

Reporting Guide for Oracle Siebel eStatement Manager

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Preface

About Customer Self-Service and eaSuite™

Oracle has developed the industry's most comprehensive software and services for deploying Customer Self-Service solutions. eaSuite™ combines electronic presentment and payment (EPP), order management, knowledge management, personalization and application integration technologies to create an integrated, natural starting point for all customer service issues. eaSuite's unique architecture leverages and preserves existing infrastructure and data, and offers unparalleled scalability for the most demanding applications. With deployments across the healthcare, financial services, energy, retail, and communications industries, and the public sector, eaSuite powers some of the world's largest and most demanding customer self-service applications. eaSuite is a standards-based, feature rich, and highly scalable platform, that delivers the lowest total cost of ownership of any self-service solution available.

eaSuite consists of four product families:

- Electronic Presentment and Payment (EPP) Applications
- Advanced Interactivity Applications
- Enterprise Productivity Applications
- Development Tools

Electronic Presentment and Payment (EPP) Applications are the foundation of Oracle's Customer Self-Service solution. They provide the core integration infrastructure between organizations' backend transactional systems and end users, as well as rich e-billing, e-invoicing and e-statement functionality. Designed to meet the rigorous demands of the most technologically advanced organizations, these applications power Customer Self-Service by managing transactional data and by enabling payments and account distribution.

- eStatement Manager™ is the core infrastructure of enterprise Customer Self-Service solutions for organizations large and small with special emphasis on meeting the needs of organizations with large numbers of customers, high data volumes and extensive integration with systems and business processes across the enterprise. Organizations use eStatement Manager with its data access layer, composition engine, and security, enrollment and logging framework to power complex Customer Self-Service applications.
- **EPayment Manager**™ is the electronic payment solution that decreases payment processing costs, accelerates receivables and improves operational efficiency. EPayment Manager is a complete payment scheduling and warehousing system with real-time and batch connections to payment gateways for Automated Clearing House (ACH) and credit card payments, and payments via various payment processing service providers.

Oracle's Development Tools are visual development environments for designing and configuring Oracle's Customer Self-Service solutions. The Configuration Tools encompass data and rules

management, workflow authoring, systems integration, and a software development kit that makes it easy to create customer and employee-facing self-service applications leveraging eaSuite.

About This Guide

This guide describes the tasks required to use the Analytics Module to create reports. It is intended for the user who installs, configures, and maintains reporting.

Related Documentation

This guide is part of the eStatement Manager documentation set. For more information about implementing your eStatement Manager application, see one of the following guides:

Print Document	Description		
	How to install eStatement Manager and configure it in a distributed environment.		
	How to set up and run a live eStatement Manager application in a J2EE environment.		
1 2 0	How to customize J2EE applications for deployment with the eaSuite.		

2 About Reporting and Analytics

Overview

The Reporting and Analytics module creates preconfigured telecommunication reports from live and/or indexed data for the following criteria:

- Top 20 Most Expensive Calls
- Top 20 Longest Calls
- Top 20 Most Expensive Called Numbers
- Top 20 Most Called Numbers
- Top 20 Most Called Countries
- Cost Sum by Call Types
- Cost Sum by Months
- Cost Sum by Time Periods

Report data is generated in two ways:

- The Report job creates reports for "large" statements
- Real-time report generation creates reports for "small" statements

The minimum size of large statements generated by the Report Job is defined in the reporting job configuration. The maximum size of small statements generated by real-time reports is defined in the report description XML file.

Both methods produce report data. The Report job creates data which is not viewable until it is indexed by the Indexer job. The real-time report generator creates reports for immediate viewing, and also appends each new report to a larger report file. The larger report file of real-time reports is indexed by the Indexer job, so a real-time report only needs to be created once.

Installing and Configuring Reporting

The features added to eStatement Manager when you install Reporting support creating indexed and/or dynamic reports. The reportSample EAR provides a way to view reports.

If you haven't already installed *ear-reportSample.ear*, then do that first. See the *Deploying and Customizing J2EE Applications Guide for Oracle Siebel eStatement Manager* for more information about installing EAR files.

If you don't already have users defined, define at least one before running the Report job. If there are no users defined before you run the Report job, then the job returns a status of **no operation**. Also, the Report job only creates reports for enrolled users each time it runs.

