Learning Series - How to record JDBC Transactions of Enterprise Dashboard and Virtualize the same using DevTest Broker

Service Virtualization Engineering

Exported on Oct 10, 2022

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DevTest Broker provides an Java Agent using which you record JDBC transactions done from Enterprise Dashboard and convert it into a virtual service.

TESTED WITH: 10.4

Pre-Requisites:

DevTest Broker should be up and running. Check pfbroker.log and make sure there are no problems in staring this service.

Setting Up Java Instrumentation Agent for ED & IAM

Add the line below to LISA_HOME/bin/EnterpriseDashboard.vmoptions or LISA_HOME\bin\EnterpriseDashboardService.vmoptions

javaagent:C:\Progra~1\CA\DevTest\agent\InsightAgent.jar=url=<u>tcp://localhost:2009,name=DRA</u> <u>DIS</u>

Here; url refers to the URL of DevTest Broker. Name can be any descriptive identifier. You would find its usage later in the article

It is very important to follow the same syntax as shown above. Using folder names with space or using double quotes may lead to startup failure of ED

Start ED from command prompt from LISA_HOME\bin, run the command *EnterpriseDashboard.exe or* start it from Windows Services

For IAM, add the following entry to file C:\Program Files\CA\DevTest\IdentityAccessManager\bin\standalone.bat

set "JAVA_OPTS=-<u>Dprogram.name</u>=%PROGNAME% -javaagent:"C:\Program Files\CA\DevTest\agent\InsightAgent.jar"=urI=<u>tcp://localhost:2009,name=IAMCL</u> %JAVA_OPTS%"

In case of IAM, you can start IAM from windows services

NOTE: Trying to use javagent with Registry fails to start registry.

Checking If ED is Connected to Broker

As soon as ED starts, it connects to the broker. There are 5 different ways this can be confirmed.

Method 1 - Checking pfbroker log file

[DevTest AGENT:BC][INFO][7468][183][ActiveMQ Session Task][Jan 23, 2020 7:56:55 PM] Agent online: [ID: 69429598][NAME: **IAMCL**][IP: 169.254.92.143][MC: org.jboss.modules.Main][PID: 9132]

[DevTest AGENT:BC][INFO][7468][183][ActiveMQ Session Task][Jan 23, 2020 7:57:24 PM] Agent online: [ID: 2024515099][NAME: **DRADIS**][IP: 169.254.92.143][MC: com.install4j.runtime.launcher.WinLauncher][PID: 18332]

In this case, I have set javaagent property to both ED and IAM.

Whenever the process that was set with javaagent stops, you would see an entry similar to the one shown below in pfbroker.log file

Agent offline: [ID: 69429598][NAME: **IAMCL**][IP: 169.254.92.143][MC: org.jboss.modules.Main][PID: 9132]

Method 2 - From ATK (Agent Tool Kit Tool)

This is a simple UI tool to show agents (yes, any process that has the javaagent configured is called as agent)

Launch atk.exe from LISA_HOME\bin folder and you should be able to see the ONLINE agents

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Broker URL				۹. ا				00		
tcp://localhost:2009		rview Classes	Threads	VS Play Scrip	ting Terminal	Explorer	Log Exte	overview		
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🧸 Saved Paths		Agent Name:		DRA	DIS (ID: 202451509	9) (PID: -1)				
📳 Database		Agent Version:			0.355					
Tickets		Agent Directory	r.	C:\Pr	ogram Files\CA\De	vTest\lib\core	•			
		OS:		Wind	ows 10 10.0 (amd	64)				
📄 Manage Agents	*	Machine:		NATS	A03-7520.ca.com	(169.254.92.1	43)			
		VM Name:		7468	@NATSA03-7520 (Java HotSpot	(TM) 64-Bit Ser	ver VM)		
📕 🔍 🌑 🍓 DRADIS		VM Version:		1.8.0	_221 (25.221-b11)					
🖉 🔍 🖲 🛞 DRADISSERVICE (129	68)	Working Direct	ory:		ogram Files\CA\De					
- 📕 🍳 🔘 🀑 IAMCL (4340)		Cmd Line:				vTest\bin\Bro	kerService.ex	e -XX:HeapDumpPath="C	2:\Pr	
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				8:13:30	8:14:00		8:13:30	8:14:00		
		Details								

Method 3 - From Portal (Yes)

Just login to Portal and go to Settings -> Agents as shown below. It shows active as well as inactive agents.

