completed during summer internship at Mahindra Comviva. Which are listed below:

1. Report generated according to Day.
2. Report generated according to month.

All these tasks have been completed successfully and results were according to expectations.

Generating CDR records are quite interesting. CDR stands for **Call Detail Record**. There are some component of CDR i.e. Caller no, Called no, Call type, Call Origination location, Roaming type, Service class and many more.

1. Introduction

1.1. About Company:

Mahindra Comviva is the global leader in providing mobility solutions. It is a subsidiary of Tech Mahindra. Mahindra Comviva (formerly Comviva) was founded in 1999 in New Delhi.

Comviva merged with CellCloud Technologies Limited, a Bangalore headquartered company, offering "Electronic Top-up solutions", in December 2002. In December 2007, Comviva acquired Jataayu Software Limited, a Bangalore-based provider of "value added telecom solutions" [1]

Later it was incorporated as Bharti Telesoft Limited, changing its name to Comviva Technologies Limited in April 2009. [2]

Its mobility solutions are deployed by over 130 mobile service providers and financial institutions in over 90 countries, transforming the lives of over a billion people across the world.

Image 1: Logo of Mahindra Comviva

On Sep 2012 Tech Mahindra acquired 51 per cent stake in Gurgaon-based mobile application firm Comviva from Bharti Group. [3] In February 2014, it partnered with Bharti Airtel for deploying its enterprise communications platform in 16 countries across Africa. [4] [4]

1.2. CDR Content

A call detail record (CDR) is a data record produced by a telephone exchange or other telecommunications equipment that documents the details of a telephone call or other communications transaction (e.g., text message) that passes through that facility or device. The record contains various attributes of the call, such as time, duration, completion status, source number, and destination number. [5] [6]

A Call Detail Record contains metadata – that is, data about data - containing data fields that describe a specific instance of a telecommunication transaction, but does not include the content of that transaction. [5] [6] [7]

In actual modern practice, call detail records are much more detailed, and contain attributes such as:

- The phone number of the subscriber originating the call (CALLING_PARTY, A-party)
- The phone number receiving the call (CALLED_PARTY, B-party)
- The starting time of the call (CALL_START_TIME and Date)
- Call type (CALL_TYPE i.e. voice, SMS, etc.).
    - Data : internet surfing
    - SMO: short messaging originating
    - MOC: mobile originating call
- The identification of the telephone exchange or equipment writing the record (ORIGINATION_LOCATION_INFO). Its maximum length is 15 digit.
    - Data : No location
    - SMO: Fixed Digit no.
    - MOC: Fixed Digit no + 10 digit no.
- An amount charged for the using service (CHARGED_AMOUNT)
- Service accessing time (CHARGED_DURATION in sec.)
- Account Information before and after service (AV_BEFORE_CALL& AV_AFTER_CALL)

1.3. Objective of Work

"Why was the specific work done?"

We know what CDR is and its component, for load testing of a system, system requires no of record in definite sequence and huge amount of data.

It's impossible to write that huge amount of data in definite sequence without error manually. It is so much time taking process hence to optimize this process we are going to design a program which create no of records according to our requirement based on input provided.

Our program can write thousands of records in file and able to creates hundreds of files for same no of records within some times.

2. Description of Method

Java is a programming language and computing platform can be used for creating records in files. Java have input - output stream to read and write on file.

Calling party no & called party no: It will be 8-10 digit no with some prefix digits (i.e. 94, 75, and 8989 for BSNL India). In our document we are going to create variable length mobile no, whose length will be given as input during execution and Prefix of mobile is already mentioned in a file *"Mobile_No_Prefix"*. First line and second of this file contain prefix for calling party and called party mobile no respectively

***Call start time*:** This is time when call is being start. Time is measured in 24 hrs format.

Call date: Day when call is done. This date will be given in input during execution.

Charged duration: Amount of time call till call being held. It will be a random time interval.

Call type &Call origination location: there are three call type of transaction in communication.

1. DATA: This transaction are made for internet access. This call type don't have any kind of origination location and no called party no. hence in a record if we encountered data we will not use and origination location and called party.
2. SMO: This transaction are made for message service. This transaction have called party no and a fix digit origination detail, which is already mentioned in third line of *"Mobile_No_Prefix"* file.
3. MOC: This transaction is a normal call in which we have called party no and most accurate call location.

Charged amount: This is the amount charged for any kind of transaction done. Charged amount is always non negative and not more than current account balance.

Account balance: This is account balance of called party, before and after a transaction is done. Account balance of called party before call will always greater than equal to after call.

Roaming type: It indicates whether particular transaction is roaming or not.

Service offering: It indicates what all services/offers subscriber has for that transaction.

Service class: It defines primary category of subscriber for that transaction.

3. Summary of Data

Data writing by our programs have all components of CDR. All records are valid and can be used for further processing.

These data is well maintained and in sorted order according to time. It is best suitable data for load testing of a system.

