Deploying SOA Composites and Oracle Service Bus Applications from Oracle JDeveloper to Oracle SOA Cloud Service

## **Deploying SOA Composites and Oracle Service Bus Applications from Oracle JDeveloper to Oracle SOA Cloud Service**

This white paper documents the steps to deploy SOA/Oracle Service Bus composites/applications from JDeveloper (that runs outside the Oracle network) to the provisioned SOA Cloud Service instance.

This deployment scenario has been successfully tested against both a single-node cluster environment and a two-node cluster environment.

**Note**: These instructions work from outside the Oracle network, but not from within an Oracle network.

## Deploy to SOA Cloud Service from JDeveloper- Post-Provisioning Steps

After provisioning the SOA Cloud Service instance, there are several post-provisioning steps that are required for deployment to be successful.

The post-provisioning steps are as follows:

- 1) Find the public IP address of the administration server. For this, go to the instance details page by clicking the SOA Cloud Service instance that was provisioned earlier.
- 2) From the hamburger menu in the upper right corner, click **Open WebLogic Server Console**.

CRACLE <sup>®</sup> CLOUD My Service	ces					
<	🔓 RSC	ACS2				E Console
Platf	form Services / RSO	ACS2			As of Feb 21, 2018, 11:36:11 A	Open Fusion Middleware Control Console Open Worklist Application
Ov	verview			000	Open Load Balancer Console	
3 Node:	Nodes	3 Nodes	3 OCPUs	J1.J <sub>GB</sub> Memory	ZU3 <sub>GB</sub> Storage	Open SOA Composer
		Status: Re	ady	Vers	sion: 12.2.1.2.0	Open WebLogic Server Console

3) After logging into the Oracle WebLogic Server Console, on the Summary of Servers page, check the host name associated with the administration server. For this example, the administration server is running on host **rsoacs2-wls-1** (marked in red).

				0							
iumm	ary of Servers										
Confi	guration Control										
A se	ver is an instance of WebLogic Ser	ver that runs i	n its own Java Vi	rtual Machine (JVM) and has	its own con	figuration.					
This	page summarizes each server that	has been conf	igured in the curr	ent WebLogic Server domai	n.						
(2											
Cu	stomize this table										
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Und the Lock & LoirDutton in the Change Lenter to activate all the buttons on this page.											
New Clone Delete											
	Hama (A	Tune	Churton	Machina	Chalm	Hanlth	Listen Best	Listen Address	CCI Feedblad	CEL Listen Dest	CCI Listen Best Cashind
E	ndine vv	Type	cluster	machine	State	neatth	Listen Port	LISTCH MULICSS	SSCENADIEG	SSC Listen Port	SSU LISTER FOLT EUROPE
	RSOACS2 adminserver(admin)	Configured		RSOACS2 machine 1	RUNNING	V OK	9071	rspacs2-wis-1	true	9072	true

4) From the SOA Cloud Service instance details page, you get the public IP address associated with host **rsoacs2-wls-1**. This is the public IP address of the administration server.

Weblogic				
	State:	Ready		
Resources				
	Host Name:	rsoacs2-wls-1	OCPUs:	1
	Public IP:	192.0.2.254	Memory:	15 GB
	Instance:	Runs RSOACS2server_1	Storage:	77 GB

5) Configure the managed server's reachability.

Verify each of the managed server's listener addresses from Oracle WebLogic Service Console.

Note: If the listener address is a host name or a private IP address, JDeveloper cannot access the managed servers during deployment. In this case you must perform the following step.

Map the host name to the same administration server public IP address in the hosts file as shown below. For Windows, the hosts file is typically located at C:\Windows\System32\Drivers\etc\hosts.

Note: Perform this task on the host on which JDeveloper is running.

192.0.2.254 rsoacs2-wls-1 192.0.2.254 rsoacs2-wls-2

An alternative is to modify the managed server's listener address. However, this is not recommended because of unintended consequences such as disaster recovery breakage.

6) Add the access rule in the SOA Cloud Service Console to permit traffic from JDeveloper (that exits outside of the Oracle network) to the SSL listener port of the managed server.

a. Click the **Manage this service** menu and choose the **Access Rules** option to launch the Access Rules page.

**NOTE**: Opening the managed server port is not as secure as the default, where the port is not exposed. If you do not want to open this port, this solution does not work for you.

5	RSOACS2				Open Load Balancer Console	- 1
25	Service Type: Version:	SOA Cloud Service 12.2.1.2.0	Nodes: Created On:	3 Feb 21, 2018 6:08:49 AM UTC	Open SOA Composer	
					Open WebLogic Server Console	
5	RDBCS2				Start	- 3
	Service Type: Version:	Oracle Database Cloud 12.2.0.1.171017	Created On:	Feb 21, 2018 5:29:18 AM UTC	Stop	
	Edition:	Enterprise Edition			Access Rules	

b. Enter the details as shown in the screen shot. Add the SSL listener port of the managed server in the **Destination Port(s)** field.

