REST API Services Deployment in WebSphere Oracle FLEXCUBE Investor Servicing Release 14.0.0.2.5 [January] [2019]



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1. Oracle FLEXCUBE Investor Servicing Solutions

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

1.1 REST API Services Full Deployment

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



Launch WebSphere console following screen will be displayed.

UserID: Enter user name password



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

View: All tasks V	Welcome			
= Welcome	Welcome	2 = 0	About this Integrated Solutions Console	
Guided Activities			Integrated Solutions Console, 9.0.0.5	
B Servers	Integrated Solutions Console provides a common administrat the product suites that can be administered through this inst information.		Build Number: cf051738.01 Build Date: 9/18/17	
Applications	mornation.		LICENSED MATERIALS PROPERTY OF IBM	
E Services			5724-J08, 5724-I63, 5724-H88, 5724-	
Resources	Suite Name	Version	H89, 5655-W65 (C) Copyright International Business Machines Corp.	
Security	WebSphere Application Server	9.0.0.5	1996, 2012	
Environment				
System administration				
Users and Groups				
Monitoring and Tuning				
Troubleshooting				
Service integration				
UDDI				

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

View: All tasks 🗸	Welcome				
= Welcome	Welcome	121			
Guided Activities					
Servers		administrative console for multiple products. The table lists gh this installation. Select a product suite to view more			
Applications	information.				
New Application					
Application Types	Suite Name	Version			
 WebSphere enterprise applications Business-level applications 	WebSphere Application Server	9.0.0.5			
Assets					
 Global deployment settings 					
± Services					
± Resources					
± Security					
Environment					
System administration					
Users and Groups					
Monitoring and Tuning					
Troubleshooting					
Service integration					
+ UDDI					



Expand Application Types >> WebSphere application type from the left panel and the following screen will be displayed.

WebSphere. software		Welcome was9005
View: All tasks	Cell=whf00cdcNode01Cell, Profile=AppSrv01	
	Enterprise Applications	
= Welcome	Enterprise Applications	
Golden Activities Servers	Use this page to manage installed applications. A single application can be deployed onto multiple se	ervers.
Applications	⊞ Preferences	
New Application	Start Stop Install Uninstall Update Rollout Update Remove File Export Ex	port DDL Export File
Application Types		
WebSphere enterprise applications		
 Business-level applications Assets 	Select Name 🗘 Application Status 👲	
= Global deployment settings	You can administer the following resources:	
+ Services	DefaultApplication	
Resources	FCISUnitholderRestServiceService	
Security	FCJNeoWeb140ITR2	
Environment	FCJNeoWeb140PII 🕹	
 System administration 	GWRestEJB 🚸	
± Users and Groups	—	
± Monitoring and Tuning		
Troubleshooting	DDT140 war 🕎	
Service integration	□ ivtApp →	
UDDI	guery 🗘	
	Total 9	

Click on Install and the following screen will be displayed. Click Browse to select required rest EAR files.

terprise /	Applications	1							
Enterpri	prise Applications								
Use this	page to manage installed applications. A single application can be deployed onto multiple servers.								
🗄 Prefe	erences								
Start	art Stop Install Uninstall Update Rollout Update Remove File Export DDL Export File								
ēC) # @								
Select	Name 🗘	Application Status 👲							
You car	n administer the following resources:								
	DefaultApplication	€							
	FCISUnitholderRestServiceService	\$							
	FCJNeoWeb140ITR2	\$							
	FCJNeoWeb140PII	⇒							
	<u>GWRestEJB</u>	↔							
	GWWebServices140ITR2								
	ODT140 war	⇒							
	ivtApp	⇒							
	guery	⇒							
Total 9									



The following screen is displayed:

ecify the EAR, WAR, JAR,	or SAR module to upload	and install.		
Path to the new applica	ation			
Local file system				
Full path				
Browse No file se	lected.			
O Remote file system				
Full path				
		Bro	owse	

Choose File

Browse and select the EAR file.

aring for the applic	ation installation				
ecify the EAR, WA	R, JAR, or SAR modu	le to upload and in:	stall.		
Path to the new	application				
Local file system	2m				
Full path Browse F	CISUnitholderRestSe	erviceService.ear			
O Remote file sy	rstem				
Full path				Browse	



Click Next and the following screen will be displayed.

ecify the EAR, WAR,	JAR, or SAR module t	o upload and install.		
ath to the new a	pplication	-		
Local file system	n			
Full path Browse FC	ISUnitholderRestServi	ceService.ear		
C Remote file sys	tem			
Full path			Browse	

Click Next and the following screen will be displayed.





Click Next and the following screen will be displayed.