4. Test Case to check program

S.no.	Name	Description	Execution Steps	Expected Result	Actual Result
1	TC-1	Checking the Behavior on Different Inputs when choice is to be select	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter a valid choice	Application shows Next Step When a valid Number Choice is entered [1 or 2]	
2	TC-2	Checking the Behavior on Different Inputs when choice is to be select	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter an Invalid choice	Program Will Prompted for a Valid Choice with message : " Invalid option please ENTER 1 or 2"	
3	TC-3	Checking the Behavior on Different Inputs when Valid RECORDS PER FILE is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '1000 ' [for No of Records in a file] 4. Enter '1' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter '20150621' [for date]	A Output file is Generated with "1000" RECORDS having 10 digit length of calling and called party file name is "20150521-1000-1.csv"	
4	TC-4	Checking the Behavior on Different Inputs when Invalid RECORDS PER FILE is Entered	1. Run the Program 2. Choice 1 3. Enter any character "a","@","!","/"	Program Will Prompted for a Valid No RECORDS per Files with message : " Please Enter Valid No. of Records per File"	
5	TC-5	Checking the Behavior on Different Inputs when Valid FILE'S FOR A DAY is Entered	1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '1000 ' [for No of Records in a file] 4. Enter '5' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter '20140101' [for date]	A Output file is Generated with "1000" RECORDS having 10 digit length of calling and called party file name is: "20140101-1000-1.csv" "20140101-1000-2.csv" "20140101-1000-3.csv" "20140101-1000-4.csv" "20140101-1000-5.csv"	
6	TC-6	Checking the Behavior on Different Inputs when Invalid FILE'S FOR A DAY is Entered	1. Run the Program 2. Choice 1 3. Enter '1000' 4.Enter any character "a","@","!","/"	Program Will Prompted for a Valid No of Files with message : "Please Enter Valid No. of File's For a day "	
7	TC-7	Checking the Behavior on Different Inputs when Valid LENGTH OF MOBILE NO is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '1000 ' [for No of Records in a file] 4. Enter '1' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter "19941105" [for date]	A Output file is Generated with "1000" RECORDS file name is: "19941105-1000-1.csv" Each Record having CALLED & CALLING PARTY NO Of Length of 10 Digit	

8	TC-8	Checking the Behavior on Different Inputs when Invalid LENGTH OF MOBILE NO is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '1000 ' [for No of Records in a file] 4. Enter '1' [for No of Files for a day] 5. Enter '5' [for Length of Mobile No.] 6. Enter '19951105' [for date]	A Output file is Generated with "1000" RECORDS file name is: "19951105-1000-1.csv" Each Record having CALLED & CALLING PARTY NO Of Length of 8 Digit [default length]	
9	TC-9	Checking the Behavior on Different Inputs when Invalid Date In YYYYMMDD Format is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '2000 ' [for No of Records in a file] 4. Enter '2' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter '20070704' [for date]	A Output file is Generated with "2000" RECORDS having 10 digit length of calling and called party file name is: "20070704-2000-1.csv" "20070704-2000-2.csv" with output Message : Date is:20070704 File NO:2 File NO:1	
10	TC-10	Checking the Behavior on Different Inputs when Invalid Date In YYYYMMDD Format	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 1 [for choose File By date] 3. Enter '2000 ' [for No of Records in a file] 4. Enter '2' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter any character "a","@","!","/" or Invalid date 20202005	Program Will Prompted for a Valid No of Files with message : "Please Enter A VALID Date in YYYYMMDD Format:"	
11	TC-11	Checking the Behavior on Different Inputs when valid Month In YYYYMM Format is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 2 [for choose File By date] 3. Enter '1500 ' [for No of Records in a file] 4. Enter '2' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter '200406' [for month]	Program will Generate Output files according to "month * No of Files per day" with "1500" RECORDS in a file having 10 digit length of calling and called party	
12	TC-12	Checking the Behavior on Different Inputs when Current Month In YYYYMM Format is entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 2 [for choose File By date] 3. Enter '1500 ' [for No of Records in a file] 4. Enter '2' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter Current Months ex "201506"[for month]	Program will Generate Output files according to "current date[day] * No of Files per day" with "1500" RECORDS in a file having 10 digit length of calling and called party	
13	TC-13	Checking the Behavior on Different Inputs when invalid Month In YYYYMM Format is Entered	Check details In file 'Mobile_No_Prefix' 1. Run the Program 2. Enter 2 [for choose File By date] 3. Enter '1500 ' [for No of Records in a file] 4. Enter '2' [for No of Files for a day] 5. Enter '10' [for Length of Mobile No.] 6. Enter any character "a","@","!","/" or Invalid date 202020[for month]	Program Will Prompted for a Valid No of Files with message : "Please Enter A VALID Date in YYYYMM Format:"	

5. Conclusion

I have developed a program according to our requirement, which can generates thousands of records within seconds of time.

Data are stored in csv file format with extension of .csv. Files are readable in Microsoft excel. Files of records are created automatically by program. Program writes no of records in a file (as per given instruction) saves file and close it.

6. Result and Discussion

This program is good to create small no of files in some time. But in case of huge amount (cores) of data we need to optimize the program. So that it will consume less resources and perform any task in seconds.

We know that, a program need operating system resources to write in secondary memory, to do that it switch to OS and use the resource, perform task and relinquish them. A file can be create by doing this again and again.

This program can be optimize by storing some of records in a string and later write them in a file. By doing this we can save time and resources.

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