The following sections describe how to create reports using the Report jobs with the provided supporting files. Note that the NationalWireless files provided for Reporting are not compatible with the NationalWireless files provided for other sample applications.

Creating the Master Application

The Master application is used when creating an Indexer job to index the data for reporting, and publish the files for the Indexer job.

To create the Master Application:

- 1 Create a new (master) application to index the sample data named NW.
- 2 Use edx/reportSample/ejb/ReportDataSource as the datasource when creating the new application.
- 3 Chose the appropriate value for "Index Partition Count". See the *Administration Guide for Oracle eStatement Manager* for more information about this parameter.

Creating an Indexer Job for the Master Application

Create an Indexer job under the Master application, and publish the files required by that job. These examples refer to the Indexer job as "Indexer."

To publish the Indexer files:

- 1 Click Launch Publisher, and then Create.
- 2 Click the Batch Jobs tab. Next to Indexer, click 0 (Number of Auxiliary files). Publisher displays the Create a Version Set For Indexer screen.
- 3 Select the application name from the drop-down list. For example, NW.
- 4 Browse and select the DDF file for the Indexer job. The sample DDF file is \$EDX_HOME/samples/NW_Report/MasterDDN/IndexerJob/NWIndexer.ddf.
- 5 Click Publish. Publisher displays the Submission screen with details about the DDF file.
- 6 Close the Publisher window.

To create and configure the Master Indexer job:

- 1 At the Create New Job screen in Command Center, click Configure Job and Continue. eStatement Manager displays the job configuration screen.
- When finished entering configuration parameters, click Submit Changes and Schedule. eStatement Manager asks "OK to submit this configuration?"
- 3 Click OK. eStatement Manager submits the job configuration parameters and displays the Schedule screen. Do not schedule the Indexer job at this time.
- 4 Be sure to copy the *NationalWireless.txt* file to the input directory before running the Indexer job. For example:
 - cd /opt/eStatement/samples/NW_Report/MasterDDN/datafile cp NationalWireless.txt /opt/eStatement/Input/NW
 - CAUTION: The NationalWireless.txt file in the NW_Report directory is NOT the same as the NationalWireless.txt file in the other Sample directories.
- 5 Run the Indexer job.

Enrolling Users

Users must be enrolled before you run the Reporting job.

To enroll users:

1 Log on to the reportSample application using http://<MACHINE_NAME>:<PORT>/reportSample, for example, in WebLogic:

```
http://audi:7001/reportSample
```

2 Click Enroll Now. The system displays the enrollment page:



3 Create a username and password for yourself, enter an email address, and the account number. You can use sample account number 0331734.

Creating the Reporting Job

Create a Report job under the Master application, and publish the files required by that job.

To publish files for a Report Job:

- 1 Create a second job for your reporting application, selecting the Job Type Report.
- 2 Click Launch Publisher, and click Create.
- 3 Click the **Batch Jobs** tab. Next to Report, click **0** (Number of Auxiliary files). Publisher displays the Create a Version Set For Report screen.
- 4 Browse <EDX_HOME>/samples/NW_Report/MasterDDN/ReportJob to find the sample NWDynXML.ddf file for XML output to publish it as part of the version set, for example:
 - /opt/eStatement/samples/NW_Report/MasterDDN/ReportJob/NWDynXML.ddf
- 5 Browse <EDX_HOME>/samples/NW_Report/MasterDDN/ReportJob to find the sample report description NWReportDescription.xml file, select it, and click Submit to publish the XML file as a version set, for example:
 - /opt/eStatement/samples/NW_Report/MasterDDN/ReportJob/NWReportDescription.x
 ml
- 6 Click Publish.
- 7 Close the Publisher browser window.
- 8 Submit the job, which displays the job configuration screen.

Task 1: StatementScanner

The Statement Scanner scans the index volume table to create a list of statements (documents) being indexed and passes the doc ID to the Report task if the account is valid (enrolled).

