REST API Services Deployment in WebSphere Oracle FLEXCUBE Universal Banking Release 12.87.06.0.0 [May] [2020]



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1. FLEXCUBE Universal Banking Solutions

This document describes step to install REST Services into WebSphere application server in full.

1.1 REST API Services Full Deployment

- 1. The following jars must be placed in the {WAS_Installed_Location}/ IBM/WebSphere/AppServer/lib/ext folder of the server and restart.
 - a. ojdbc6.jar
 - b. eclipselink.jar
 - c. jettison-1.3.7.jar
- 2. Before deploying the EAR, please create an XA Datasource jdbc/fcliteAPIDS that will be referring to the API DB
- 3. Launch WebSphere console following screen will be displayed.

WebSphere. software	
	WebSphere Integrated Solutions Console
IBM, the IBM logo, International Busin product and service	 Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. ibm.com and WebSphere are trademarks or registered trademarks of ness Machines Corp., registered in many jurisdictions worldwide. Other e names might be trademarks of IBM or other companies. A current list of available on the Web at Copyright and trademark information.

UserId: Enter user name

4. Click on 'Log in' and the following screen is displayed:



View: All tasks	Welcome	Wekone					
Wekome	Welcome	7.0	About this Integrated Solutions Console				
Guided Activities			Integrated Solutions Console, 8.5.5.9				
) Servers	Integrated Solutions Console provides a common administrative console for multiple products. The table lists the product suites that in more information.	can be administered through this installation. Select a product suite to view	Build Number: cf091608.05 Build Date: 2/25/16				
Applications			LICENSED MATERIALS PROPERTY OF				
Senices	Suite Name	Version 8.5.5.9	IBM 5724-J08, 5724-I63, 5724-H88,5724-	٣			
Resources	WebSphere Application Server	2,0,0,9	H89, 5655-W65 (C) Capyright	1			
Security							
Environment							
System administration							
Users and Groups							
Monitoring and Tuning							
Troubleshooting							
Service integration							
UDDI							

5. Expand Applications from the left panel and the following screen will be displayed.

View: All tasks	Welcome		8	
Welcome	Wekome	7-0	About this Integrated Solutions Console	
R Guided Activities			Integrated Solutions Console, 8.5.5.9	
g Servers	Integrated Solutions Console provides a common administrative console for multiple products. The table lists the product suites that can be adm more information.	Integrated Solidions Console provides a common administrative console for multiple products. The table lists the product suites that can be administered through this installation. Select a product suite to view more information.		1
3 Applications			LICENSED MATERIALS PROPERTY OF	
 New Application Application Types Global deployment settings 	Suite Name WebSphere Application Server	Version 8.5.5.9	IBM 5724-308, 5724-163, 5724-H88,5724- H89, 5655-W65 (C) Copyright	
 Groud deposition seconds Bervices 				
Resources				
Security				
Environment				
System administration				
Users and Groups				
Monitoring and Tuning				
Troubleshooting				
Service integration				
1000				

6. Expand Application Types from the left panel and the following screen will be displayed.



View All tasks V	Welcome		
Wetoms	Welcare	710	About this Integrated Solutions Console
Guidel Activities			Integrated Solutions Console, 8.5.5.9
Series	Integrated Solutions Console provides a common administrative console for multiple products. The table lists the product suites that more information.	can be administered through this installation. Select a product suite to view	Build Number: cf191606.15 Build Date: 2/25/16
Applications			
 Nev Application 	Suite Name	Yersion	LICENSED MATERIALS PROPERTY OF Tem
🗄 Application Tipes	Veltighere Application Server	4559	5724-308, 5724-368, 5724-H88, 5724- H89, 5655-1165 (C) Copyright
VebSphere enterprise applications Collapse as-well applications Faces Solial deployment settings			
Serike			
Rearry			
Searty			
Environment			
System administration			
Users and Groups			
Monitaring and Tuning			
menceng are reing			
Trablehozing Trablehozing Senice magazian			

