

Application of Microservice Architecture to B2B Processes

(IBM Watson Customer Engagement)

by

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Introduction

The International Business Machines Corporation (IBM) is an American multinational technology company headquartered in Armonk, New York, United States, with operations in over 170 countries. IBM manufactures and markets computer hardware, middleware and software, and provides hosting and consulting services in areas ranging from mainframe computers to nanotechnology.

IBM aims to bring Businesses closer and smarter than ever with the help of their state of the art enterprise software product called B2B Sterling Integrator. IBM B2B Integrator helps companies integrate complex B2B (Business to Business) / EDI (Electronic Data Exchange) processes with their partner communities. IBM aims to transform the B2B Sterling product into Microservice architecture.

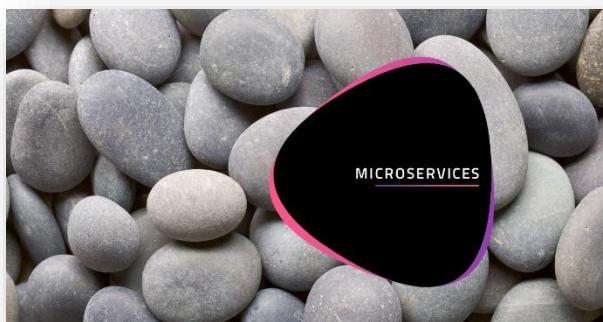
Until now, I have completed several tasks pertaining to the B2Bi Sterling Integrator. Proceeding in stages, Firstly, I researched about the microservice architecture and Business-to-Business processes. Secondly, understood the basic Business process modelling language(BPML). BPML is an XML standard to write business process. To experiment further with the microservice software development architecture, I developed two Microservices – One on node.js (Backend Service) and other using Java JSP (Frontend Service). I gave a presentation regarding I established a REST API connection channel between both services. Lastly, I got myself acquainted with the Sterling Integrator product and deployed a Sample War file on this platform. I also got access to the B2B Sterling Integrator code repository and I explored the code structure to build services and deploy onto this platform.

Report on the Present Investigation

(Progress until the Interim review)

Task 1: Researching about Microservice Architecture and B2B Processes

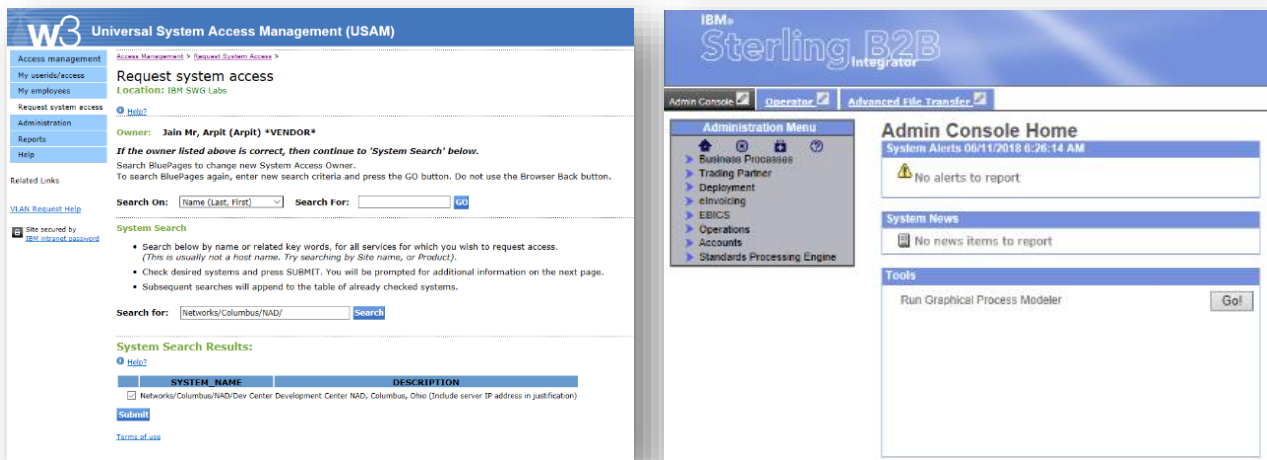
During this duration, I researched and studied about these topics and gave a presentation meeting to the entire B2B Team regarding my study and findings. Following is the link to the presentation I delivered.



