

REST API Services Deployment in WebSphere
Oracle FLEXCUBE Investor Servicing
Release 14.1.0.0.0
[May] [2019]



Table of Contents

1.	ORACLE FLEXCUBE INVESTOR SERVICING SOLUTIONS	1
1.1	REST API SERVICES FULL DEPLOYMENT	1
1.2	ENABLING LOGS FOR REST APPLICATION.....	13

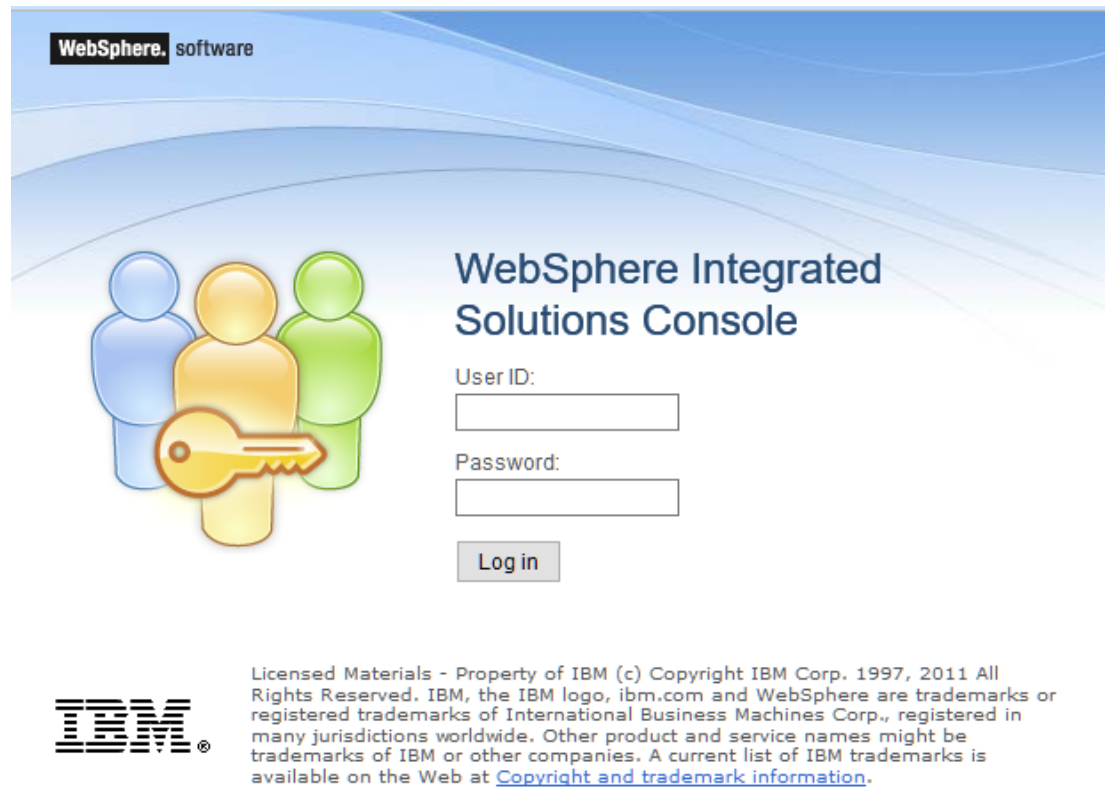
1. Oracle FLEXCUBE Investor Servicing Solutions

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.



The image shows the WebSphere Integrated Solutions Console login page. At the top left is the 'WebSphere. software' logo. In the center-left is a graphic of three stylized human figures (blue, orange, and green) with a large yellow key in front of them. To the right of this graphic, the title 'WebSphere Integrated Solutions Console' is displayed in a large, dark blue font. Below the title are two input fields: 'User ID:' and 'Password:'. A 'Log in' button is positioned below the password field. At the bottom left is the IBM logo. To the right of the IBM logo is a block of small text containing copyright and trademark information.