7. Select WebSphere enterprise allocations and the following screen will be displayed.

WebSphere. software			We				
View: All tasks	Cell=otss222433Node01Cell, Profile=AppSrv01 Enterprise Applications						
Welcome	Enterprise Applications						
E Guided Activities	Use this page to manage installed applications. A single application can be deployed onto multiple servers. Preferences Start Stop Install Uninstall Update Rollout Update Remove File Export DDL Export File To the server of						
Applications							
New Application							
Application Types							
 WebSphere enterprise applications 			[
 Business-level applications 	Select	Name 🛟	Application Status 🙆				
 Assets 	You ca	n administer the following resources:					
 Global deployment settings 		DefaultApplication	\$				
Services	0		*				

8. Click on Install and the following screen will be displayed.



Enterprise Applications

paring	for the application installation	?
Specif	fy the EAR, WAR, JAR, or SAR module to upload and install.	-
-	th to the new application	
۲		
	Full path Choose File FCLiteAPIEAR.ear	
\bigcirc	Remote file system	
	Full path Browse	
Nex	t Cancel	

Choose File

Browse and select the EAR file.

9. Click Next and the following screen will be displayed.

Enterprise Applications
Preparing for the application installation
How do you want to install the application?
Fast Path - Prompt only when additional information is required.
Detailed - Show all installation options and parameters.
Choose to generate default bindings and mappings Previous Next Cancel

10. Click Next and the following screen will be displayed.



Step 1: Select	Select installation options
5 <u>tep 2</u> Map modules	Specify the various options that are available for your application.
	Precompile JavaServer Pages files
<u>5tep 3</u> Metadata for nodules	Directory to install application \$(APP_INSTALL_ROOT)/ofss2:
5tep 4 Summary	Distribute application
	Use Binary Configuration
	Application name
	FCLiteAPIEAR
	Create MBeans for resources
	Override class reloading settings for Web and EJB modules
	Reload interval in seconds
	Deploy Web services
	Validate Input off/warn/fail
	Process embedded configuration
	File Permission
	Allow all files to be read but not written to
	Allow executables to execute Allow HTML and image files to be read by everyone
	,*\.d =755#.*\.s=755#.*\.s=755
	Application Build ID
	Unknown
	Allow dispatching includes to remote resources
	Allow servicing includes from remote resources
	Business level application name
	Create New BLA
	Asynchronous Request Dispatch Type Disabled
	Allow EJB reference targets to resolve automatically
	Deploy client modules
	Client deployment mode Isolated
	Validate schema

11. Click Next and the following screen will be displayed.

	Step 1 Select	Ma	p modu	les to servers		
•	Step 2: Map modules to servers Step 3 Metadata for modules Step 4 Summary	co se fil C	ntained rvers. A e (plugir Clusters a	in your applicatio lso, specify the W n-cfg.xml) for ear and servers: ere:cell=ofss2224	n. Modules can b Veb servers as tai ch Web server is	r clusters of application servers where you want to install the modules that are installed on the same application server or dispersed among several application generated, based on the applications that are routed through. de=ofss222433Node01,server=server1 Apply
			Select	Module	URI	Server
				FCLiteServices- 1.0.jar	FCLiteServices- 1.0.jar,META- INF/ejb-jar.xml	WebSphere:cell=ofss222433Node01Cell,node=ofss222433Node01,server=server1
				FCLiteWeb- 1.0.war	FCLiteWeb- 1.0.war,WEB- INF/web.xml	WebSphere:cell=ofss222433Node01Cell,node=ofss222433Node01,server=server1

