Common Core - Performance Diagnostic Plugin (OLTP)
User Guide

Oracle FLEXCUBE Universal Banking

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Common Core - Performance Diagnostic Plugin (OLTP) User Guide
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Contents

1. Preface 1-1
1.1 Introduction 1-1
1.2 Audience 1-1
1.3 Documentation Accessibility 1-1
1.4 Critical Patches 1-1
1.5 Organization 1-1
1.6 Abbreviations 1-2
1.7 Glossary of Icons 1-2
1.8 Related Documents 1-2
2. PDP Functionality 2-1
2.1 Introduction 2-1
2.2 PDP Maintenance 2-1
2.2.1 Invoking PDP Maintenance Screen - OLTP 2-1
2.3 Simulation 2-3
2.3.1 Performance Issue at Screen Level 2-3
2.4 Results 2-4
2.4.1 Process timings 2-4
2.4.2 Application Logs 2-5
3. Error Code and Messages 3-1
3.1 Error Codes 3-1
4. FAQ's 4-1
5. Function ID Glossary 5-1

1. Preface

1.1 Introduction

This manual is been designed to help you quickly get acquainted with the Performance Diagnostic Plugin of Oracle FLEXCUBE Universal Banking.

1.2 Audience

This manual is intended for the following User/User Roles:

Role	Function
Database Administrator	To provide the necessary Execute grants for TKPROF & HPROF file generation.
System Technical Analyst	To analyze the Performance lag issue faced by bank user.
Oracle FLEXCUBE user	Any user of Oracle FLEXCUBE facing performance issues in the system

1.3 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

1.4 Critical Patches

Oracle advices customers to get all their security and vulnerability information from the Oracle Critical Patch Update Advisory, which is available at Critical Patches, Security Alerts and Bulletins. All critical patches should be applied in a timely manner to ensure effective security, as strongly recommended by Oracle Software Security Assurance.

1.5 Organization

This manual is organized as follows:

Chapter	Description
Chapter 1	Preface gives information on the intended audience. It also lists the various chapters covered in this User Manual.
Chapter 2	Functionality and Maintenance of various parameters for Performance Diagnostic Plugin - OLTP
Chapter 3	Error Code and Message
Chapter 4	Frequently Asked Question's (FAQ's)
Chapter 5	Function ID Glossary

1.6 Abbreviations

Abbreviation	Description
DBA	Database Administrator
HPROF	Hierarchical Profiler
OLTP	Online Transaction Processing
PDP	Performance Diagnostic Plugin
PLSQL	Procedural Language for SQL
SQL	Structured Query Language
TKPROF	Transient Kernel Profiler

1.7 Glossary of Icons

This User Manual refers to the following icons.

Icons	Function
	Exit
	Option list
	Add Row
	Delete Row

1.8 Related Documents

For further information on procedures discussed in the manual, refer to the Oracle Database manuals on:

- Enabling SQL Tracing and Using TKPROF
- Using the PL/SQL Hierarchical Profiler

2. PDP Functionality

2.1 Introduction

Performance Diagnostic Plugin (PDP) is a tool to capture the performance lag reports like TKPROF and Hierarchical profiling (HPROF) along with capturing processing time for OLTP transactions in FCUBS.

Existing methods of capturing these reports at a very high level causing difficulties in analyzing the precise point of issue and involves DBA's. PDP helps to get the report precisely at the issue level i.e. action based reports for a user.