StatementScanner Task Configuration (Report job)				
Field	What to enter			
Index Volume Status		t the job can proceed when a date appears in either the ed or Date_Rejected column in the volumes table.		
	Accepted	(Default) Choose this option if you do not have custom verification/audit application or if you have one and you want to run the job only after a volume has been approved.		
		If you choose this option, IVNScanner looks for a date in the Date Accepted column; if it contains a date, it proceeds to run the job.		
	Rejected	Use this setting to run the job even if a volume has been rejected in the custom verification application (use this option for testing purposes only). If you choose this option, IVNScanner looks for a date in the Date Rejected column; if it finds a date, it proceeds to run the job.		
Scan IVN Starting From (Number of Days)	Specify how many previous days' volumes to scan for; IVNScanner selects any volumes indexed on or between the current date and the number of days ago you specify. (7 is the default)			
Account Resolver	Specifies the Resolver used for user account information. For example, edx/reportSample/ejb/CDAAccountResolver.			
Account Attribute	For the CDA Account Resolver, use uid .			
Byte Count Threshold	Enter the size in bytes that will determine when not to process this statement. Statements below this size will be processed by the real-time report processor, not by the report job. The default (0) means that reports will be generated for all statements, and JIT reporting will not be used.			
Queue Size		w many statements will be scanned in the queue for each sk to process.		

Task 2: ReportTask

The Report task uses the published report description XML file to extract data from the files that were created by running the Indexer job. It then writes the new report files.

ReportTask Configuration (Report job)			
Field What to enter			
Report File Output Directory The path to the directory where the Report job writes the reports.			
	Determines how many times a failed statement is retried. After this number, a failed statement is marked as failed.		

Task: ReportCollector

The ReportCollector task generates one file for each indexed data file. No configuration is necessary for this task.

Submit and schedule the job. Be sure you have enabled concurrency for the eStatement Manager scheduler.

CAUTION: There must be at least one user enrolled to the application before running the Report job for it to run successfully. Otherwise, the job will report a No Operation in the Statement Scanner.

Report Job Results

The report job uses the master doc date of the statement to retrieve the version set of RDX and Dynamic XML DDF files when it generates and parses the XML statement produced by the statement scanner.

One report file is generated for each indexed data file, which contains all the reports defined in RDX for all statements in that data file.

After an IVN is scanned and processed by a report job, it will not be scanned again even if you run another report job under the same DDN.

If you get a No Operation status from the report job, the reason can be:

- There are no new IVNs, or,
- There are new IVNs, but there are no users enrolled. In this case, the default CDAAccountResolver returns false for each account. or,
- There are new IVNs and enrolled users, but the byte counts of all statements are less than the defined byte count threshold setting.

Indexing the Generated Report Data

The data generated by the Report job must be indexed so that customers can view the reports. This indexer job also indexes the data created by the JIT Report Collector job. You can use the sample DDFs with your ALF and HTML files to index the report data that was generated by the Report job. As part of creating the Indexer job, publish Html views for each report, and then create and run Indexer job.

The Reporting job creates one report file for each data file. The file name format is "r_IVN_<DataFileName>.txt", where IVN is the IVN number of indexed data file and <DataFileName> is the name of the indexed data file.

To create the Reporting application:

- 1 Create a new application using the name of the Master application with "_rpt" appended to the name. For example, if the master application is "NW", then the reporting application must be "NW_rpt".
- 2 Use edx/reportSample/ejb/ReportDataSource as the datasource.

To publish the dynamic HTML web views:

- 1 Start the Publisher, and click Create.
- 2 On the Dynamic Web Views tab (shown by default), click 1 under Number of Auxiliary Files for the HTML job type for each HTML view (except for CostSumByType, TopNExpCalls, and TopNExpNumCalled, for which you must click 2).

The sample files are located in \$EDX_HOME/samples/NW_Report/ReportDDN/HtmlViews (for UNIX, %EDX_HOME%\samples\NW_Report\ReportDDN\HtmlViews for Windows), where the subdirectory for each view name matches the view name. The following list shows the sample view names and the associated files that you must publish:

Html View Name: CostSumByMonth

DDF: CostSumByMonth.ddf **ALF**: CostSumByMonth.alf

HTML template: CostSumByMonth.htm

Auxiliary files: SubReport.htm

Html View Name: CostSumByTime

DDF: CostSumByTime.ddf **ALF**: CostSumByTime.alf

HTML template: CostSumByTime.htm Auxiliary files: SubReport.htm

Html View Name: CostSumByType

DDF: CostSumByType.ddf **ALF**: CostSumByType.alf

HTML template: CostSumByType.htm

Auxiliary files: SubReport.htm, GroupWithDynPat.htm

Html View Name: TopNCtryCalled

DDF: TopNCtryCalled.ddf **ALF**: TopNCtryCalled.alf

HTML template: TopNCtryCalled.htm Auxiliary files: SubReport.htm

Html View Name: TopNExpCalls

DDF: TopNExpCalls.ddf **ALF**: TopNExpCalls.alf

HTML template: TopNExpCalls.htm

Auxiliary files: SubReport.htm, GroupWithDynPat.htm

Html View Name: TopNExpNumCalled

DDF: TopNExpNumCalled.ddf **ALF**: TopNExpNumCalled.alf

HTML template: *TopNExpNumCalled.htm*

Auxiliary files: SubReport.htm, GroupWithDynPat.htm

Html View Name: TopNLongestCalls

DDF: TopNLongestCalls.ddf **ALF**: TopNLongestCalls.alf

HTML template: TopNLongestCalls.htm

Auxiliary files: SubReport.htm

Html View Name: TopNNumCalled

DDF: TopNNumCalled.ddf **ALF**: TopNNumCalled.alf

HTML template: TopNNumCalled.htm Auxiliary files: SubReport.htm

To create a Reporting Indexer job:

The following steps describe how to create an Indexer job to index the generated report data.

- 1 Create an Indexer job for the reporting application.
- 2 Start the Publisher, and create the following version set for the report indexer job:

Resource	Value
DDF	<edx_home>/samples/NW_Report/ReportDDN/IndexerJob/ReportIndexer.ddf</edx_home>

The indexer job should index all the files under its input directory.

The Z_DOC_DATE of indexed report is the one from the Z_DOC_DATE of report file, which is actually the doc date of the original statement. The Z_PRIMARY_KEY of indexed report is the master doc id of original statement.

3 Close the Publisher, return to the Indexer job and check the following information:

Resource	Value
Input File Path	/opt/eStatement/Input/NW_rpt
Input File Name	*.txt
Output File Path	Keep the default

4 Save the job and schedule it.

Real-Time Reports

The real-time reporting feature creates reports for data that is smaller in size than the value configured in the reporting job. After creating the report, it saves it in a file. The JIT Report Collector

job reads the real-time reports, concatenates them into a single report file to be indexed by the indexer job, and deletes the real-time files that have been indexed. After indexing, the next request for that report will be retrieved from the index instead of in real-time.

Real Time (or Just-In-Time) reporting is enabled by entries in the JITConfig section of the RDX file, which defines the maximum byte count for a JIT report, and the output directory of the .jit file .

When a user views a JIT report, a corresponding *.jit* file is generated in the output directory defined in the JITConfig section of the RDX. If the directory is undefined, the default is <EDX_HOME>/Output/<masterDDN>_rpt

After a number of *.jit* files have been generated, run the JIT Report Collector job. This job cleans up the directory by creating a single report file from the saved real-time reports, along with a *.lst* file containing the names of the collected *.jit* files. After the new report file has been indexed by the reporting application's index job, the next run of the JIT Report Collector job deletes the *.jit* files and the associated *.lst* file. Note that JIT reporting does not require running the JIT Report Collector job, but you should watch the directory to make sure it does not fill up with JIT files, and that the number of JIT files doesn't slow down JIT report retrieval.

CAUTION: If the "Ignore statements whose byte counts are less than" value in the Report Job configuration is greater than the JIT byte count threshold defined in the RDX (JITConfig), the reports for statements with byte counts within these two values will never be generated.

To create the JIT Report Collector job:

- 1 Create a JIT Report Collector job for the reporting application.
- On the JITRptCollector task configuration, check for the following information:

Resource	Value
JIT Report File Directory	Defines where JIT report files are generated. This must match the value in the reporting RDX file.
Collected Report File Directory	Defines where the JIT Report Collector job puts the collected JIT reports. It must match the directory where the report Indexer job looks for input.
Collection Threshold	Defines how many JIT files must be in the JIT Report File Directory for the JIT Report Collector job to run.

3 Submit and schedule the job. Be sure you have enabled concurrency for the eStatement Manager scheduler.

The JIT Report Collector job reports a NoOp status if:

- There are no *.jit files to collect.
- The number of JIT files is less than the value of JIT Report Collector parameter "Don't collect if number of JIT report files less than".
- 4 After running the JIT Report Collector job, be sure to run the reporting application's Indexer job. This makes the collected JIT files available to users, and let's the JIT Report Collector job know that it is safe to delete the collected JIT files the next time the job runs.