WebSphere. software

WebSphere Integrated Solutions Console

User ID:

Password:

Log in

IBM®

Licensed Materials - Property of IBM (c) Copyright IBM Corp. 1997, 2011 All Rights Reserved. IBM, the IBM logo, ibm.com and WebSphere are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at [Copyright and trademark information](#).

UserID: Enter user name password

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

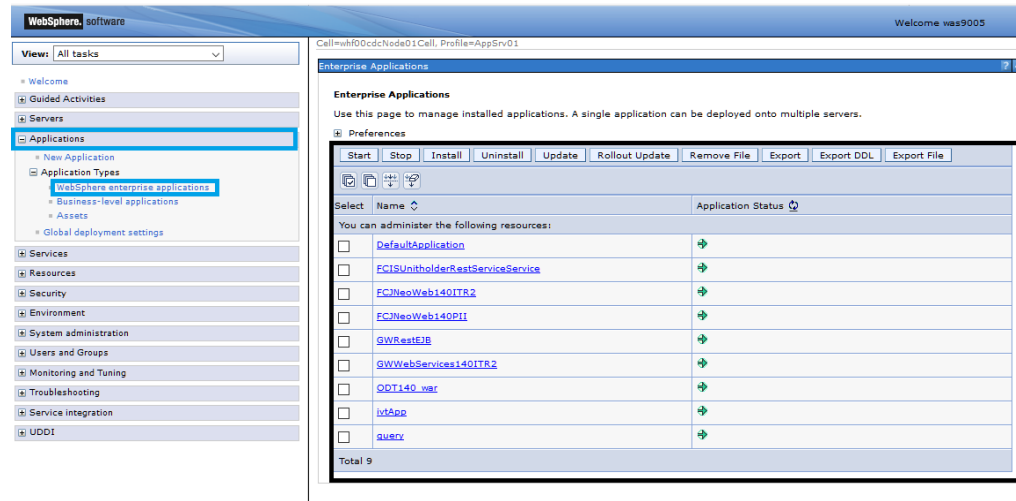
The screenshot shows the IBM WebSphere Integrated Solutions Console home page. The top navigation bar includes the WebSphere logo, the text 'Welcome was9005', and links for 'Help' and 'Logout'. The left sidebar contains a 'View:' dropdown set to 'All tasks' and a list of expandable menu items: Welcome, Guided Activities, Servers, Applications, Services, Resources, Security, Environment, System administration, Users and Groups, Monitoring and Tuning, Troubleshooting, Service integration, and UDDI. The main content area is titled 'Welcome' and contains a paragraph explaining the console's purpose. Below the text is a table with two columns: 'Suite Name' and 'Version'. The table lists 'WebSphere Application Server' with version '9.0.0.5'. On the right, there is a panel titled 'About this Integrated Solutions Console' showing version information (9.0.0.5, Build Date: 9/18/17) and IBM licensing details.