Inst	all New Application	7
		ing enterprise applications and modules.
-	Step 1: Select installation options	Select installation options
	<u>Step 2</u> Map modules to servers	Specify the various options that are available for your application.
	Step 3 Map virtual	Precompile JavaServer Pages files
1	hosts for Web modules	Directory to install application
\$	<u>Step 4</u> Metadata for modules	Distribute application
	Step 5 Summary	Use Binary Configuration
	<u></u>	Deploy enterprise beans
		Application name FCISUnitholderRestServiceServ
		Override class reloading settings for Web and EJB modules
		Reload interval in seconds
		Deploy Web services
		Validate Input off/warn/fail warn v
		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
		*I JII_7000 *I7000 *I

	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 .*\.dll=755=.*\.se_755=.*\.se_755=.*\.se_755
	Application Build ID Unknown I Allow dispatching includes to remote resources Allow servicing includes from remote resources
	Business level application name Create New BLA Asynchronous Request Dispatch Type Disabled V
	Allow EJB reference targets to resolve automatically Deploy client modules Client deployment mode Isolated Validate schema
Next Cancel	



Click Next and the following screen will be displayed.

<u>c</u>	ell=wi	1f00cdcNode01Cell, Profile=A	ppSrv01	1			Close page
Specify options for installing enterprise applications and modules.							
	Step 1 Select Map modules to servers						
	→	installation options Step 2: Map modules to servers	ont	he sam	e application server or dispersed among		stall the modules that are contained in your application. Modules can be Web servers as targets that serve as routers for requests to this applicat ons that are routed through.
	*	<u>Step 3</u> Map virtual hosts for Web modules	Clusters and servers: WebSphere:cell=whf00cdcNode01Cell,node=whf00cdcNode01,server=server1				
	*	<u>Step 4</u> Metadata for modules	C				
		Step 5 Summary	s	Select	Module	URI	Server
			[FCISUnitholderRestServiceService.war	FCISUnitholderRestServiceService.war,WEB- INF/web.xml	WebSphere:cell=whf00cdcNode01Cell,node=whf00cdcNode01,server=
		Previous Next Ci	ancel				

Click Next and the following screen will be displayed.

Install N	New Application		2					
Speci	Specify options for installing enterprise applications and modules.							
	i <u>tep 1</u> Select nstallation options	Map virtual hosts for Web modules						
<u>5</u>	i <u>tep 2</u> Map modules o servers	Specify the virtual host for the Web modules that are contained in your application. You can install Web modules on the same virtual host or disperse them among several hosts.						
→ s	tep 3: Map virtual	Apply Multiple Mappings						
h	nosts for Web nodules							
	i <u>tep 4</u> Metadata for nodules	Select Web module Virtual host						
<u>5</u>	i <u>tep 5</u> Summary	FCISUnitholderRestServiceService.war default_host						
Pre	avious Next Cancel							

	Step 1 Select	Metadata	Metadata for modules 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 XM based deployment descriptor metedata to avoid scanning of annotation-based metadata each time the modul is read. If the attribute remains "false", then the annotation-based metadata is scanned each time the modul is read and can impact performance.			
	installation options <u>Step 2</u> Map modules to servers <u>Step 3</u> Map virtual	the metada based depl is read. If t				
	hosts for Web modules	G D				
	Step 4: Metadata for modules					
	<u>Step 5</u> Summary	Module		URI	metadata- complete attribute	
		FCISUn	itholderRestServiceService.war	FCISUnitholderRestServiceService.war,WEB- INF/web.xml		



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

ADMA5016I: Installation of FCISUnitholderRestServiceService started.

ADMA50671: Resource validation for application FCISUnitholderRestServiceService completed successfully.

ADMA50581: Application and module versions are validated with versions of deployment targets.

ADMA50051: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

ADMA50051: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

ADMA5081I: The bootstrap address for client module is configured in the WebSphere Application Server repository.

ADMA50531: The library references for the installed optional package are created.

ADMA50051: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

ADMA50011: The application binaries are saved in /scratch/software/WebSphere/AppServer/profiles/AppSrv01/wstemp/1123733957/workspace/cells/whf00cdcNc /FCISUnitholderRestService.ear/FCISUnitholderRestService.ear

ADMA50051: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

SECJ04001: Successfully updated the application FCISUnitholderRestServiceService with the appContextIDForSecurity information.

ADMA50051: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

ADMA5005I: The application FCISUnitholderRestServiceService is configured in the WebSphere Application Server repository.

ADMA5113I: Activation plan created successfully.

ADMA50111: The cleanup of the temp directory for application FCISUnitholderRestServiceService is complete.

