

Plato Infrastructure Services Installation Guide
Oracle Banking Liquidity Management
Release 14.2.0.0.0
[December] [2018]



Table of Contents

1. PREFACE	1-1
1.1 INTRODUCTION	1-1
1.2 AUDIENCE	1-1
1.3 DOCUMENTATION ACCESSIBILITY	1-1
1.4 ORGANIZATION	1-1
1.5 RELATED DOCUMENTS	1-1
2. DATABASE SETUP.....	2-2
2.1 INTRODUCTION	2-2
2.2 PREREQUISITE	2-2
2.3 DATABASE SETUP.....	2-2
3. DOMAIN & CLUSTER CONFIGURATION	3-4
3.1 PLATO INFRASTRUCTURE DOMAIN CONFIGURATION	3-4
3.1.1 Prerequisite.....	3-4
3.1.2 Domain Creation and Configuration.....	3-4
4. DATA SOURCES CREATION.....	4-5
4.1 PREREQUISITE	4-5
4.2 DATA SOURCES LIST.....	4-5
5. DEPLOYMENTS	5-6
5.1 PREREQUISITE	5-6
5.2 DEPLOYMENT LIST	5-6
5.3 STEPS TO DEPLOY AS APPLICATION.....	5-6
6. RESTARTS AND REFRESH.....	6-7
6.1 RESTARTING SERVERS.....	6-7
7. SECURITY CONFIGURATION AND TOOLS INSTALLATION	7-8
7.1 PREREQUISITE	7-8
7.2 PLATO SECURITY JWT	7-8
7.3 PLATO SECURITY CONFIGURATION	7-8
7.3.1 Steps to configure	7-8
7.3.2 User Store	7-10
8. ZIPKIN SERVER SETUP	8-11
8.1 INTRODUCTION	8-11
9. LOGGING AREA	9-12
9.1 INTRODUCTION	9-12

1.1 Introduction

This guide would help you to install the Plato infrastructure services on designated environment. It is assumed that all the prior setup is already done related with WebLogic 12c installation, WebLogic managed server creation and Oracle DB installation.

It is recommended to use dedicated managed server for each of the Plato infrastructure services.

1.2 Audience

This document is intended for WebLogic admin or ops-web team who are responsible for installing the OFSS banking products.

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 Organization

This installation user guide would allow you to install following services in same order.

- WebLogic system environment settings
- Plato Discovery Service
- Plato Config Service
- Plato API Gateway Service
- Security configuration and tool installation

1.5 Related Documents

- Common Core Services Installation Guide
- Day 0 Setup Guide
- LDAP Setup Guide
- Oracle Banking Liquidity Management Annexure
- Oracle Banking Liquidity Management Pre-Installation Guide
- Oracle Banking Liquidity Management Services Installation Guide
- Oracle Banking Liquidity Management User Interface Installation Guide
- Security Management System Services Installation Guide
- SSL Setup Guide

2. Database Setup

2.1 Introduction

In this section you are going to setup database related configuration for PLATO Installation. Before you proceed ensure pre-installation setup is done.

2.2 Prerequisite

- Plato schema is created and all the required grants are given. It is recommended to have different schema for **Plato** and **Plato Security**.

Note: To know server's port no refer ANNEXURE-1. "How to check port no" section.

2.3 Database Setup

There are two alternate ways to create the database setup, viz.

1. Collect scripts from both the path mentioned in From-Path section in the table and compile into respective PLATO schema.
2. Run the **plato_db_setup.plb** file from the OSDC package.

[Note: To Compile DDL, SEQ or INC please refer- ANNEXURE-1.docx "How to compile DDL, SEQ and INC Section". To execute plato_db_setup.plb please refer ANNEXURE-1.docx "How to execute PLB file."]

DDL:

Service Name	From-Path	Compile To
plato-config-service	\\PLATO\plato-config-service\DB\DOMAIN\DDL	Plato Schema
plato-ui-config-service	\\PLATO\plato-ui-config-service\DB\DOMAIN\DDL	Plato Schema

SEQ:

Service Name	From-Path	Compile To
plato-ui-config-service	\\PLATO\plato-ui-config-service\DB\DOMAIN\SEQ	Plato Schema

INC:

Service Name	From-Path	Compile To
plato-config-service	\\PLATO\plato-config-service\DB\DOMAIN\INC	Plato Schema
plato-ui-config-service	\\PLATO\plato-ui-config-service\DB\DOMAIN\INC	Plato Schema
plato-ui-config-service	\\PLATO\plato-ui-config-service\DB\PLATO\INC	Plato Schema

To setup DB for PLATO SECURITY refer Security Configuration Chapter.