Suite Name	Version
WebSphere Application Server	9.0.0.5

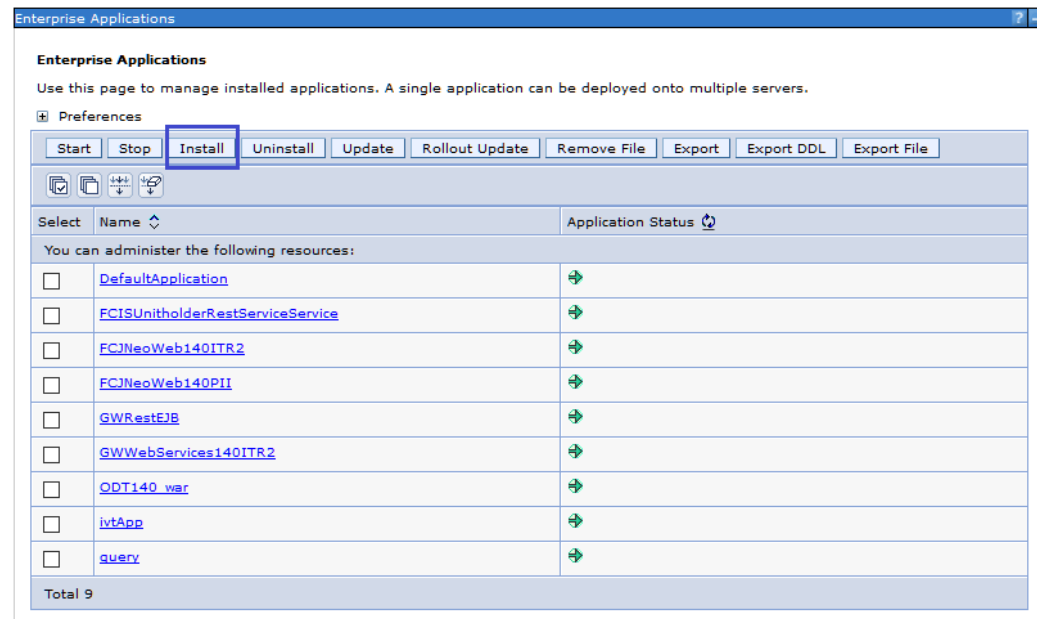
Expand Applications from the left panel and the following screen will be displayed.

This screenshot shows the same console interface as the previous one, but with the 'Applications' menu item expanded. The expanded menu shows 'New Application' and 'Application Types'. Under 'Application Types', there are three sub-items: 'WebSphere enterprise applications' (which is highlighted with a blue box), 'Business-level applications', and 'Assets'. The 'Global deployment settings' link is also visible at the bottom of the expanded menu. The rest of the interface, including the top bar, other sidebar items, and the main content area, remains the same.

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



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



The following screen is displayed:

Enterprise Applications

Preparing for the application installation

Specify the EAR, WAR, JAR, or SAR module to upload and install.

Path to the new application

☒ Local file system

Full path

No file selected.

☐ Remote file system

Full path

Choose File

Browse and select the EAR file.

Enterprise Applications

Preparing for the application installation

Specify the EAR, WAR, JAR, or SAR module to upload and install.

Path to the new application

☒ Local file system

Full path

FCISUnitholderRestServiceService.ear

☐ Remote file system

Full path

Click Next and the following screen will be displayed.

Enterprise Applications

Preparing for the application installation

Specify the EAR, WAR, JAR, or SAR module to upload and install.

Path to the new application

☒ Local file system

Full path

FCISUnitholderRestServiceService.ear

☐ Remote file system

Full path

Click Next and the following screen will be displayed.

Enterprise Applications

Preparing for the application installation

[Close page](#)

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

Click Next and the following screen will be displayed.

Install New Application

Specify options for installing enterprise applications and modules.

Step 1: Select installation options

Step 2: Map modules to servers
Step 3: Map virtual hosts for Web modules
Step 4: Metadata for modules
Step 5: Summary

Select installation options

Specify the various options that are available for your application.

☐ Precompile JavaServer Pages files

Directory to install application

☒ Distribute application

☐ Use Binary Configuration

☐ Deploy enterprise beans

Application name
FCISUnitholderRestServiceServ

☒ 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
warn

☐ 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

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;.*\so=755;.*\a=755;.*\sl=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

Next Cancel

Click Next and the following screen will be displayed.

Cell: whf00cdcNode01Cell, Profile: AppSrv01

Close page

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options
 Step 2 Map modules to servers
 Step 3 Map virtual hosts for Web modules
 Step 4 Metadata for modules
 Step 5 Summary

Map modules to servers

Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.

Clusters and servers:
 WebSphere:cell=whf00cdcNode01Cell,node=whf00cdcNode01,server=server1 Apply

Select	Module	URI	Server
<input type="checkbox"/>	FCISUnitholderRestServiceService.war	FCISUnitholderRestServiceService.war;WEB-INF/web.xml	WebSphere:cell=whf00cdcNode01Cell,node=whf00cdcNode01,server=server1

Previous Next Cancel

Click Next and the following screen will be displayed.