ADMA5013I: Application FCISUnitholderRestServiceService installed successfully.

Application FCISUnitholderRestServiceService 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



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.

terprise Applications							
Enterprise Applications							
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							
Select	Name 🗘	Application Status 👲					
You can	administer the following resources:						
	DefaultApplication	•					
	FCISUnitholderRestServiceService	*					
	FCJNeoWeb140ITR2	\$					
	FCJNeoWeb140PII	\$					
	GWRestEJB	\$					
	GWWebServices140ITR2	\$					
	ODT140 war	\$					
	ivtApp	\$					
	query	•					
Total 9							

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

Enterprise Applications		? -				
Enterprise Applicatio						
	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						
Select Name 🗘		Application Status 👲				
You can administer	the following resources:					
DefaultApp	lication	•				
FCISUnithe	olderRestServiceService	*				
FCJNeoWe	<u>b140ITR2</u>	₽				
FCJNeoWe	b140PII	•				
GWRestEJE	<u>B</u>	\$				
GWWebSer	vices140ITR2	*				
ODT140 v	var	•				
ivtApp		∳				
		•				
Total 9						



The following screen is displayed:

	Messages					
	Application FCISUnitholderRestServiceService on server server1 and node whf00cdcNode01 started successfully. The collection may need to be refreshed to show the current status.					
nterp	rise Applications					
ise th	is page to manage installed applications. A single application can be d	e deployed onto multiple servers.				
Pre	ferences					
Sta	rt Stop Install Uninstall Update Rollout Update Re	Remove File Export Export DDL Export File				
G	ē ₩ \$					
Select	Name 🗘	Application Status 🗘				
	an administer the following resources:					
٦	DefaultApplication	•				
_	FCISUnitholderRestServiceService	•				
	FCJNeoWeb140ITR2					
		-				
	FCJNeoWeb140PII	*				
	GWRestEJB	÷				
	GWWebServices140ITR2	ب				
	ODT140 war	•				
7	ivtApp	•				

Note: Above steps are same for GWRESTEJB also.



After installation click on the service (This step is done to generate swagger.json)

🗄 Prefe	Preferences						
Start	Start Stop Install Uninstall Update Rollout Update Remove File Export Export DDL Export File						
Select	Name 🛟	Application Status 👲					
You car	n administer the following resources:						
	DefaultApplication	•					
	FCISUnitholderRestServiceService	•					
	<u>GWRestEJB</u>	∌					
	ivtApp	9					
	guery	•					
Total 5							

Click On Class loading and update detection

this page to configure an enterprise application. Click ules. figuration	k the links to access pages for further configuring of the application or
General Properties	Modules
Name FCISUnitholderRestServiceService Application reference validation Issue warnings Detail Properties Target specific application status Startup behavior Application binaries Class loading and update detection Descure dispether seconding	Manage Modules Metadata for modules Display module build Ids Web Module Properties Session management Context Root For Web Modules Environment entries for Web modules Initialize parameters for servlets JSP and JSF options Virtual hosts
 <u>Request dispatcher properties</u> <u>JASPI provider</u> <u>Custom properties</u> <u>View Deployment Descriptor</u> <u>Last participant support extension</u> 	<u>virtual nosts</u> <u>Enterprise Java Bean Properties</u> <u>Default messaging provider references</u> Client Module Properties



Select Class loaded with local class loader first (parent last) and click Apply.

	Override class reloading settings for Web and EJB modules
Po	Iling interval for updated files Seconds
Cla	ss loader order
0	Classes loaded with parent class loader first
۲	Classes loaded with local class loader first (parent last)
	R class loader policy
VV P	
•	Class loader for each WAR file in application

Click Save.

	E Messages	
	 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. 	
	Δ The server may need to be restarted for these changes to take effect.	
	oplications > <u>FCISUnitholderRestServiceService</u> > Class loader	
lee this nade		
	co configure the reloading of classes when application files are updated.	
	o configure the reloading of classes when application files are updated.	
Configuration	o configure the reloading of classes when application files are updated.	
Configuration		
Configuration General	Properties	
Configuration General Class	Properties reloading options	
Configuration General Class Pollin	Properties reloading options verride class reloading settings for Web and EJB modules g interval for updated files	

1.2 Enabling Logs for REST Application



Launch WebSphere console following screen will be displayed.