3. Domain & Cluster Configuration

3.1 Plato Infrastructure Domain Configuration

3.1.1 Prerequisite

- Database setup for all the modules viz. Plato, SMS, Common Core, OBLM Services and all Day-0 setups must be completed. **(Required)**
- Machine should have Java JDK1.8.0_181 has installed.
- Oracle Fusion Middleware 12cR2 12.2.1.3 has to be installed on the machine.

3.1.2 Domain Creation and Configuration

It is recommended to create the domain structure as given below and also to maintain the same nomenclature. For Creating Domain and Configuration please refer to ANNEXURE-1 “**How to create and Cluster Configuration**”.

Domain name: plato

- ❖ plato_discovery_cluster
 - managed_server1
- ❖ plato_config_cluster
 - managed_server2
- ❖ plato_api_gateway_cluster
 - managed_server3
- ❖ plato_ui_config_cluster
 - managed_server4

4. Data Sources Creation

4.1 Prerequisite

- Database schema for Plato is created and all the required grants are given.
- Plato domain and clusters are created.

4.2 Data sources List

The table below lists the data sources to be created on each managed server prior to deployment of applications onto managed servers.

Data Source Name	Data Source JNDI	Target
PLATO	jdbc/PLATO	managed_server1
PLATOSEC	jdbc/PLATO_SECURITY	managed_server2
PLATO_UI_CONFIG	jdbc/PLATO_UI_CONFIG	managed_server3 managed_server4

For creating data source in please refer ANNEXURE-1 “**How to create Data sources section**”.

5. Deployments

5.1 Prerequisite

Before you proceed with below, please make sure previous steps are completed.

5.2 Deployment List

Below table give details of the deployments required on each Server for the Plato application to run. Deploy one after other in the same given order.

Application	Archive Name	OSDC Path	Target
plato- discovery- service	plato-discovery-service-1.0.2.war	\PLATO\plato-discovery-service\APP	managed_server1
plato-config- service	plato-config-service-1.0.2.war	\PLATO\plato-config-service\APP	managed_server2
Plato-api- gateway	plato-api-gateway-1.0.2.war	\PLATO\plato-api-gateway\APP	managed_server3
Plato-ui-config-service	plato-ui-config-services-1.0.1.war	\PLATO\plato-ui-config-services \APP	managed_server4

5.3 Steps to Deploy as Application

To deploy application please refer ANNEXURE-1. “How to deploy section”.

[Note: After deploying “plato-discovery-service” it is recommended not to restart and refresh the server.]

6. Restarts and Refresh

Once everything is deployed, the managed servers. And for each application call path “/refresh” for refreshing the configuration properties.

6.1 Restarting Servers

To restart the server please refer to ANNEXURE-1.”**How to restart**” section.

7. Security Configuration and Tools Installation

7.1 Prerequisite

Before you proceed with below, please make sure LDAP server details is provided to you-Like LDAP_URL, USER_STORE, LDAP_SERVER_CREDENTIAL_SALT, LDAP_SERVER_USER, LDAP_SERVER_BASE, LDAP_SERVER_CREDENTIAL, LDAP_USER_SEARCH_BASE, LDAP_USER_PREFIX, CORS_ALLOWED_ORGINS, LDAP_SERVER_CREDENTIAL_SALT etc.

7.2 Plato Security JWT

Plato security module enables securing API micro services with JWT (JSON Web Tokens). JSON Web Tokens are an open, industry standard RFC 7519 method for representing claims securely between two parties. JSON Web Token (JWT) is a compact, URL-safe means of representing claims to be transferred between two parties. The claims in a JWT are encoded as a JSON object that is used as the payload of a JSON Web Signature (JWS) structure or as the plaintext of a JSON Web Encryption (JWE) structure, enabling the claims to be digitally signed.

7.3 Plato Security Configuration

Plato recommends creating new schema for security to keep the security related database objects at one place. If the environment is configured for multi-tenant, we require a security schema per tenant.

All the Plato security configurations are maintained at SECURITY_CONFIG table.

7.3.1 Steps to configure

There are two alternate ways to do the database setup, viz.

1. Collect scripts from both the path mentioned in From-Path section in the table and compile into respective PLATO schema.
2. Run the **platosec_db_setup.plb** file from the OSDC package.

[Note: To Compile DDL, SEQ or INC please refer- ANNEXURE-1.docx “How to compile DDL, SEQ and INC Section”. To execute platosec_db_setup.plb please refer ANNEXURE-1.docx “How to execute PLB file.”]

