

Oracle® Banking Microservices Architecture

Common Core Services Installation Guide



Release 14.7.5.0.0

G28097-01

September 2024

The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

ORACLE®

Copyright © 2018, 2024, Oracle and/or its affiliates.

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.

If this is software, software documentation, data (as defined in the Federal Acquisition Regulation), or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software," "commercial computer software documentation," or "limited rights data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed, or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. 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 fail-safe, 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.

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

Intel and Intel Inside are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Epyc, and the AMD logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about 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 unless otherwise set forth in an applicable agreement between you and Oracle. 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, except as set forth in an applicable agreement between you and Oracle.

Contents

1	<u>Database Setup</u>
2	<u>Domain and Cluster Configuration</u>
3	<u>Data Sources Creation</u>
4	<u>Deployments</u>
5	<u>Document Verification Framework</u>
6	<u>Restarts and Refresh</u>
7	<u>Logging Area</u>
8	<u>Known Issues - Resolutions</u>
	<u>Index</u>

Preface

- [Purpose](#)
- [Audience](#)
- [Documentation Accessibility](#)
- [Critical Patches](#)
- [Diversity and Inclusion](#)
- [Related Resources](#)
- [Acronyms and Abbreviations](#)
- [Organization](#)

Purpose

This guide helps to install the common core services on designated environment. It is assumed that all the prior setup is already done related to WebLogic installation, WebLogic managed server creation, and Oracle DB installation.

**Note:**

For the exact version to be installed, refer to the **Tech Stack** section of Release Notes.

It is recommended to use the dedicated managed server for each of the common core services.

Audience

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

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>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Critical Patches

Oracle advises customers to get all their security 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 make sure effective security, as strongly recommended by [Oracle Software Security Assurance](#).

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

Related Resources

For more information, refer to the following documents:

- *Configuration and Deployment Guide*

Acronyms and Abbreviations

The list of the acronyms and abbreviations used in this guide are as follows:

Table List of Acronyms and Abbreviations

Abbreviation	Description
SMS	Security Management System
CMC	Common Core

Organization

This guide allows the user to install the following services:

1. CMC-ACCOUNT-SERVICES
2. CMC ADDITIONAL-ATTRIBUTES-SERVICES
3. CMC-ADVICE-SERVICES
4. CMC-BASE-SERVICES
5. CMC-BATCH-SERVICES
6. CMC-BRANCH-SERVICES
7. CMC-BUSINESSOVERRIDES-SERVICES
8. CMC-CHARGES-CALCULATION-SERVICES
9. CMC-COREBANKING-ADAPTER-SERVICE
10. CMC-CURRENCY-SERVICES
11. CMC-CUSTOMER-SERVICES
12. CMC-DATASEGMENT-SERVICES
13. CMC-EXTERNAL-CHART-ACCOUNT

14. CMC-EXTERNAL-SYSTEM-SERVICES
15. CMC-EXTERNAL-VIRTUAL-ACCOUNT-SERVICES
16. CMC-FACILITIES-SERVICE
17. CMC-FC-AI-ML-SERVICES
18. CMC-ML-INDB-SERVICES
19. CMC-NLP-DASHBOARD-WIDGET-SERVICES
20. CMC-NLP- MAINTENANCE-SERVICES
21. CMC-NLP-OPENNLP-SERVICES
22. CMC-NLP-PIPELINE-SERVICES
23. CMC-NLP-TEXT-EXTRACTION-SERVICES
24. CMC-OBCBS-SERVICES
25. CMC-OBRH-SERVICE
26. CMC-REPORT-SERVICE
27. CMC-RESOURCE-SEGMENT-ORCHESTRATOR-SERVICE
28. CMC-SCREENCLASS-SERVICES
29. CMC-SETTLEMENTS-SERVICES
30. CMC-TRANSACTIONCONTROLLER-SERVICES
31. CMC-TXN-CODE-SERVICES
32. CMC-OPDS-SERVICES
33. CMC-TXN-CODE-SERVICESCMC-APPLICATIONCATEGORY-SERVICES
34. CMC-CHECKLIST-SERVICES
35. CMC-CHECKLISTMANAGEMENT-SERVICES
36. CMC-COMMENTS-SERVICES
37. CMC-DOCUMENT-SERVICES
38. CMC-DOCUMENTMANAGEMENT-SERVICES
39. CMC-KYCCHECK-SERVICES
40. CMC-MAILNOTIFICATION-SERVICES
41. CMC-PRIORITY-SERVICES
42. CMC-PROCESSCODE-SERVICE
43. CMC-SEQUENCEGENERATOR-SERVICES
44. CMC-ADDITIONAL-ATTRIBUTES-SERVICES
45. CMC-SLA-SERVICES

1

Database Setup

This topic describes the database setup related configuration for Common Core Installation.