12. Click Next and the following screen will be displayed.



Ins	tall New Application			2		
	Specify options for installing enterpr	ise applications and modules.				
	Step 1 Select	Metadata for modules				
-	<u>Step 2</u> Map modules to servers Step 3: Metadata for	The metadata-complete attribute defines whether the deployment descriptor for this module is complete. Set the metadata-complete attribute to "true" to merge and persist annotation-based metadata with existing XML-based deployment descriptor metedata to avoid scanning of annotation-based metadata each time the module is read. If the attribute remains "false", then the annotation-based metadata is scanned each time the module is read and can impact performance.				
	modules <u>Step 4</u> Summary					
		Module	URI	metadata-complete attribute		
		FCLiteServices-1.0.jar	FCLiteServices-1.0.jar,META-INF/ejb-jar.xml			
		FCLiteWeb-1.0.war	FCLiteWeb-1.0.war,WEB-INF/web.xml			
			·			
	Previous Next Cancel					

13. Click Next and the following screen will be displayed.

	Step 1 Select	Summary					
	Step 2 Map modules	Summary of installation options	Summary of installation options				
	<u>Step 2</u> map modules to servers	Options	Values				
	Step 3 Metadata for	Precompile JavaServer Pages files	No				
	modules	Directory to install application	\$(APP_INSTALL_ROOT)/ofss222433Node01Cell/FCLiteAPIEAR.ea				
•	Step 4: Summary	Distribute application	Yes				
		Use Binary Configuration	No				
		Application name	FCLiteAPIEAR				
		Create MBeans for resources	Yes				
		Override class reloading settings for Web and EJB modules	No				
		Reload interval in seconds					
		Deploy Web services	No				
		Validate Input off/warn/fail	warn				
		Process embedded configuration	Yes				
		File Permission	.*\.dll=755#.*\.so=755#.*\.a=755#.*\.sl=755				
		Application Build ID	Unknown				
		Allow dispatching includes to remote resources	No				
		Allow servicing includes from remote resources	No				
		Business level application name					
		Asynchronous Request Dispatch Type	Disabled				
		Allow EJB reference targets to resolve automatically	No				
		Deploy client modules	No				
		Client deployment mode	Isolated				
		Validate schema	No				
		Cell/Node/Server	Click here				

14. Click Finish and the following screen will be displayed and Save the EAR deployed.



If there are enterprise beans in the application, the EJB deployment process can take several minutes. Do not save the configuration until the process completes.
Check the SystemOut.log on the deployment manager or server where the application is deployed for specific information about the EJB deployment process as it occurs.
ADMA5016I: Installation of FCLiteAPIEAR started.
ADMA5067I: Resource validation for application FCLiteAPIEAR completed successfully.
ADMA5058I: Application and module versions are validated with versions of deployment targets.
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
ADMA5081I: The bootstrap address for client module is configured in the WebSphere Application Server repository.
ADMA5053I: The library references for the installed optional package are created.
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
ADMA50011: The application binaries are saved in /scratch/programs/IBM/WebSphere/AppServer/profiles/AppSrv01/wstemp/0/workspace/cells/ofss222433Node01Cell/applications/FCLiteAPIEAR.ear/FCLiteAPIEAR.ear
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
SECJ0400I: Successfully updated the application FCLiteAPIEAR with the appContextIDForSecurity information.
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
ADMA5005I: The application FCLiteAPIEAR is configured in the WebSphere Application Server repository.
ADMA5113I: Activation plan created successfully.
ADMA5011I: The cleanup of the temp directory for application FCLiteAPIEAR is complete.
ADMA5013I: Application FCLiteAPIEAR installed successfully.
Application FCLiteAPIEAR installed successfully.
To start the application, first save changes to the master configuration.
Changes have been made to your local configuration. You can:
 <u>Save</u> directly to the master configuration.
<u>Review</u> changes before saving or discarding.
To work with installed applications, click the "Manage Applications" link.
Manage Applications

15. Once the EAR is deployed click on WebSphere enterprise applications following screen will be displayed where the deployed EAR can be found in resources column.