DDL:

Service Name	From-Path	Compile To
plato-api-gateway	\\PLATO\plato-api-gateway\DB\DOMAIN\DDL	Plato Security Schema

SEQ:

Service Name	From-Path	Compile To
plato-api-gateway	\\PLATO\plato-api-gateway\DB\DOMAIN\SEQ	Plato Security Schema

INC:

Open the **INC** mentioned in **From-Path** section and **Change the below KEY with provided LDAP details.**

<i>LDAP_SERVER_CREDENTIAL_SALT</i>	Enter LDAP server Credential salt e.g. 0.9482628451234567
<i>CORS_ALLOWED_ORGINS</i>	valid host names (comma delimited)
<i>LDAP_URL</i>	Enter LDAP Server URL Example: ldap://localhost:12345
<i>LDAP_SERVER_USER</i>	Enter LDAP Server USERID Example: uid=admin
<i>LDAP_SERVER_BASE</i>	Enter LDAP server BASE Example: dc=oracle,dc=com
<i>LDAP_SERVER_CREDENTIAL</i>	Enter LDAP server encrypted password using provided jwr algorithm Example: m0o/F3UvIwvBSv5C/TSckA== (use plato encryption utility to generate encrypted password)
<i>LDAP_USER_SEARCH_BASE</i>	Enter LDAP User search Base Example: ou=people
<i>LDAP_USER_PREFIX</i>	Enter LDAP User Prefix Example: uid

Service Name	From-Path	Compile To
plato-api-gateway	\\PLATO\plato-api-gateway\DB\DOMAIN\INC	Plato Security Schema

7.3.2 User Store

Plato supports following user stores for authentication Users Maintained at table.

1. Plato security can authenticate the users maintained at table (APP_USER) in the security schema. However we do not recommend using this option.
2. LDAP user store.
3. Plato security can integrate with LDAP server to authenticate the users.
4. For production deployment, the LDAP server should be an industry standard production grade server.

8. Zipkin Server Setup

8.1 Introduction

In this section you are going to install recommended Zipkin server for tracing and monitoring the micro services calls.

8.1.1 Download the Artifact

Before proceeding with the below steps ensure Plato database setup section completed. Zipkin Server should be downloaded and store in local file system to execute on host machine.

Zipkin Server JAR location: <https://zipkin.io/pages/quickstart>

8.1.2 Running the Zipkin Server

Zipkin server could be run by using the following syntax. `java -jar <location of zipkin-server-2.6.0-exec.jar> &`

Here, & is added to execute it in background mode. On Windows, you can ignore it. Zipkin runs on default port 9411.

8.1.3 Accessing the Zipkin Server

You can access the zipkin server by hitting the following URL.

http://<HOSTNAME_OR_IP>:<PORT>/zipkin/

The screenshot shows the Zipkin web interface. At the top, there is a navigation bar with the Zipkin logo and the text "Investigate system behavior". To the right of the logo are links for "Find a trace", "View Saved Trace", and "Dependencies". A "Go to trace" button is located in the top right corner. Below the navigation bar is a search form with the following fields:

- Service Name:** A dropdown menu with "customer-service" selected.
- Span Name:** A dropdown menu with "all" selected.
- Lookback:** A text input field with "1 hour" and a dropdown arrow.
- Annotations Query:** A text input field with the example query "e.g. 'http.path=/foo/bar/ and cluster=foo and cache.miss'".
- Duration (µs) >=:** An empty text input field.
- Limit:** A text input field with "10".
- Sort:** A dropdown menu with "Longest First" selected.

A blue button labeled "Find Traces" with a help icon (?) is positioned below the "Annotations Query" field. At the bottom of the form, there is a light blue message box that says "Please select the criteria for your trace lookup."

9. Logging Area

9.1 Introduction

This part of the document will talk about the logs area where after deployment of Plato Applications in WebLogic server.

Logging Area

Plato Application writes logs in the below area of the server-
<WEBLOGIC_DOMAIN_CONFIG_AREA>/ logs/plato-api-gateway.log

Let's assume a domain has been created **platoinfra_domain** in the following area of the server "/scratch/oracle/middleware/user_projects/domains/platoinfra_domain". Logging area for Plato would be **/scratch/oracle/middleware/user_projects/domains/platoinfra_domain/logs**.



Plato Infrastructure Services Installation Guide
Oracle Banking Liquidity Management
Version 14.2.0.0.0
[Dec] [2018]

Oracle Financial Services Software Limited
Oracle Park
Off Western Express Highway
Goregaon (East)
Mumbai, Maharashtra 400 063
India

Worldwide Inquiries:
Phone: +91 22 6718 3000
Fax: +91 22 6718 3001
www.oracle.com/financialservices/

Copyright © 2018, 2018, Oracle and/or its affiliates. All rights reserved.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate failsafe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

This software or hardware and documentation may provide access to or information on content, products and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.