Prerequisites

The below setup is dependent on Common Core Schema and SMS schema.

Before proceeding with the below setup, make sure that the Common Core Schema and SMS Schema is provided.

Database Setup

To set up Database, Common Core schema to be created.

Table 1-1 List of Services

Service Name	Schema Required
CMC-ACCOUNT-SERVICES	Yes (Common Core Schema)
CMC-ADDITIONAL-ATTRIBUTES-SERVICE	Yes (Common Core Schema)
CMC-ADVICE-SERVICES	Yes (Common Core Schema)
CMC-BASE-SERVICES	Yes (Common Core Schema)
CMC-BATCH-SERVICES	Yes (Common Core Schema)
CMC-BRANCH-SERVICES	Yes (Common Core Schema)
CMC-BUSINESSOVERRIDES-SERVICES	Yes (Common Core Schema)
CMC-CHARGES-CALCULATION-SERVICES	Yes (Common Core Schema)
CMC-COREBANKING-ADAPTER-SERVICE	Yes (Common Core Schema)
CMC-CURRENCY-SERVICES	Yes (Common Core Schema)
CMC-CUSTOMER-SERVICES	Yes (Common Core Schema)
CMC-DATASEGMENT-SERVICES	Yes (Common Core Schema)
CMC-EXTERNAL-CHART-ACCOUNT	Yes (Common Core Schema)
CMC-EXTERNAL-SYSTEM-SERVICES	Yes (Common Core Schema)
CMC-EXTERNAL-VIRTUAL-ACCOUNT-SERVICES	Yes (Common Core Schema)
CMC-FACILITIES-SERVICE	Yes (Common Core Schema)
CMC-FC-AI-ML-SERVICES	Yes (Common Core Schema)
CMC-ML-INDB-SERVICES	Yes (Common Core Schema)
CMC-NLP-DASHBOARD-WIDGET-SERVICES	Yes (Common Core Schema)
CMC-NLP-MAINTENANCE-SERVICES	Yes (Common Core Schema)
CMC-NLP-OPENNLP-SERVICES	Yes (Common Core Schema)
CMC-NLP-PIPELINE-SERVICES	Yes (Common Core Schema)
CMC-NLP-TEXT-EXTRACTION-SERVICES	Yes (Common Core Schema)
CMC-OBCBS-SERVICES	Yes (Common Core Schema)
CMC-OBRRH-SERVICE	Yes (Common Core Schema)
CMC-REPORT-SERVICE	Yes (Common Core Schema)
CMC-RESOURCE-SEGMENT-ORCHESTRATOR-SERVICE	Yes (Common Core Schema)

Table 1-1 (Cont.) List of Services

Service Name	Schema Required
CMC-SCREENCLASS-SERVICES	Yes (Common Core Schema)
CMC-SETTLEMENTS-SERVICES	Yes (Common Core Schema)
CMC-TRANSACTIONCONTROLLER-SERVICES	Yes (Common Core Schema)
CMC-TXN-CODE-SERVICES	Yes (Common Core Schema)
CMC-OPDS-SERVICES	Yes (Common Core Schema)
CMC-APPLICATIONCATEGORY-SERVICES	Yes (Common Core Schema)
CMC-CHECKLIST-SERVICES	Yes (Common Core Schema)
CMC-CHECKLISTMANAGEMENT-SERVICES	Yes (Common Core Schema)
CMC-COMMENTS-SERVICES	Yes (Common Core Schema)
CMC-DOCUMENT-SERVICES	Yes (Common Core Schema)
CMC-DOCUMENTMANAGEMENT-SERVICES	Yes (Common Core Schema)
CMC-KYCCHECK-SERVICES	Yes (Common Core Schema)
CMC-MAILNOTIFICATION-SERVICES	Yes (Common Core Schema)
CMC-PRIORITY-SERVICES	Yes (Common Core Schema)
CMC-PROCESSCODE-SERVICE	Yes (Common Core Schema)
CMC-SEQUENCEGENERATOR-SERVICES	Yes (Common Core Schema)
CMC-SLA-SERVICES	Yes (Common Core Schema)

2

Domain and Cluster Configuration

This topic describes the domain configuration for Common Core services.

Prerequisites

Before proceeding with the below setup, make sure that the below steps are done.

- The machine should have Java JDK installed.
- Oracle Fusion Middleware is installed on the machine.