nterprise /	Applications	8
Enterp	rise Applications	
	page to manage installed applications. A single application can be depl	oyed onto multiple servers.
⊕ Prefe		
Start	Stop Install Uninstall Update Rollout Update Remove F	ile Export DDL Export File
D		
Select	Name 🛟	Application Status 🙆
You car	n administer the following resources:	
	DefaultApplication	⇒
	FCJNeoWeb	\$
	FCLiteAPIEAR	*
	FileUploadTest_war	\$
	ivtApp	\$
	avery	\$
Total 6		·

16. Check the application/EAR and click on Start the following screen will be displayed and your application will be in running.



iterprise /	Applications	2
	Messages	
	Application FCLiteAPIEAR on server server1 and node collection may need to be refreshed to show the current	a ofss222433Node01 started successfully. The : status.
Enterp	rise Applications	
Use this	page to manage installed applications. A single application can be depl	loyed onto multiple servers.
🗄 Prefe	erences	
Start	Stop Install Uninstall Update Rollout Update Remove F	ile Export Export DDL Export File
Select	Name 💠	Application Status ሷ
You ca	n administer the following resources:	
	<u>DefaultApplication</u>	♦
	FCJNeoWeb	\$
	FCLiteAPIEAR	\$
	<u>FileUploadTest_war</u>	⇒
	ivtApp	\$
	<u>guery</u>	<₽
Total 6	;	

Note: Before deploying the EAR, please create an XA Datasource **jdbc/fcliteAPIDS** that will be referring to the API DB. More details of creating the data source can be found in the Resource Creation document.

1.2 Enabling logs for REST Application

1. Launch WebSphere console following screen will be displayed.

WebSphere. softwar	e	
		hCabora Integrated
IBM.	IBM, the IBM logo, ibm.com and International Business Machine product and service names mig	f IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. d WebSphere are trademarks or registered trademarks of s Corp., registered in many jurisdictions worldwide. Other ht be trademarks of IBM or other companies. A current list of the Web at Copyright and trademark information.
UserId: Enter	user name	

2. Click on 'Log in' and the following screen is displayed:



/iew: All tasks	Welcome			
Welcome	Welcome	7-0	About this Integrated Solutions Console	
			NAMES OF COMPLEX	
Guided Activities Servers	Integrated Solutions Console provides a common administrative console for multiple products. The table lists the product suites that can b more information.	ie administered through this installation. Select a product suite to view	Integrated Solutions Console, 8.5.5.9 Build Number: cf091608.05 Build Date: 2/25/16	
Applications			LICENSED MATERIALS PROPERTY OF	
Services	Suite Name	Version	IBM 5724-J08, 5724-163, 5724-H88,5724-	
Resources	WebSphere Application Server	8.5.5.9	H89, 5655-W65 (C) Copyright	
Security				
Environment				
System administration				
Users and Groups				
Monitoring and Tuning				
Troubleshooting				
Service integration				
UDDI				

3. Expand 'Servers' from the left panel and the following screen is displayed:

View: All ta	isks T
Nweigatien f	rame
🛨 Guided Activ	ities
Servers	
🛨 Server Ty	pes
 Applications 	
Services	
Resources	
🛨 Security	
Environment	
🛨 System adm	inistration
⊕ Users and G	roups
Monitoring a	nd Tuning
Troubleshoo	ting
🛨 Service integ	ration
+ UDDI	



4. Expand 'Server Type' and Click WebSphere application servers and the following screen is displayed:

View: All tasks V	Application servers			
Weborne Guided Activities - Servers	Application servers Use this page to view a flat of the application servers in your emirorment and the status of each of these servers. You can also use this page to change the status of a specific application server.			ange the status of a specific application server.
	Disferences			
Server Types WebSphere application servers WebSphere MQ servers	* 9			
 Mebionere wy servers Web servers 	Name 🔿	Node C	Host Name C	Version 🗘
Applications	You can administer the followin	resources:		
) Services	server1	ofss222433Node01	ofss222433.in.oracle.com	ND 8.5.5.9
Resources	Total 1			
e Security				
Environment				
) System administration				
E Users and Groups				
e Monitoring and Tuning				
E Troubleshooting				
Service integration				