User ID: Enter user name



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

View: Alltasks T	Welcome		
Welcome	Welcone	750	About this Integrated Solutions Console
guided Activities	Integrated Solutions Console provides a common administrative console for multiple products. The table lists the product suites the	and developments of the safety where the same set	Integrated Solutions Console, 8.5.5.9
∃ Servers	integrated soucces console provides a common administrative console for multiple products. The table lists the product soules the more information.	at can de administered through this installadon, select a product suite to view	Build Number: cf091608.05 Build Date: 2/25/16
🗄 Applications			LICENSED MATERIALS PROPERTY OF
🗄 Services	Suite Name	Version	18M 5724-308, 5724-363, 5724-H88,5724-
€ Resources	WebSphere Application Server	8.5.5.9	H09, 5655-W65 (C) Copyright
g Security			
Environment			
System administration			
Users and Groups			
Rontoring and Turing			
) Trubleshooting			
Service integration			

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

View:	All tasks 🔹	
Nweige	silien frame	
🛨 Guide	ed Activities	
Servers		
E Ser	erver Types	
🛨 Applic	cations	
🛨 Servic	ces	
🛨 Resou	urces	
🛨 Securi	rity	
🛨 Enviro	onment	
🛨 Syster	em administration	
🛨 Users	s and Groups	
🛨 Monite	toring and Tuning	
🛨 Troub	bleshooting	
E Servic	ce integration	
UDDI		

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

View: All tasks T	Application servers					
Welcome © Givided Activities © Servers	Application servers Use this page to view a list of th Preferences	e application servers in your environment and the status i	of each of these servers. You can also use this page to ch	inge the status of a specific application server.		
Server Types WebSphere application servers WebSphere MQ servers	÷ 9					
 webspriere HQ servers Web servers 	Name 🛟	Node 🗘	Host Name 🗘	Version 🔆		
🗄 Applications	You can administer the followin	g resources:				
T Services	serveri	ofss222433Node01	ofss222433.in.oracle.com	ND 8.5.5.9		
	Tetal 1	Total 1				
Environment						
Monitoring and Tuning						
± Troubleshooting						
E Service integration						

Click server1 and the following screen is displayed:

General Properties	Container Settings
Name	 Session management
server1	SIP Container Settings
Node name	Web Container Settings
ofss222433Node01	Portlet Container Settings
Run in development mode	
Parallel start	EJB Container Settings
	Container Services
Start components as needed	Business Process Services
Access to internal server classes	Applications
Server-specific Application Settings	 Installed applications
Classloader policy	Server messaging
Multiple 🔻	 Messaging engines
Class loading mode	 Messaging engine inbound transports
Classes loaded with parent class loader first 🔹	 WebSphere MQ link inbound transports
	 SIB service
Apply OK Reset Cancel	Server Infrastructure
	 Java and Process Management
	Administration
	- Java SDKs
	Communications
	Ports
	😸 Messaging
	 <u>Communications Enabled Applications (CEA)</u>
	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
	 <u>Change log detail levels</u> Use this page to view and modify the properties for the diagnostic
	Additional Properties
	 Class loader viewer service
	 Endpoint listeners
	 Debugging service





Click Diagnostic trace service and the following screen is displayed:

plication servers > server1 > Diagnostic trace service	
Insurementary or partners of observations of the diagnostic trace service. Diagnostic trace provides detailed information ab when the server is restarted. Changes on the Runtime panel apply immediately. figuration Runtime	out how the application server components run within this managed process. Changes on the Configuration
General Properties	Additional Properties
Trace Output None Memory Buffer Mainum Buffer State Bainum File State Bainum Number of Historical Files File Name KJSERVER_LOG ROOT)trace log Trace Output Format	<u>Chance los detail leveis</u> <u>Change log detail leveis</u>

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

cation servers > server1 > Diagnostic trace service >	
ig levels to control which events are processed by Java log i name to select a log detail level. Log detail levels are cum	iging. Click Components to specify a log detail level for individual components, or click Groups to specify a log detail level for a predefined group of components. Click a compone ulative; a level near the top of the list includes all the subsequent levels.
iguration Runtime	
eneral Properties	
Change log detail levels	
Disable logging and tracing of potentially sensitive	e data (WARNING: This might cause the log detail level setting to be modified when it is applied on the server.)
Select components and specify a log detail level. Log detail level and specify a log detail level.	etal levels specified here vil apply to the entire server. Expand Components and Groups and click Components to specify a log detail level for individual components, or d group of components. Click a component or group name to select a log detail level. Log detail levels are cumulative.
=info: com.ofss.=all	
⊕ Components and Groups	
Correlation	
	viced by more than one thread, process, or server wil be identified as belonging to the same unit of work.
Enable log and trace correlation	
Include request IDs in log and trace record	
Include request IDs in log and trace record	
Include request IDs in log and trace record	s, create correlation log records, and capture data snapshots

Change log detail levels

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

Restart the server post the change

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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