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options
 Step 2 Map modules to servers
 Step 3 Map virtual hosts for Web modules
 Step 4 Metadata for modules
 Step 5 Summary

Map virtual hosts for Web modules

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.

Apply Multiple Mappings

Select	Web module	Virtual host
<input type="checkbox"/>	FCISUnitholderRestServiceService.war	default_host

Previous Next Cancel

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options
 Step 2 Map modules to servers
 Step 3 Map virtual hosts for Web modules
 Step 4 Metadata for modules
 Step 5 Summary

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 XML-based deployment descriptor metadata 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.

Module	URI	metadata-complete attribute
FCISUnitholderRestServiceService.war	FCISUnitholderRestServiceService.war;WEB-INF/web.xml	<input type="checkbox"/>

Previous Next Cancel

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

ADMA5016I: Installation of FCISUnitholderRestServiceService started.

ADMA5067I: Resource validation for application FCISUnitholderRestServiceService completed successfully.

ADMA5058I: Application and module versions are validated with versions of deployment targets.

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

ADMA5005I: 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.

ADMA5053I: The library references for the installed optional package are created.

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

ADMA5001I: The application binaries are saved in /scratch/software/WebSphere/AppServer/profiles/AppSrv01/wstemp/1123733957/workspace/cells/whf00cdNo/FCISUnitholderRestServiceService.ear/FCISUnitholderRestServiceService.ear

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

SECJ0400I: Successfully updated the application FCISUnitholderRestServiceService with the appContextIDForSecurity information.

ADMA5005I: 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.

ADMA5011I: 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.

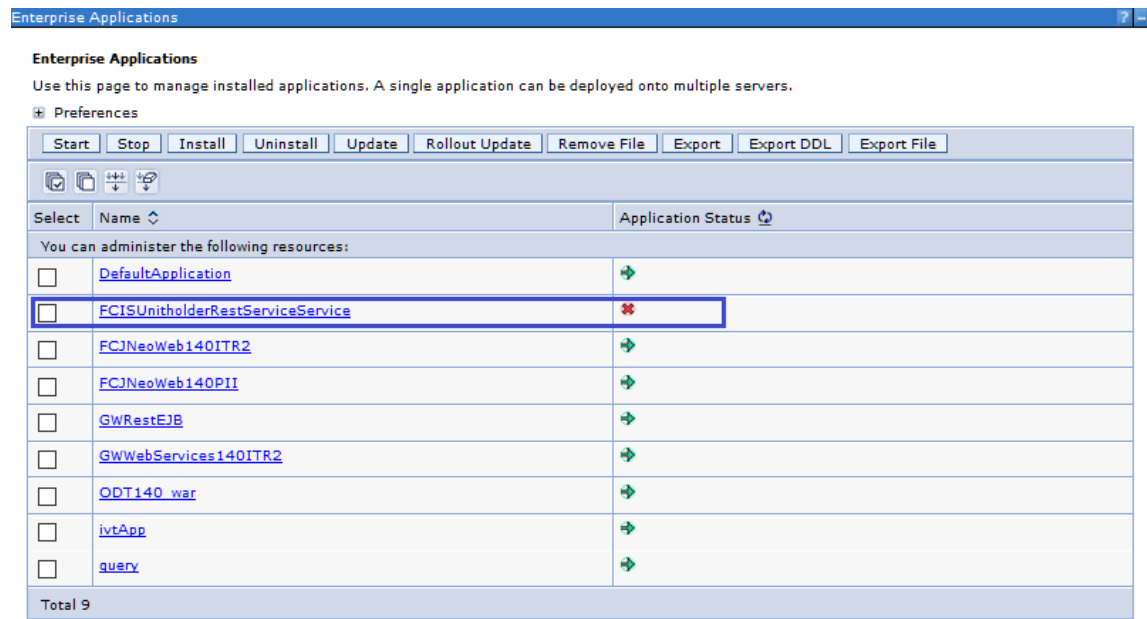
Changes have been made to your local configuration. You can:

- [Save](#) directly to the master configuration.
- [Review](#) changes before saving or discarding.