5. Click server1 and the following screen is displayed:

ieneral Properties	Container Settings
server1	Session management
Node name	SIP Container Settings
ofss222433Node01	🕃 Web Container Settings
land in the second s	Portlet Container Settings
Run in development mode	EJB Container Settings
Parallel start	Container Services
Start components as needed	Business Process Services
Access to internal server classes	Applications
Allow T	Installed applications
Server-specific Application Settings	
Classloader policy	Server messaging
Multiple 🔻	 Messaging engines
Class loading mode Classes loaded with parent class loader first	 Messaging engine inbound transports WebSphere MQ link inbound transports
Character Mich per en clara folder frac	 SIB service
	Server Infrastructure
Apply OK Reset Cancel	
	Java and Process Management
	Administration
	 Java SDKs
	Communications
	Ports
	Messaging
	 Communications Enabled Applications (CEA)
	Performance
	 Performance Monitoring Infrastructure (PMI)
	 Performance and Diagnostic Advisor Configuration
	Security
	 Security domain
	 Default policy set bindings
	 JAX-WS and JAX-RPC security runtime
	Troubleshooting
	 NCSA access and HTTP error logging
	 Diagnostic trace service
	Logging and tracing
	Change log detail levels Use this page to view and modify the properties for the diag
	Additional Properties
	Class loader viewer service
	 Endpoint listeners
	 <u>Debugging service</u> Thread pools
	 Inread pools Reliable messaging state
	 Web server plug-in properties

6. Click Diagnostic trace service and the following screen is displayed:



ation servers	2
plication servers > server1 > Diagnostic trace service e this page to view and modify the properties of the diagnostic trace service. Diagnostic trace provides ply when the server is restarted. Changes on the Runtime panel apply immediately.	s detailed information about how the application server components run within this managed process. Changes on the Configuration p
nfiguration Runtime	
General Properties	Additional Properties
Trace Output None Memory Buffer Maximum Buffer Size Maximum File Size 20 MB Maximum Number of Historical Files File Name S(SERVER_LOG_ROOT) trace log	<u>Change log detail levels</u> (Change log detail levels)
Trace Output Format Basic (Compatible) • Apply OK Reset Cancel	

7. Click Change log detail levels and the following screen is displayed:

n servers	8
ation ser	rers > server1 > Diagnostic trace service > Change log detail levels
	na - employee the employee the employee of the
	control which events are processed by Java logging. Lick Components to spectry a log detail level for a detail event or a predefined group of components. Lick a compor lect a log detail level, log detail levels are cumulative, a level near the tog of the lick des and the subsequent levels.
uration	Runtime
neral Pro	perties
Change	log detail levels
-	
	ble logging and tracing of potentially sensitive data (WARNING: This might cause the log detail level setting to be modified when it is applied on the server.) ymoonents and specify a log detail level, Log detail levels specified here will apply to the entire server. Expand Components and Groups and click Components to specify a log detail level for individual components, or
	mponents and speciny and detail levels tog detail levels specined nere will apply to the entire server. Expland components and sroups and circk components to speciny and detail level for individual components, or ups to speciny a loo detail level for a predefined droup of components. Circk a component or groups mand to tail level, bad cetail levels and careful levels are comulative.
	romofec.*=all
-1110	
Com	ponents and Groups
Correla	tion
Enable	g and trace correlation so entries that are serviced by more than one thread, process, or server will be identified as belonging to the same unit of work.
En En	able log and trace correlation
	Include request IDs in log and trace records
	Include request IDs in log and trace records and create correlation log records
	Include request IDs in log and trace records, create correlation log records, and capture data snapshots
Apply O	K Reset Cancel
11111	

Change log detail levels

Add the entry com.off.*=all to the existing entry (i.e., now it will be *=info: com.ofss.*=all)

- 8. Restart the server post the change
- 9. The logs will now be written into the log area that is specified in the configuration Application servers > server1 > Diagnostic trace service.





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