 **Note:**

Before proceeding with the below steps, complete Oracle Banking Microservices Architecture installation as guided.

- Steps for creating all Common core domains, properties like port numbers, names will be changing based on the domain. Screenshots provided for such deviations. The domain creation process remains the same.

 **Note:**

For the exact version to be installed, refer to **Tech Stack** section of **Release Notes**.

Steps to Create Domain

It is recommended to have different managed server in one domain for each application. For Creating Domain and Configuration, refer to **Create Domain and Cluster Configuration** section in *Configuration and Deployment Guide*.

3

Data Sources Creation

This topic describes about the data sources creation for Common Core services.

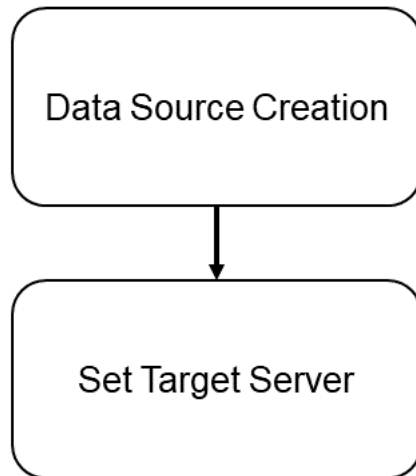
Prerequisites

Database and application setup for Oracle Banking Microservices Architecture must be performed before the deployment setup.

The data sources for the respective micro-services must be created before the application deployment. Each data source targets the corresponding server on which the application will be deployed.

The following sections describes the list of data sources required to be created for Common Core services and the steps to configure them in the server.

Figure 3-1 Data Source Creation



Data Sources List

The below list of the data sources must be created for each domain before the deployment of applications onto the managed servers.

Table 3-1 Data Sources List

Data Source Name	Data Source JNDI	Targets
PLATO	jdbc/PLATO	Common Core Managed Server
CMNCORE	jdbc/CMNCORE	Common Core Managed Server, API Gateway Server
PLATOBATCH	jdbc/PLATOBATCH	Common Core Managed Server
SMS	jdbc/sms	Common Core Managed Server

Table 3-1 (Cont.) Data Sources List

Data Source Name	Data Source JNDI	Targets
PLATOUI	jdbc/PLATO_UI_CONFIG	Common Core Managed Server
PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
PLATOSECURITY	jdbc/PLATO_SECURITY	Common Core Managed Server
<PRODUCT PROJECTION SCHEMA> (Required for Machine Learning framework)	jdbc/<PRODUCT PROJECTION SCHEMA>	Common Core Managed Server

 **Note:**

Steps to create data source in WebLogic is same for all the above except for the connection details and names.

Common Core Services using Plato-Feed

The below listed common core services requires the data source to be created for plato-feeds on each domain prior to deployment of applications onto managed servers.

Table 3-2 List of Services using Plato-Feed

Service Name	Data Source Name	Data Source JNDI	Targets
cmc-account-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
cmc-base-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
cmc-branch-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
cmc-settlement-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
cmc-currency-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server
cmc-customer-services	PLATOFEEED	jdbc/PLATOFEEED	Common Core Managed Server

Database Grant Privileges

The below listed user privileges are required for Machine Learning Framework:

- GRANT CREATE MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT CREATE ANY MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT ALTER ANY MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT DROP ANY MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT SELECT ANY MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT COMMENT ANY MINING MODEL TO <PRODUCT PROJECTION SCHEMA>;
- GRANT EXECUTE ON DBMS_DATA_MINING to <PRODUCT PROJECTION SCHEMA>;
- GRANT CREATE JOB TO <PRODUCT PROJECTION SCHEMA>;

Steps to create Data Source

For creating data sources in managed server, refer to **Create Data Sources** section in *Configuration and Deployment Guide*.

4

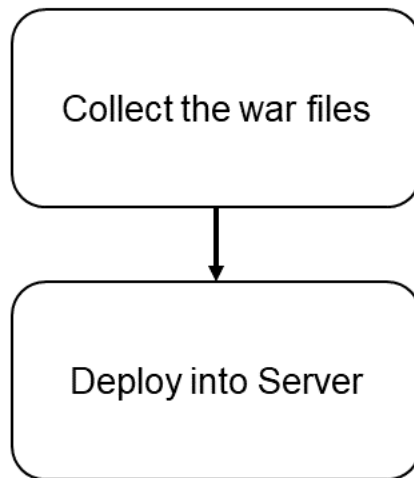
Deployments

This topic describes the list of war files for the deployment and depreciation of the Common Core services, and the steps to deploy and undeploy them in the server.