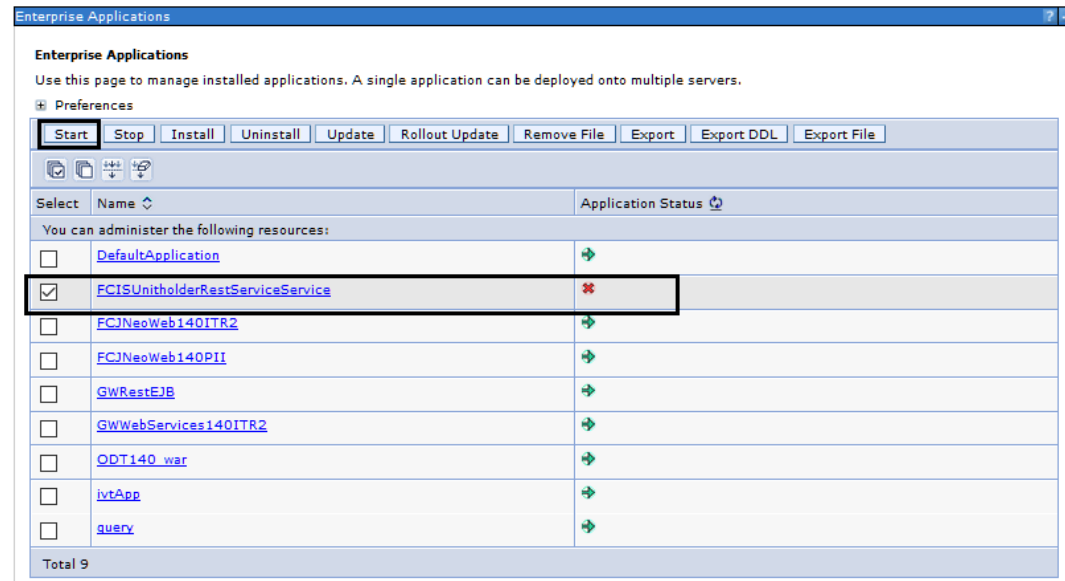
To work with installed applications, click the "Manage Applications" link.

[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.



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



The following screen is displayed:

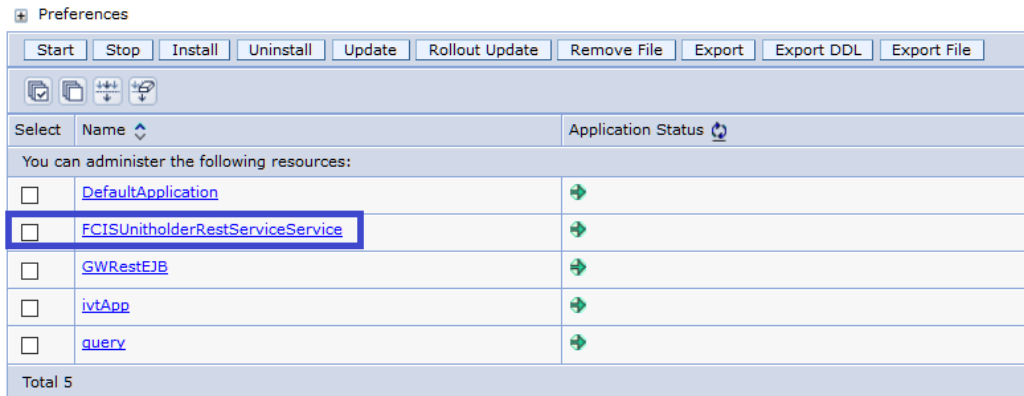
The screenshot displays the 'Enterprise Applications' management interface. At the top, a 'Messages' box indicates that the application 'FCISUnitholderRestServiceService' was successfully started on 'server1' and node 'whf00cdcNode01'. Below this, the 'Enterprise Applications' section provides instructions and a 'Preferences' link. A toolbar contains buttons for 'Start', 'Stop', 'Install', 'Uninstall', 'Update', 'Rollout Update', 'Remove File', 'Export', 'Export DDL', and 'Export File'. The main area features a table with columns 'Select', 'Name', and 'Application Status'. The table lists nine applications, with 'FCISUnitholderRestServiceService' highlighted. A 'Total 9' summary is shown at the bottom of the table.