Create Access	Rule						
* Rule Name:	permitJdevTraffic	0	* Source:	PUBLIC-INTERNET		•	0
Description:		0	* Destination:	WLS_MS		•	Enter t
			* Destination Port(s):	9074			0
			* Protocol:	TCP		•	0
\rm This operati	on may take some time.						
					Create	Ca	ancel

Create an Application Server Connection in JDeveloper

1) Create a new application server connection in JDeveloper.

👩 Create Application Serv	ver Connection - Step 1 of 5
Name and Type	
Name and Type     Authentication	Specify a unique name and type for the connection. The name must be a valid Java identifier.
Configuration	Create connection in: IDE Connections
u <u>Test</u>	Connection Name:
Finish	soacs2
	Connection <u>Type</u> : WebLogic 12.x
Help	< Back Next > Finish Cancel

- 2) In the Configuration page, provide the administration server public IP address that was obtained earlier in the **WebLogic Hostname** field.
- 3) Select Always use SSL and provide port 7002 as the SSL port.

Oreate Application Serv	er Connection - Step 3 of 5		×
Configuration		010101010101010101010	5
Authentication	WebLogic Server connections Domain of the target will be ve WebLogic Hostname (Administr	s use a host name and port to establish a connection. T erified ration Server):	'ne
🖕 <u>Test</u>	Port:	SSI Port:	
- Finish	7001	7002	
	Always use SSL     WebLogic Domain:     RSOACS2_domain		
Help	< <u>B</u> ad	k <u>N</u> ext > <u>F</u> inish Car	ncel

4) Test the connection after accepting the certificates. The dialog to accept the certificate is only displayed the first time you connect to this server. The test connection should now pass without any errors.

🔿 Create Application Serve	r Connection - Step 4 of 5
Test	
Name and Type     Authentication     Configuration     Test	Click Test Connection to determine if the information specified successfully establishes a connection with the application server. <u>Test Connection</u> <u>Status:</u>
U Finish	Testing HTTP Authentication success Testing JSR-160 Runtime success Testing JSR-160 DomainRuntime success Testing JSR-160 Edit success Testing JSR-60 Edit success Testing JSR-88 success Testing JSR-88 success Testing Server MBeans Model success Testing JSR-88-LOCAL success Testing JSR-88-DEP-MGR success Testing JSR-88-DEP-MGR success Testing JSR-88-DEP-MGR success Testing JSR-88-DEP-MGR success 12 of 12 tests successful.
Help	< Back Next > Finish Cancel

Deployment of SOA Composites to SOA Cloud Service from JDeveloper.

1) In JDeveloper, right-click the SOA project you want to deploy and select the **Deploy** menu. This invokes the deployment wizard.



2) In the deployment wizard, select the application server connection that was created earlier.

If the server has been configured correctly, the next step looks up the SOA servers and shows the various managed servers to which to deploy the composite.

🕐 Deploy Project1				8
SOA Servers				
Deployment Action	Choose the target SOA this archive.	server(s) and corres	ponding partitions to w	hich you want to deploy
Deploy Configuration	SOA Server:	Partition:	Status:	Server URL:
Select Server				
SOA Servers	SOA Server Lookup		×	
Summary	Looking up SOA server	s		
			Cancel	
Help		< Back N	lext > Einis	sh Cancel
				h.

Oeploy Project1				×
SOA Servers				
Deployment Action	Choose the target SOA server(s) and	corresponding partitions to	which you want to de	ploy this archive.
	SOA Server: P	artition:	Status:	Server URL:
Select Server	RSOACS2_cluster	lefault 🔹		
	RSOACS2_server_d	efault	RUNNING	https://rsoacs2-wls
SUA Servers	RSOACS2_server_d	efault	RUNNING	https://rsoacs2-wls
Summary				
Help		< <u>B</u> ack <u>N</u>	lext > <u>F</u> ini	sh Cancel

3) Complete the deployment as shown below. The JDeveloper console logs indicate that the composite was deployed successfully.