Prerequisites

The database setup and data sources creation need to be performed before the application deployment stage. Each of the services corresponds to a specific war file that needs to be deployed into the server.

Figure 4-1 Deployments



Deployments List

The below table provides the details of the deployments required on each domain for the Common Core application to run. Deploy one after the other in the same order as given below.

Table 4-1 Deployments List

Application	Archive name	OSDC path	Targets
CMC-ACCOUNT-SERVICES	cmc-account-services- {version}.war	{Unzip OSDC Package} \cmc-account-services	Common Core Managed Server
CMC-ADDITIONAL- ATTRIBUTES-SERVICE	cmc-additional- attributes-services- {version}.war	{Unzip OSDC Package} \cmc-additional- attributes-services	Common Core Managed Server
CMC-ADVICE- SERVICES	cmc-advice-services- {version}.war	{Unzip OSDC Package} \cmc-advice-services	Common Core Managed Server
CMC-BASE-SERVICES	cmc-base-services- {version}.war	{Unzip OSDC Package} \cmc-base-services	Common Core Managed Server

Table 4-1 (Cont.) Deployments List

Application	Archive name	OSDC path	Targets
CMC-BATCH-SERVICES	cmc-batch-services-{version}.war	{Unzip OSDC Package} \cmc-batch-services	Common Core Managed Server
CMC-BRANCH-SERVICES	cmc-branch-services-{version}.war	{Unzip OSDC Package} \cmc-branch-services	Common Core Managed Server
CMC-BUSINESSOVERRIDES-SERVICES	cmc-businessoverrides-services-{version}.war	{Unzip OSDC Package} \cmc-businessoverrides-services	Common Core Managed Server
CMC-CHARGES-CALCULATION-SERVICES	cmc-charges-calculation-services-{version}.war	{Unzip OSDC Package} \cmc- charges-calculation -services	Common Core Managed Server
CMC-COREBANKING-ADAPTER-SERVICE	cmc-corebanking-adapter-service-{version}.war	{Unzip OSDC Package} \cmc-corebanking-adapter-service	Common Core Managed Server
CMC-CURRENCY-SERVICES	cmc-currency-services-{version}.war	{Unzip OSDC Package} \cmc-currency-services	Common Core Managed Server
CMC-CUSTOMER-SERVICES	cmc-customer-services-{version}.war	{Unzip OSDC Package} \cmc-customer-services	Common Core Managed Server
CMC-DATASEGMENT-SERVICES	cmc-datasegment-services-{version}.war	{Unzip OSDC Package} \cmc-datasegment-services	Common Core Managed Server
CMC-EXTERNAL-CHART-ACCOUNT	cmc-external-chart-account-{version}.war	{Unzip OSDC Package} \cmc-external-chart-account	Common Core Managed Server
CMC-EXTERNAL-SYSTEM-SERVICES	cmc-external-system-services-{version}.war	{Unzip OSDC Package} \cmc-external-system-services	Common Core Managed Server
CMC-EXTERNAL-VIRTUAL-ACCOUNT-SERVICES	cmc-external-virtual-account-services-{version}.war	{Unzip OSDC Package} \cmc-external-virtual-account-services	Common Core Managed Server
CMC-FACILITIES-SERVICE	cmc-facilities-service-{version}.war	{Unzip OSDC Package} \cmc-facilities-service	Common Core Managed Server
CMC-FC-AI-ML-SERVICES	cmc-fc-ai-ml-services-{version}.war	{Unzip OSDC Package} \cmc-fc-ai-ml-services	Common Core Managed Server
CMC-ML-INDB-SERVICES	cmc-ml-indb-services-{version}.war	{Unzip OSDC Package} \cmc-ml-indb-services	Common Core Managed Server
CMC-NLP-DASHBOARD-WIDGET-SERVICES	cmc-nlp-dashboard-widget-services-{version}.war	{Unzip OSDC Package} \cmc-nlp-dashboard-widget-services	Common Core Managed Server
CMC-NLP-MAINTENANCE-SERVICES	cmc-nlp-maintenance-services-{version}.war	{Unzip OSDC Package} \cmc-nlp-maintenance-services	Common Core Managed Server
CMC-NLP-OPENNLP-SERVICES	cmc-nlp-opennlp-services-{version}.war	{Unzip OSDC Package} \cmc-nlp-opennlp-services	Common Core Managed Server
CMC-NLP-PIPELINE-SERVICES	cmc-nlp-pipeline-services-{version}.war	{Unzip OSDC Package} \cmc-nlp-pipeline-services	Common Core Managed Server
CMC-NLP-TEXT-EXTRACTION-SERVICES	cmc-nlp-text-extraction-services-{version}.war	{Unzip OSDC Package} \cmc-nlp-text-extraction-services	Common Core Managed Server