Select	Name	Application Status
<input type="checkbox"/>	DefaultApplication	➔
<input type="checkbox"/>	FCISUnitholderRestServiceService	➔
<input type="checkbox"/>	FCJNeoWeb140ITR2	➔
<input type="checkbox"/>	FCJNeoWeb140PII	➔
<input type="checkbox"/>	GWRestEJB	➔
<input type="checkbox"/>	GWWebServices140ITR2	➔
<input type="checkbox"/>	ODT140_war	➔
<input type="checkbox"/>	ivtApp	➔
<input type="checkbox"/>	query	➔

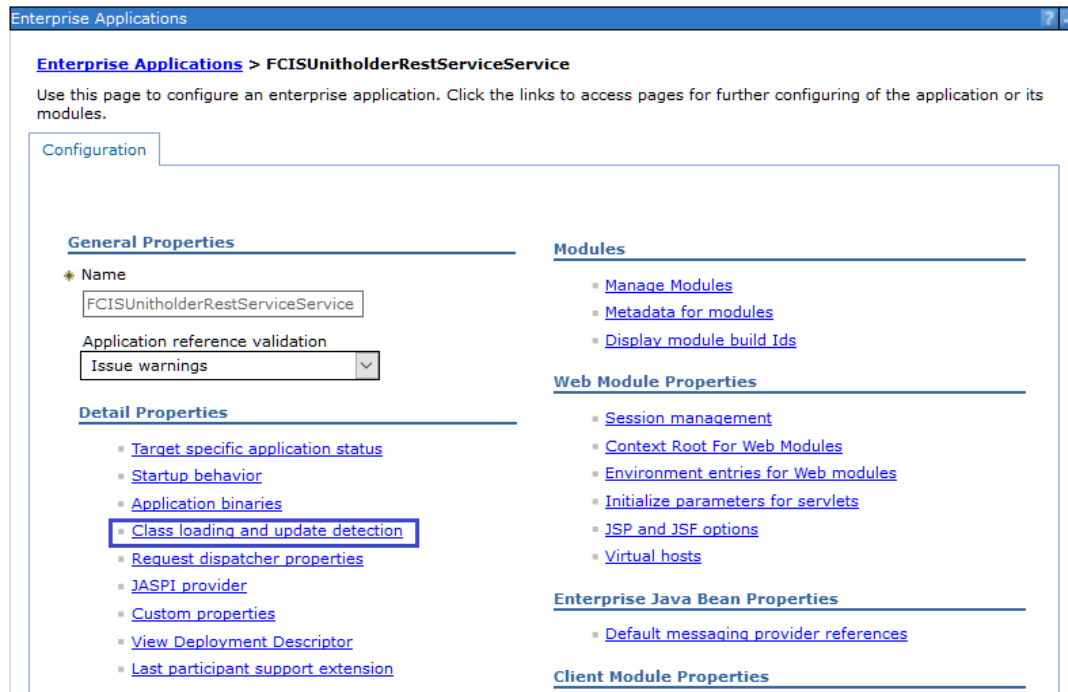
Total 9

Note: Above steps are same for GWRESTEJB also.

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



Click On Class loading and update detection



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

General Properties

Class reloading options

☐ Override class reloading settings for Web and EJB modules

Polling interval for updated files
 Seconds

Class loader order

☐ Classes loaded with parent class loader first

☒ Classes loaded with local class loader first (parent last)

WAR class loader policy

☒ Class loader for each WAR file in application

☐ Single class loader for application

Apply OK Reset Cancel

Click Save.