2.2 PDP Maintenance

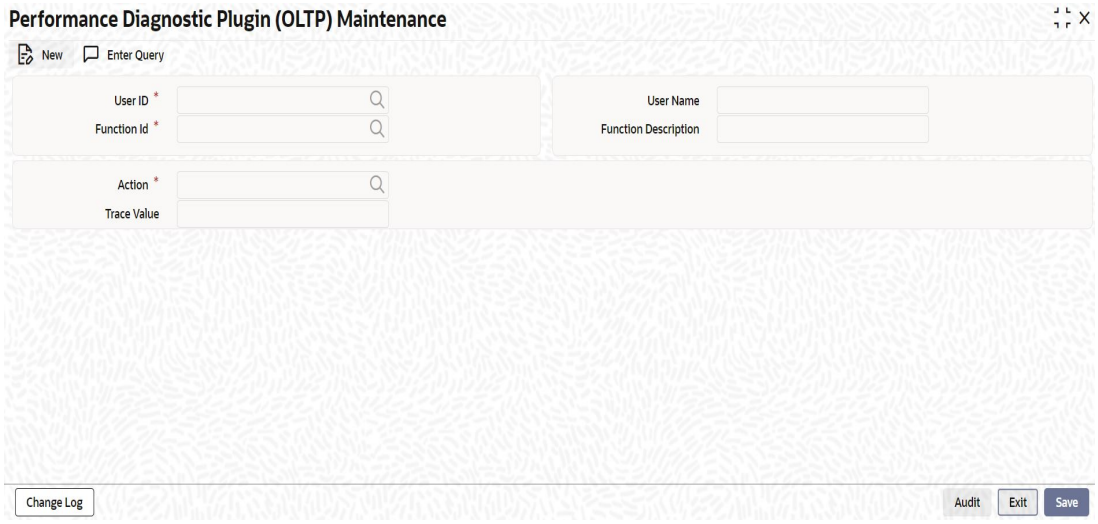
Performance Diagnostic Plugin tool depends on the initial maintenance of the performance issue faced by the user to generate the performance bottleneck reports for analysis.

This section contains the following topics:

- Section 2.2.1, "Invoking PDP Maintenance Screen - OLTP"
- Section 2.2.1.1, "Viewing PDP Summary Screen - OLTP"

2.2.1 Invoking PDP Maintenance Screen - OLTP

You can invoke the 'Performance Diagnostic Plugin (OLTP) Maintenance' screen by typing 'STDAPPDP' in the field at the top right corner of the Application tool bar and clicking on the adjoining arrow button.



You can specify the following fields:

User ID

Specify the User ID details for user facing the performance issue.

User Name

This displays the user id selected.

Function Id

Specify the Function Id details for the screen facing the performance issue.

Function Description

This displays the screen name selected.

Action

Specify the Action/Operation for which the user has faced the performance issue.

Trace Value

Provides the options for users to choose the type of reports required for analysis along with process timings and application Logs. Below are the options to choose from:

UI Option Name	Description
Process Timing at Database Level	Transaction time at Database level
Process Timing at Application Level	Transaction time at Application level
Application Logs	Application log generation
ALL	Transaction time at DB & Application Layer, Application Log

2.2.1.1 Viewing PDP Summary Screen - OLTP

You can view the summary details of PDP in the 'Performance Diagnostics Plugin (OLTP) Summary' screen. You can invoke this screen by typing 'STSAPPDP' in the field at the top right corner of the Application tool bar and clicking on the adjoining arrow button.



In the Performance Diagnostics Plugin (OLTP) Summary screen, you can base your queries on any or all of the following parameters and fetch the records:

- Authorization Status
- Record Status
- User ID
- Function ID
- Action
- Trace Value

Click on the ‘Search’ button. The system identifies all records satisfying the specified criteria and displays the same.

2.3 Simulation

After the maintenance in STDAPPDP, a particular user facing the performance issue needs to simulate the case within the system to capture the required performance lag reports or process timings. The below sections, depict a sample performance issue faced by a user at both screen level as well as external transaction/gateway level.

This section contains the following topic:

- Section 2.3.1, "Performance Issue at Screen Level"

2.3.1 Performance Issue at Screen Level

Problem Description:

User “**TEST_USER**” is facing a problem during executing query operation in the Customer Creation screen (STDCIF). The query operation takes more time to display the record and the support team has asked the user to share the process timings at both database & Application level, TKPROF & application log to analyze the same.