Table 4-1 (Cont.) Deployments List

Application	Archive name	OSDC path	Targets
CMC-OBCBS-SERVICES	cmc-obcbs-services-{version}.war	{Unzip OSDC Package} \cmc-obcbs-service	Common Core Managed Server
CMC-OBHR-SERVICES	cmc-obrh-services-{version}.war	{Unzip OSDC Package} \cmc-obrh-services	Common Core Managed Server
CMC-OBHR-KAFKA-CONSUMER	cmc-obrh-kafka-consumer-{version}.war	{Unzip OSDC Package} \cmc-obrh-kafka-consumer	Common Core Managed Server
CMC-REPORT-SERVICE	cmc-report-service-{version}.war	{Unzip OSDC Package} \cmc-report-service	Common Core Managed Server
CMC-RESOURCE-SEGMENT-ORCHESTRATOR-SERVICE	cmc-resource-segment-orchestrator-service-{version}.war	{Unzip OSDC Package} \cmc-resource-segment-orchestrator-service	Common Core Managed Server
CMC-SCREENCLASS-SERVICES	cmc-screenclass-services-{version}.war	{Unzip OSDC Package} \cmc-screenclass-services	Common Core Managed Server
CMC-SETTLEMENTS-SERVICES	cmc-settlements-services-{version}.war	{Unzip OSDC Package} \cmc-settlements-services	Common Core Managed Server
CMC-TRANSACTIONCONTROLLER-SERVICES	cmc-transactioncontroller-services-{version}.war	{Unzip OSDC Package} \cmc-transactioncontroller-services	Common Core Managed Server
CMC-TXN-CODE-SERVICES	cmc-txn-code-services-{version}.war	{Unzip OSDC Package} \cmc-txn-code-services	Common Core Managed Server
CMC-APPLICATIONCATEGORY-SERVICES	cmc-applicationcategory-services-{version}.war	{Unzip OSDC Package} \cmc-applicationcategory-services	Mid-Office Managed Server
CMC-CHECKLIST-SERVICES	cmc-checklist-services-{version}.war	{Unzip OSDC Package} \cmc-checklist-services	Mid-Office Managed Server
CMC-CHECKLISTMANAGEMENT-SERVICES	cmc-checklistmanagement-services-{version}.war	{Unzip OSDC Package} \cmc-checklistmanagement-services	Mid-Office Managed Server
CMC-COMMENTS-SERVICES	cmc-comments-services-{version}.war	{Unzip OSDC Package} \cmc-comments-services	Mid-Office Managed Server
CMC-DOCUMENT-SERVICES	cmc-document-services-{version}.war	{Unzip OSDC Package} \cmc-document-services	Mid-Office Managed Server
CMC-DOCUMENTMANAGEMENT-SERVICES	cmc-documentmanagement-services-{version}.war	{Unzip OSDC Package} \cmc-documentmanagement-services	Mid-Office Managed Server
CMC-KYC-CHECK-SERVICES	cmc-kyccheck-services-{version}.war	{Unzip OSDC Package} \cmc-kyccheck-services	Mid-Office Managed Server
CMC-MAILNOTIFICATION-SERVICES	cmc-mailnotification-services-{version}.war	{Unzip OSDC Package} \cmc-mailnotification-services	Mid-Office Managed Server
CMC-PRIORITY-SERVICE	cmc-priority-service-{version}.war	{Unzip OSDC Package} \cmc-priority-service	Mid-Office Managed Server

Table 4-1 (Cont.) Deployments List

Application	Archive name	OSDC path	Targets
CMC-PROCESSCODE-SERVICE	cmc-processcode-service-{version}.war	{Unzip OSDC Package} \cmc-processcode-service	Mid-Office Managed Server
CMC-SEQUENCEGENERATOR-SERVICES	cmc-sequencegenerator-services-{version}.war	{Unzip OSDC Package} \cmc-sequencegenerator-services	-
CMC-SLA-SERVICES	cmc-sla-services-{version}.war	{Unzip OSDC Package} \cmc-sla-services	-
CMC-OPDS-SERVICES	cmc-opds-services-{version}.war	{Unzip OSDC Package} \cmc-opds-services	Common Core Managed Server
CMC-INTEREST-RATE-SERVICES	cmc-interest-rate-services-{version}.war	{Unzip OSDC Package} \cmc-interest-rate-services	Common Core Managed Server

 **Note:**

Refer to OSDC file for the exact version number for each service.