Enterprise Applications

Messages

⚠ Changes have been made to your local configuration. You can:

- [Save](#) directly to the master configuration.
- [Review](#) changes before saving or discarding.

⚠ The server may need to be restarted for these changes to take effect.

[Enterprise Applications](#) > [FCISUnitholderRestServiceService](#) > **Class loader**

Use this page to configure the reloading of classes when application files are updated.

Configuration

General Properties

Class reloading options

☐ Override class reloading settings for Web and EJB modules

Polling interval for updated files
 Seconds

Class loader order

☐ Classes loaded with parent class loader first

☒ Classes loaded with local class loader first (parent last)

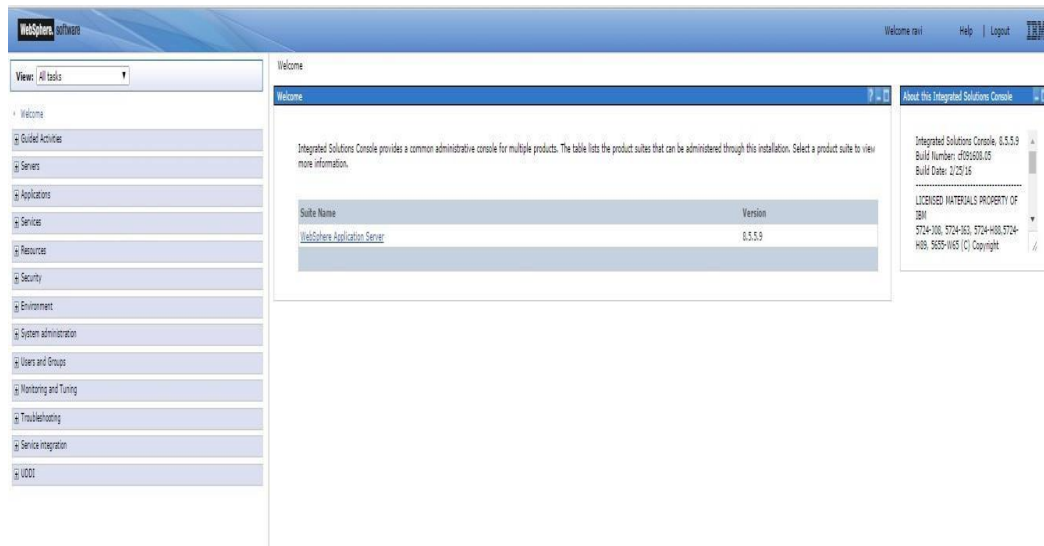
1.2 Enabling Logs for REST Application

Launch WebSphere console following screen will be displayed.