Upgrading from 3.4

If you are upgrading from Reporting 3.4, then follow these guidelines, referring to this document for details:

- 1 Update eStatement Manager as described in the *Installation Guide for Oracle eStatement Manager*.
- 2 Republish the report description XML file and DDF file for XML output under the Master DDN.

CAUTION: eStatement Manager's Indexer job allowed you to specify which fields you wanted to index in the job for previous versions. As of 4.0, the DDF file specifies which fields will be indexed. You will need to update your DDF files as part of upgrading eStatement Manager to 4.0, and rerun the Master indexer job.

- 3 Create and configure a new Report job.
- 4 Create and configure a new Report DDN.
- 5 Create a new Indexer job to index the reports, and publish the new views for each report type. Version 3.4 used 8 indexer jobs, which can be deleted.
- 6 Schedule and Run the master DDN indexer job to index new files and run report job to generate reports. Wait at least one day after the last 3.4 statement is indexed before running the Master Indexer.

4 Viewing Reports

Overview

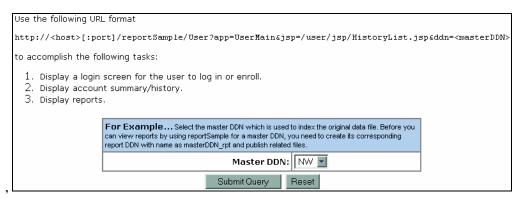
If you have used the sample DDFs and data files to install and configure the reporting feature, then you can use the following procedure to view the reports using the reportSample application. These examples use the account number 4694878 from

NW_Report/MasterDDN/datafile/NationalWireless.txt.

To view reports using the reportSample application:

1 Open reportSample, The URL is http://host:port/reportSample. For example:

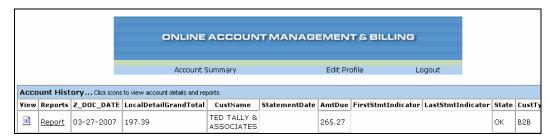
http://myHost:7001/reportSample



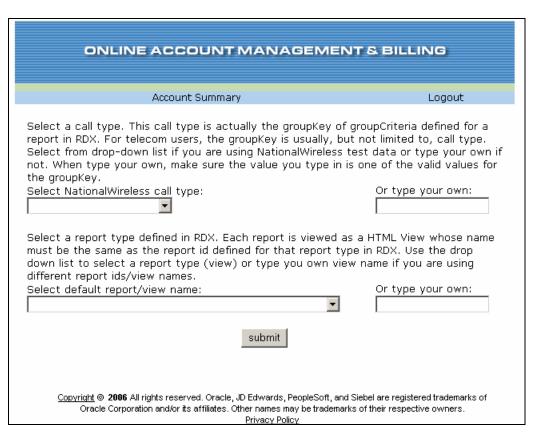
2 Select the Master application DDN (NW in our example) and click Submit Query.



3 Log on as the one of the users you created before running the Master Indexer.



4 Click Report to view the reports.



5 Select the call type from the drop-down menu, and then select the default report/view name from the second drop-down list, for example, select:

Parameter	Value
Call Type	All Call Type
Report/View Name	TopNExpCalls

6 Click **Submit**. This creates a report similar to this sample report:

leport Type - '	TopNExpCalls						
Details							
and							
lotals .							
			Top N Expens	ive Calls - Detai	ls		
LineCallDat	e LineCallTime	LineNumCalled				LineCallMins	LineCallUsage
01/30	12:12	603 764-2976	NASHUA	NH	D	75.2	25.14 10.61 7.58 6.98 2.90
02/01	11:35	970 408-3234	STAMFORD	CT	D	22.8	10.61
02/04	04:02	512 438-7956	MEDIA	PA	D	15.5	7.58
01/31	01:41	542 456-3681	PORTLAND	OR	D	12.3	6.98
01/30	10:55	978 401-8279	READING	WY	D	5.0	2.90
01/28	07:57	970 408-3234	STAMFORD	CT	Е	5.0	2.35
01/28	06:02	352 305-1209	LEHIGH	OH	Е	2.8	1.07
	Top N Tota	1					
TotalCount	TotalDuration T						
			ınn				
		6.63					