For the instructions to deploy the application, refer to the **Deploy Application** section in *Configuration and Deployment Guide* .

Deprecated Services

Deploy the common core service to clean up the deprecated service-related Database objects from common core / SMS / PLATO schemas.

Table 4-2 Depreciation File

Application	Archive name	OSDC path	Targets
CMC-SERVICE-DEPRECATION-SVC	cmc-service-deprecation-svc-{version}.war	{Unzip OSDC Package} \cmc-service-deprecation-svc	Common Core Managed Server

The below table provides the details of the deprecated services from the Common Core application and undeploy the services one after other in the same order as given below.

Table 4-3 List of Deprecated services

Application	Archive name	Targets
CMC-EARMARK-SERVICES	cmc-earmark-services-{version}.war	Common Core Managed Server
CMC-QUEUE-SERVICES	cmc-queue-services-{version}.war	Common Core Managed Server
CMC-SERVICE-DEPRECATION-SVC	cmc-service-deprecation-svc-{version}.war	Common Core Managed Server

 **Note:**

Refer to OSDC file for the exact version number for each service.

For the instructions to undeploy the deprecated applications, refer to the **Undeploy Application** section in *Configuration and Deployment Guide*.

5

Document Verification Framework

This topic describes about the document verification framework where after deployment of Common Core applications in the webLogic server.

Prerequisites

Python, Tesseract and other required libraries must be installed for running document verification APIs.

OML4Py Installation

Oracle Machine Learning for Python (OML4Py) enables you to run Python commands for data transformations and for statistical, machine learning, and graphical analysis on data stored in or accessible through an Oracle database using a Python API.

OML4Py is available in the following Oracle database environments:

- The Python interpreter in Oracle Machine Learning Notebooks in your Oracle Autonomous Database.
- An OML4Py client connection to OML4Py in an on premise Oracle Database instance.

We have setup OML4Py using on premise Oracle Database. For which, you must install Python, the required Python libraries, and the OML4Py server components in the database, and you must install the OML4Py client as mentioned in below steps.

1. First check the system requirements to setup OML4Py

[OML4Py On Premises System Requirements](#)

2. Python 3.9.5 is required to install and use OML4Py.

[Steps to install Python for OML4Py](#)

3. Both the OML4Py server and client installations for an on-premises Oracle database require installing a set of supporting Python packages.

[Steps to install Python supporting packages for OML4Py](#)

4. Follow the steps mentioned in the below link for installing and setting up OML4PY server and OML4PY client for on premise oracle database respectively.

[Steps to install and setup OML4Py server](#)

[Steps to install and setup OML4Py client](#)

Note:

Installing and setting up OML4Py server is optional for customers. Customers can only install OML4Py client, and the Python version supported by OML4PY.

Tesseract Installation

Tesseract is an optical character recognition (OCR) engine for various operating systems. The latest version must be installed on the machine to extract the text from the documents.

Refer to **Tesseract Installation** section in **Oracle Banking Microservices Platform Foundation Installation Guide** to manually install the latest version of the tesseract.

Document Verification Application Installation

The app will be shipped as a byte-coded whl file. This wheel file will install all the implementation files without the dependencies. All the required dependencies are bundled together in a python.zip file which are to be extracted and installed separately (refer to Step 4 below). It's recommended to install the whl file and the dependencies in a virtual environment using "pip" so that it doesn't affect any other operations or applications running in the system.

Applications using microservices based architecture and using the same for security, needs to create a Config.ini file, same is required for the Eureka server configuration. Please create a config file with the name Config.ini and paste the text below:

```
[DEFAULT]
eureka_server=http://<Host Name>:<Port Number>/plato-discovery-service/eureka
```

You can edit the eureka server address if needed. The app name should not be changed. This is important for Role-Based Access Control. Please note that registering the app on Eureka is optional and you can skip this if not needed. But in any case, Config.ini is required. In eureka_server variable you can simply give localhost url.

The folder structure to be followed is:

```
├── root_dir
├── python
└── Config.ini
```

Note:

Please make sure that the user are using linux operating system and the installed Python version is 3.9.5 and that of pip is above 20.0.0. Run the following command to upgrade pip to the latest version.

```
pip install --upgrade pip
```

Once the pip is upgraded, follow the steps below to install the app and the dependencies:

1. Use the below command to install the application wheel package provided, e.g. *ofss_ml_document_verification_server_without_req-{version}-py3-none-any.whl*

```
pip install <wheel_package_name>.whl
```

Note:

Refer to OSDC file for the exact version number.