Problem Simulation:

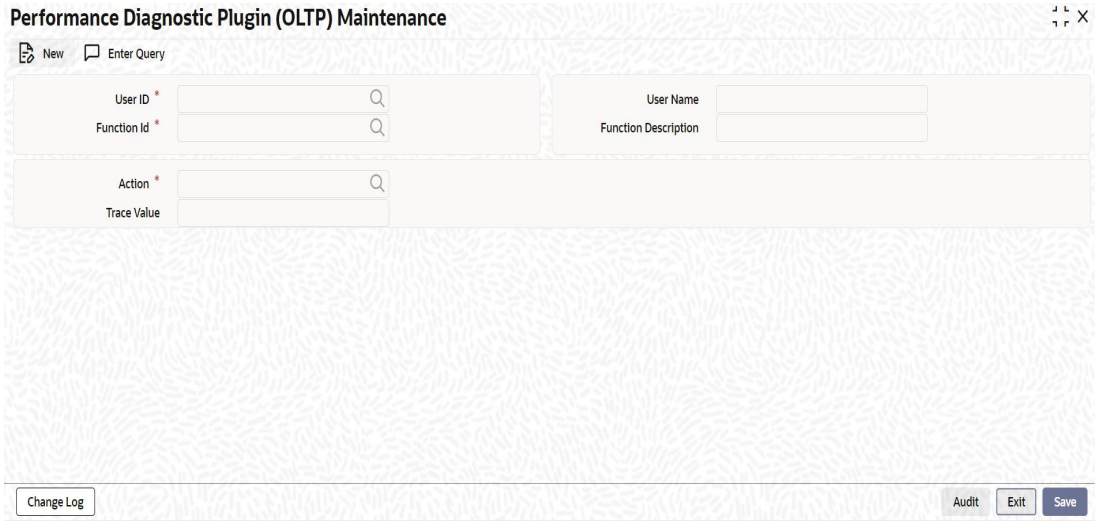
1. To capture the performance lag reports along with process timing, the user needs to maintain these details in the system under STDAPPDP as specified under Section 2.2.1, "Invoking PDP Maintenance Screen - OLTP".

User ID: TEST_USER

Function ID: STDCIF

Action: EXECUTEQUERY

As per the requirement, user needs to capture process timings, TKPROF & Application Log; the trace value selected would be “ALL” i.e. it is a combination of all the trace value options.



2. Once the above Maintenance is completed, log in with “**TEST_USER**” and query for a customer record in the STDCIF screen. On opening up of STDCIF screen, click on Enter Query action and input the customer number and later click on “**Execute Query**”.

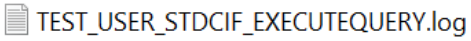
3. Due to the performance issue faced by the user, customer details might be fetched after few minutes on the screen and once the details are displayed, the required performance lag report are captured into their respective folders/tables as configured.

Results Captured

- **Process timings:** Captured process timings for Execute Query operation are inserted into table **GWTB_DBTIME_LOG** for both Database & Application Level as per the selection of trace value in the maintenance screen. Below screenshot shows the timing details captured for the entire operation of Execute Query.

USERID	FUNCTION_ID	ACTION	CHANNEL	LAYER	START_TIMESTAMP	END_TIMESTAMP	TRN_INFO
TEST_USER	STDCIF	EXECUTEQUERY	UI	APP_TIMING	17-JUN-21 11.30.56.641000000 AM	17-JUN-21 11.30.57.553000000 AM	EXECUTEQUERY_SUCCESS
TEST_USER	STDCIF	EXECUTEQUERY	UI	Database Timings	17-JUN-21 11.30.56.768634000 AM	17-JUN-21 11.30.57.487362000 AM	EXECUTEQUERY_SUCCESS

- **Application Log:** Captured application logs are placed under application log directories.



More details on the configuration of output directories are provided under Section 2.4, "Results".

2.4 Results

Results captured by the system are subjected to the maintenance of Trace. All files/timings captured are placed under configured directories/tables.

This section contains the following topics:

- Section 2.4.1, "Process timings"
- Section 2.4.2, "Application Logs"

2.4.1 Process timings

PDP facilitates the capture of process timings for easy analysis and the timings captured at both Database as well as Application/Infra Level based on the selection of trace value. All the process timings are captured under the table **GWTB_DBTIME_LOG**.