E Construction DevTest Po	ortal			
💼 Home		Agents ×		
🗇 Create	>		8 7	Broker:NATSA03-7520\$@NATSA03-7520.ca.com
BB Manage	>	Broker:NATSA03-7520\$@NATS		JVM Performance
Nonitor	>	Version: 10.4.0.355	SAUS-7520.Cd	CPU Usage (%)
Application Insight	>	DEFAULT	Agents: 5	100% 90% 80%
😭 Reporting	>	DRADIS	Settings: 🤌	* \$0%
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Agents		DRADISSERVICE Version: 10.4.0.355	Settings: 🥭	« 0% :30
Access Control	~	IAMCL Version: 10.4.0.355	Settings: 🤌	«
Roles		IAMCLASSES	6 W A B	
Resource Groups		IAMCLASSES Version: 10.4.0.355	Settings: 🤌	*
Resources		REGISTRY Version: 10.4.0.355	Settings: 🤌	«

Method 4 - Using PF Invoke API

http://localhost:1505/lisa-pathfinder-invoke/api/v1/agents

NOTE: This is what the portal uses internally

Method 5 - Using Workstation

Created a VS by recording. Choose java as protocol.

Virtual Service Image Reco	order	_		ı ×
	protocol(s) involved	with some basic information about what is to be recorded and select the some transport protocols do not allow for a data protocol.	e approp	riate
	Basics Notes			
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		Create Merge into		
	Import traffic:		~ Brow	wse 🗸
	Transport protocol:	Java		~
		De-identify (transport layer)		
		Treat all transactions as stateless		
		Allow duplicate specific transactions		
	Default navigation:	WIDE V Last: LOOSE		~
	Export to:		~ В	rowse
	Model file:	iles\CA\DevTest\Projects\SE_Issues_Jan_2020\DE439223\3m.vsm	~ В	rowse
	VS Model style:	O More flexible More efficient		
				
		First Prev Next Ca	ncel	Finish

You would see online agents appear in next screen

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Virtual Service Image Reco	order		-	_		×
	Select Java classes to virtualize					
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	IAMCL	₽ ₽				_
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	 Manually Enter a Class Name Agent Suggestions 					
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		_→				
		~				
			Remove	Clear L	ist	
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Choose agent, move it to right and choose class from 'Agent Suggestions'

Virtual Service Image Record	der				_	×
5	Select Java classes to virtualize					
A	vailable Online Agents			Connected Agents		_
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I/	AMCL		⇒	Agent Name		
			÷	DRADISSERVICE		
	 Search for Classes Manually Enter a Class Name Agent Suggestions com.microsoft.sqlserver.jdbc.TDSChannel 	622	Ŷ	com.microsoft.sqlserv	er.jdbc.	nnel
	[Fir	st	Prev Next	Cance	Finish

In the next screen you would see JDBC traffic being captured and you can move further and finish the VS

👰 Virtual Service Image Rec	order		-		\times
	Recording has begun. Exercise the target service while we capture the s button when you have recorded what you want (recording will be stopped)			the Next	:
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	ard0 COM MICROSOFT SOLSERVER JDBC SOLSERVERSTATEMENT -STI	MTEXECCME	STM1	AUTOGE	ENER '
	Showing the 100 most recently added transactions.				
	Total consister 2				
	Total transactions: 45	r			
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Now that you have just done the recording and the VS not deployed, you would be able to see that the agent is in passthrough mode in ATK

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CA Application Trace Kit (v.10.4.0.355 - i.5.3.1.2) [Dev:natsa03@NATSA03-7520.ca
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tcp://localhost:2009	Overview Classes Thread
👬 Pathfinder 🛛 🕆	Overview
🎄 Live Paths	General Actions: 🚡
🧸 Saved Paths	Agent Name:
📳 Database	Agent Version:
Tickets	Agent Directory:
	OS:
📔 Manage Agents 🛛 🕆	Machine:
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🔍 🥘 🛞 DRADISSERVICE (12968)	Working Directory:
🔲 🔍 🖲 👻 DRADISSERVICE currently in VS	E Passthrough mode
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	Details

<u>As soon as you deploy the VS that was recorded, you would see that the status of agent changes to PLAYBACK mode</u>

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CA Application Trace Kit (v.10.4.0.355 - i.5.3.1.	2) [Dev:natsa03@NATS/
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tcp://localhost:2009	Overview Class
A Pathfinder	Overview
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RADISSERVICE currently in	VSE Playback mode
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