2. Now all the dependencies need to be installed. In order to do this, extract the python.zip file provided, go into the python folder (cd python/) and run the following commands:

```
pip install configparser --no-index --find-links.
pip install connexion --no-index --find-links.
pip install datefinder --no-index --find-links.
pip install dateparser --no-index --find-links.
```

```

pip install Flask --no-index --find-links.
pip install importlib-metadata --no-index --find-links.
pip install opencv-python --no-index --find-links.
pip install pdf2image --no-index --find-links.
pip install Pillow --no-index --find-links.
pip install pyap --no-index --find-links.
pip install pybase64 --no-index --find-links.
pip install pytesseract --no-index --find-links.
pip install python-dateutil --no-index --find-links.
pip install six --no-index --find-links.
pip install pyxDamerauLevenshtein --no-index--find-links.
pip install python-magic --no-index --find-links.
(optional) pip install py-eureka-client --find-links.

```

 **Note:**

Few dependencies including numpy, pandas and scikit-learn that are already installed during OML4Py setup are skipped in above step.

 **Note:**

This application works when above libraries are installed with required versions. Please don't upgrade the libraries unless instructed in the documentation.

Installing py-eureka-client is optional as it is needed only if you want to register the app on Eureka.

3. After installing the wheel package and the dependencies, we can run the document verification server using the below-mentioned command,

```
python -m ofss_ml_document_verification_server
```

4. Please note: This will by default run the app on port 8090 and not register the app to Eureka. To do that please use the below-mentioned command:

```
python -m ofss_ml_document_verification_server -p 5000 -r true
```

The above commands make the app run on port 5000 and registers to the Eureka server as well. These arguments may or may not be used together and the port number can be any. By default, the system has been configured to -r false.

Please note that once the service is registered on Eureka, it will need role-based access to send and receive requests.

For example: if the app is registered on `http://<Host Name>:<Port Number>/plato-discovery-service`, then we need a bearer token from `http://<Host Name>:<Port Number>/api-gateway/platojwtauth` and then call `http://<Host Name>:<Port Number>/api-gateway/ofss_ml_document_verification_server/extractInformation` with the following headers:

1. Authorization - bearer <token>
2. appid- (ex- CMNCORE)
3. branchCode
4. content-Type - application/json
5. userId

Please note that the userId and branchCode will be based on the flyway script entries.

SMS Scripts:

```

Insert into SMS_TM_SERVICE_ACTIVITY
SERVICE_ACTIVITY_CODE,DESCRIPTION,CLASS_NAME,METHOD_NAME,APPLICATION_ID,SER
VICE_TYPE,UI_ACTIVITY_CODE)
values
('CMC_SA_OFSS_ML_DOCUMENT_VERIFICATION_EXTRACT_INFORMATION','Extracts
meaningful details from an
image','OFSS_ML_DOCUMENT_VERIFICATION_SERVER','extractInformation','CMC','S
ervice API',null);
commit;

```

```

Insert into SMS_TM_FUNCTIONAL_ACTIVITY
(FUNCTIONAL_ACTIVITY_CODE, APPLICATION_ID, TYPE) values
('CMC_FA_OFSS_ML_DOCUMENT_VERIFICATION_EXTRACT_INFORMATION','CMC','O');
commit;

```

```

Insert into SMS_TM_FUNC_ACTIVITY_DETAIL
(ID,FUNCTIONAL_ACTIVITY_CODE,SERVICE_ACTIVITY_CODE) values
('CMC_FD_OFSS_ML_DOCUMENT_VERIFICATION_EXTRACT_INFORMATION',
'CMC_FA_OFSS_ML_DOCUMENT_VERIFICATION_EXTRACT_INFORMATION',
'CMC_SA_OFSS_ML_DOCUMENT_VERIFICATION_EXTRACT_INFORMATION');
commit;

```

Plato Scripts:

```

Insert into PROPERTIES
(ID,APPLICATION,PROFILE,LABEL,KEY,VALUE) values
(PROPERTIES_ID_SEQ.NEXTVAL,'plato-api-
gateway','jdbc','jdbc','zuul.routes.ofssmldoc.path','/
ofss_ml_document_verification_server/**');
Insert into PROPERTIES
(ID,APPLICATION,PROFILE,LABEL,KEY,VALUE) values
(PROPERTIES_ID_SEQ.NEXTVAL,'plato-api-
gateway','jdbc','jdbc','zuul.routes.ofssmldoc.serviceId','ofss_ml_document_
verification_server');
Insert into PROPERTIES
(ID,APPLICATION,PROFILE,LABEL,KEY,VALUE) values
(PROPERTIES_ID_SEQ.NEXTVAL,'plato-api-
gateway','jdbc','jdbc','zuul.routes.ofssmldoc.stripPrefix','false');
commit;

```

This procedure makes sure that only authenticated users can use the API. However, the developers running the app have an option to disable registry on Eureka and test the API normally.