Details of each column are given below,

User Id

User ID of the simulating user facing performance issue.

Function Id

Function Id used during the simulation of the issue.

Action

Operation for which the performance issue is being faced.

Channel

Channel via which the operation carried out.

UI = Operation via Screen.

GW = External System or Gateway.

Layer

Layer at which the transaction timings were captured.

Application Timings = Application layer

Database Timings = Database Layer

Start Timestamp

Start timing of the operation.

End Timestamp

End timing of the operation.

Transaction Info

Specifies if the process was Successful or Failure along with operation being pre-fixed.

Process timings capture happens on a selection of the below trace.

- Process Timing at Database Level
- Process Timing at Application Level
- ALL

2.4.2 Application Logs

Application logs are the Java level debug files generated by the system to capture the code flow along with errors for analysis in java layer. These logs are similar to the existing Application level logs generated but consist only of operation level details.

PDP captures the application logs for specific user, for specific function id and operation as specified during maintenance. These logs are not dependent on enabling/disabling at table CSTB_DEBUG_USERS but are generated automatically on selection of specific trace value during maintenance of that operation. These logs generated under specific directory configured during initial setup i.e. APPLICATION_WORK_AREA specified under fcubs.properties file. Logs generated follow a standard naming convention and format is mentioned below,

```
<USERID>_<FUNCTIONID>_<ACTION>.log
```

Application logs generation happens on selection of below trace values.

- Application Logs
- ALL

Note

Below is the sample file attached for reference.

Application Log	TEST_USER_STDCIF_EXECUTEQUERY.log

3. Error Code and Messages

This chapter contains the following section:

- Section 3.1, "Error Codes"

3.1 Error Codes

Function ID	Error Code	Message
STDAPPDP	ST-PDP-001	Invalid Trace Value

4. FAQ's

1. **What is SMTB_USER_FUNCTION_TRACE Table? How are values inserted into it?**

   SMTB_USER_FUNCTION_TRACE is a data store for capturing the function id related maintenance for Performance Diagnostic Plugin functionality i.e. it will store, Function ID, Action, User Id, and Trace Value. Based on these parameters- Time Lag Report will be generated. The data can be captured using the newly designed function id STDAPPDP.

2. **What is the use of the CSTB_PARAM flag? When will the CSTB_PARAM be set to 'Y' (Enabled)**

   CSTB_PARAM table will have a Performance Diagnostic Plugin (PDP) specific flag called TIME_LOG, which is used to enable or disable the functionality of PDP (i.e. Capturing of any performance lag reports or process timings or even specific application log) in the System. By default, the value is set as 'N'. Currently, the Performance Diagnostic Plugin works for OLTP processes only.

3. **What is the mechanism used to obtain the Application Log?**

   Existing Infra level functionality is used to capture the application log by retaining any existing logs related to user and capturing a new log based on a specific naming convention i.e. <USERID>_<FUNCTIONID>_<ACTION>.log for a particular operation specified during maintenance. Application logs are enabled/disabled automatically at infra level and generated application log will be written on Server as file.

4. **Is trace values "ALL" combination of other trace values? If yes, can this combination be achieved by inserting multiple records with the required trace values?**

   Yes, trace values "ALL" is a combination of other trace values specified like the capture of process timings, application log to be obtained in one go.

   The code is designed to pick only one trace value for a combination of User Id, Function ID & Action due to which multiple record maintenance is not allowed. These trace values are helpful in keeping the table clean and away from confusion for the Bank IT team during the maintenance.

5. **Is this PDP functionality specific to any product?**

   No. This enhancement is in the Infra Layer and it is supported in all ODT framework-based products processors.

6. **Provide a brief insight on results obtained for each trace value.**

Trace Value	Process Timing	Application Log	Trace File	HPROF File
Process Timing at Database Level	Y	N	N	N
Process Timing at Application Level	Y	N	N	N
Application Logs	N	Y	N	N
ALL	Y	Y	Y	N

5. Function ID Glossary

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STDAPPDP 2-2,2-4

STSAPPDP 2-3