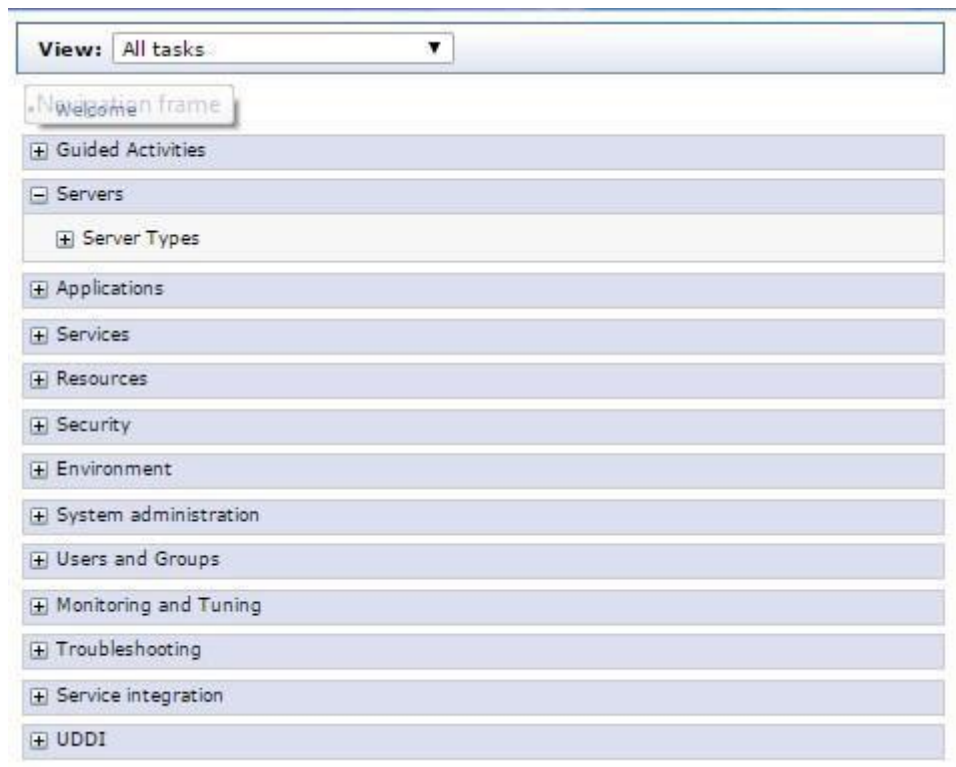


User ID: Enter user name

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



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



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

Cell=orcs222433Node01Cell, Profile=AppSrv01

Application servers

Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.

Preferences

Name	Node	Host Name	Version
You can administer the following resources:			
server1	orcs222433Node01	orcs222433.in.oracle.com	ND 8.5.5.9
Total 1			

Click server1 and the following screen is displayed:

General Properties

Name: server1

Node name: orcs222433Node01

☒ Run in development mode

☒ Parallel start

☒ Start components as needed

Access to internal server classes: Allow

Server-specific Application Settings

ClassLoader policy: Multiple

Class loading mode: Classes loaded with parent class loader first

Apply OK Reset Cancel

Container Settings

- ☒ Session management
- ☒ SIP Container Settings
- ☒ Web Container Settings
- ☒ Portlet Container Settings
- ☒ EJB Container Settings
- ☒ Container Services
- ☒ Business Process Services

Applications

- ☒ Installed applications

Server messaging

- ☒ Messaging engines
- ☒ Messaging engine inbound transports
- ☒ WebSphere MQ link inbound transports
- ☒ SIB service

Server Infrastructure

- ☒ 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 diagnostic)

Additional Properties

- ☒ Class loader viewer service
- ☒ Endpoint listeners
- ☒ Debugging service
- ☒ Thread pools
- ☒ Reliable messaging state
- ☒ Web server plug-in properties

Click Diagnostic trace service and the following screen is displayed:

Application servers > server1 > Diagnostic trace service

Use this page to view and modify the properties of the diagnostic trace service. Diagnostic trace provides detailed information about how the application server components run within this managed process. Changes on the Configuration panel apply when the server is restarted. Changes on the Runtime panel apply immediately.

Configuration Runtime

General Properties

Trace Output

- ☐ None
- ☐ Memory Buffer
 - Maximum Buffer Size: 8 thousand entries
- ☒ File
 - Maximum File Size: 20 MB
 - Maximum Number of Historical Files: 5
 - File Name: %SERVER_LOG_ROOT%trace.log

Trace Output Format: Basic (Compatible)

Apply OK Reset Cancel

Additional Properties

[Change log detail levels](#)

Change log detail levels

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

Application servers > server1 > Diagnostic trace service > Change log detail levels

Use log levels to control which events are processed by Java logging. 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 component or group name to select a log detail level. Log detail levels are cumulative; a level near the top of the list includes all the subsequent levels.

Configuration Runtime

General Properties

Change log detail levels

☐ Disable 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.)

Select components 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 click Groups to specify a log detail level for a predefined 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

Enable log 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.

☒ Enable 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 OK Reset Cancel

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.



REST API SERVICES Deployment in WebSphere
[May] [2019]
Version 14.1.0.0.0

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 © [2007], [2019], 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.