_ Projects							
😑 🛅 SOA							
🖨 🔚 BPEL							
BPELProcess1.bpel							
Events							
😑 🔚 Schemas							
BPELProcess 1.xsd	BPELProcess1						
testsuites	bpelprocess1_client						
fileList.xml	Operations:						
Transformations	process						
🖨 – 🫅 WSDLs	processResponse						
BPELProcess 1.wsd							
Project1							
.± Application Resources	Design Source History Annotations						
🗄 Data Controls 🛛 🦓 🏆 🐨 🕶	Deployment - Log						
± Recent Files							
Â	Actions*						
Project1.jpr - Structure ×	[01:40:38 FM] Deployment started						
	[01:40:38 PM] Target platform is (Weblogic 12.x).						
	[01:40:38 PM] Running dependency analysis						
	[01:40:38 PM] Building						
	[01:41:50 PM] Deploying profile						
	[01:41:51 PM] Updating revision id for the SOA Project 'Project.jpr' to '1.0'						
	[01:41:51 PM] wrote Archive Hodule to <u>C:/onome:devnome:de</u>						
	<pre>(0:4:5) while publying scarpe() constitution details on server x0xx52_serve_1</pre>						
	[U:41:51 PM] Processing sim/c:/onome/jaevnome/myWork/ApplicationSUALS/Projecti/deploy/se_Projecti.jar						
	(01:41:51 PM) Preparing to send HTTP request for deployment						
	[01:41:51 FM] Creating HTTPS connection to host:rsoacs2-wls-1. port:9074						
No Structure	[01:41:51 PM] Sending internal deployment descriptor						
	[01:41:51 PM] Sending archive - sca Project1.jar						
	[01:41:58 PM] Received HTTP response from the server, response code=200						
	[01:41:58 PM] Successfully deployed archive sca_Project1.jar with 0 warning/severe messages to partition "default" on server RSOACS2_server						
	[01:41:58 PM] Elapsed time for deployment: 1 minute, 20 seconds						
	[01:41:58 PM] Deployment finished						
1							

<u>Deployment of Oracle Service Bus Applications to SOA Cloud Service from JD</u>eveloper Follow the same steps for deployment of Oracle Service Bus applications.

If the SOA Cloud Service instance has been correctly configured as previously described, the deployment is also successful for Oracle Service Bus applications.

Because Oracle Service Bus applications are deployed to the administration server (unlike SOA, where composites are deployed to the managed servers), you do not see the SOA server lookup step while deploying the Oracle Service Bus project.

The following image shows the steps involved in deploying an Oracle Service Bus application.

	Oracle JDevel	ope	r 12c - ServiceBusApplicati	on2.iws : SBProject.ipr					and the second se
Fil	e Edit Vie	w	Application Refactor S	earch Navigate Bui	ld Run Team	Tools Window	Help		
	a 💿 –	>				- <u>-</u>			
		_		(sot					
5	Applic ×	Ар	plicat… Databas… 🗖	② Start Page 🔺 머물	Project 1 🔺 📇 unt	itled 1.xsd 🔺 👫	BPELProcess 1.bpe	el 🔺 📲 SBProject 🔌	🟂 PipelinePr
ture	🔁 Service	lusA	pplication2	🔂 🖌 💥					
2g	- Projects		S 38 + 7 + 15 +						
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et.j	E Re		INew	•					
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Ges			Service <u>B</u> us	•	Drawe	ŕ		Pipeline	
erer		æ	Find Project Files		neproxyService	)			
Ref			Show Classpath						
ja,			Show Overview						
ject		<b>A</b>	Find in Files	Ctrl+Shift-F					
BPic		<b>A</b>	Replace in Files						
->-€			Deploy	۲.	1 SBProject to	soacs_cluster	1		
		_	Find <u>U</u> sages	Ctrl+Alt-U	<u>S</u> BProject				
			Run		New Deployme	ant Profile	ons Docu	mentation	
		200	Debus						

Deploy SBProject				
Deployment Action				
Deployment Action	Select a deployment action from the list below. Deploy to Service Bus Server			
U Summary				
	Deploy a Service bus project to a weblogic server which includes a Service bus runtime.			
Help	< Back Next > Finish Cancel			

Deploy SBProject			23	J
Select Server				
Deployment Action	Application Servers:	4	<b>1</b> 2 🕅	
Select Server	IntegratedWebLogicServer (domain unconfigured) onprem rsoacs3 soacs1 soacs_duster Overwrite modules of the same name			
Help	Section Server       < Back	Car	ncel	

SBProject      Resources     Pipeline.pipeline     pom.xml     SBProject      SBProject	Pipeline ProxyService
	Design
	Deployment - Log × Live Issues: SBProject - Issues Simulations Documentation
	Q
	[12:00:59 PM] Deployment started
	[12:00:59 FM] Target platform is Standard Java EE.
	[12:01:18 PM] Deployed: SBProject/Pipeline (type: Pipeline)
	[12:01:18 PM] Deployed: SBProject/PipelineProxyService (type: ProxyService)
	[12:01:18 PM] Deployed: SBProject/Resources/RestService (type: WADL)
	[12:01:18 PM] Elapsed time for deployment: 19 seconds
	[12:01:18 PM] Deployment finished
1	

## Other Important Points

- 1. Deployment to SOA Cloud Service always occurs on the SSL port, and not on the non-SSL port.
- 2. As you can see in the Create Application Server Connection step, JDeveloper uses SSL port 7002 to connect and deploy to the administration server in the SOA Cloud Service environment. However, the mapping of port 7002 to 9072 (SSL port on the administration server) happens internally.
- 3. If deployment failures occur even after following the above steps, retry deployment after clearing the JDeveloper cache. Remember that clearing the JDeveloper cache removes all previously-created connections.
- 4. The deployment has been tested with the following versions: SOA Cloud Service – provisioned with SOA version 12.2.1.2.0 JDeveloper – version 12.2.1.2.0