5. To run the document verification server in the background, use the command below.

```
nohup python -m ofss_ml_document_verification_server & tail -f nohup.out
```

 **Note:**

After the execution of the above command, all the execution logs will be added to nohup.out (text file). Now the user may close the terminal and the app will still be running on port.

6. To terminate/kill the app, we can use the netstat command to find the process_id using the port on which the app is running and then use the kill command with the process_id of the app as shown below to terminate the application.

```
netstat -nlp | grep 8090  
kill -9 <process_id>
```

6

Restarts and Refresh

This topic provides the information to restart and refresh the application.

Once the application is deployed, restart all the managed servers. For each application, call path `/refresh` for refreshing the configuration properties.



Note:

Refer to the **Restart Servers** section in *Configuration and Deployment Guide* for the instruction to restart the server.

7

Logging Area

This topic describes the logging area where the logs are found after deploying the Common Core applications in the WebLogic server.

Common Core Application writes logs in the below area of the server:

```
<WEBLOGIC_DOMAIN_CONFIG_AREA>/servers/CMNCOREAPP/logs/CMNCOREAPP.out
```

Let's assume a domain has been created **CommonCore_domain** with **managed_server** name called **CMNCOREAPP** in the following server area.

```
/scratch/oracle/middleware/user_projects/domains/CommonCore_domain.
```

Logging area for Common core is /scratch/oracle/middleware/user_projects/domains/CommonCore_domain/servers/CMNCOREAPP/logs/CMNCOREAPP.out

8

Known Issues - Resolutions

This topic describes the known issues encountered while using the application and its resolutions.

cmc-ml-indb-services

Troubleshooting deployment failure in cmc-ml-indb-services.war

Deployment Error –

1. org.flywaydb.core.api.FlywayException: Validate failed: Migration checksum mismatch for migration version 101.32.5.0.0.4.101032004.1.1 -> Applied to database : 589007451 -> Resolved locally : -692687536 :org.flywaydb.core.api.FlywayException:Validate failed: Migration checksum mismatch for migration version 101.32.5.0.0.4.101032004.1.1 -> Applied to database : 589007451 -> Resolved locally : -692687536
2. org.flywaydb.core.api.FlywayException: Validate failed: Migration checksum mismatch for migration version 101.32.5.0.0.4.101032004.1.1 -> Applied to database : -692687536-> Resolved locally : 589007451:org.flywaydb.core.api.FlywayException:Validate failed: Migration checksum mismatch for migration version 101.32.5.0.0.4.101032004.1.1 -> Applied to database : -> -692687536 Resolved locally : 589007451

Resolution –

1. Error 1 should get resolved after applying the war from latest patchset.
2. Error 2 results in case there are manual modifications made in table flyway_schema_history. That is, checksum of script/file V101_32_5.0.0_4_101032004_1_1__CMC_TM_ML_ALGO_REPO.sql has been manually changed/updated to -692687536 in flyway table. If so please delete all the entries in flyway_schema_history table for script V101_32_5.0.0_4_101032004_1_1__CMC_TM_ML_ALGO_REPO.sql then redeploy/re-run the latest cmc-ml-indb-services.war.

cmc-branch-service

Troubleshooting steps for failed cmc-branch-service-6.0.0

For branch service, the below steps needs to be executed for deploying the service over the March patchset.

1. Run the following scripts on the SMS schema:
delete from "flyway_schema_history" where "version" in ('101.4.5.11.0.1.00051001006.10.1');

delete from SMS_TM_FUNC_ACTIVITY_DETAIL where ID in ('CMC_FA_BRANCH_WORKHR_GETALL','CMC_BRANCH_WORKHR_GETID','CMC_BRANCH_WORKHR_SAVE','CMC_FA_BRANCH_TIME_GETALL','CMC_BRANCH_WORKHR_AUTHQRY','CMC_BRANCH_WORKHR_AUTH','CMC_BRANCH_WORKHR_CLOSER ECRD','CMC_BRANCH_WORKHR_DELETE','CMC_BRANCH_WORKHR_GETHISTRY','CMC_BRANCH_WORKHR_MODRECRD','CMC_BRANCH_WORKHR_ROPNRECRD');

commit;
2. Start the cmc-branch-service-6.0.0 application in the Weblogic.

Index