[\[Link\]](#)

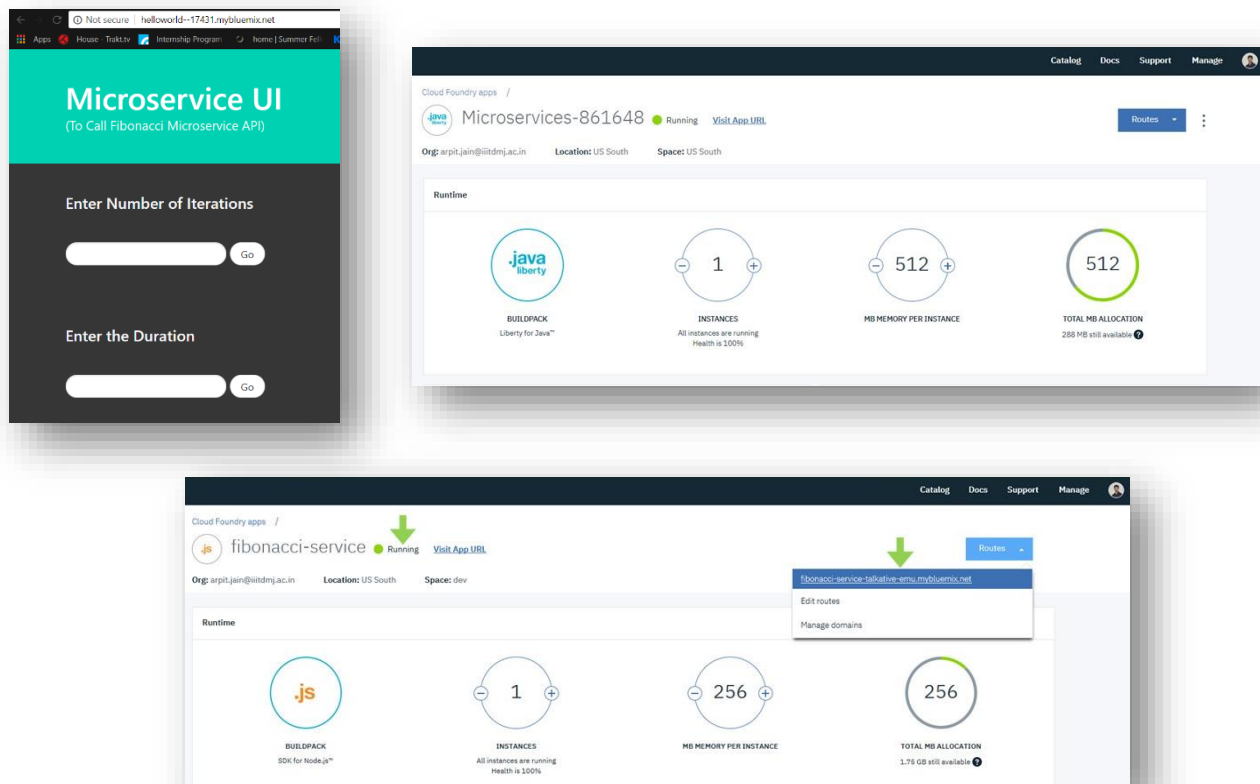
Task 2: Getting access to the B2B sterling Integrator server

To work on the B2B Sterling Integrator product, access to the servers of IBM on which the product is currently deployed and is running live was to be acquired. The access to the servers and the B2B project team was requested and was granted within a week.



Task 3: Microservice Demo application

To demonstrate the usage of Microservices architecture for better application design, I implemented a two-microservice application. One microservice acted as a Backend API Fibonacci microservice which was called by another microservice which acted as an UI.

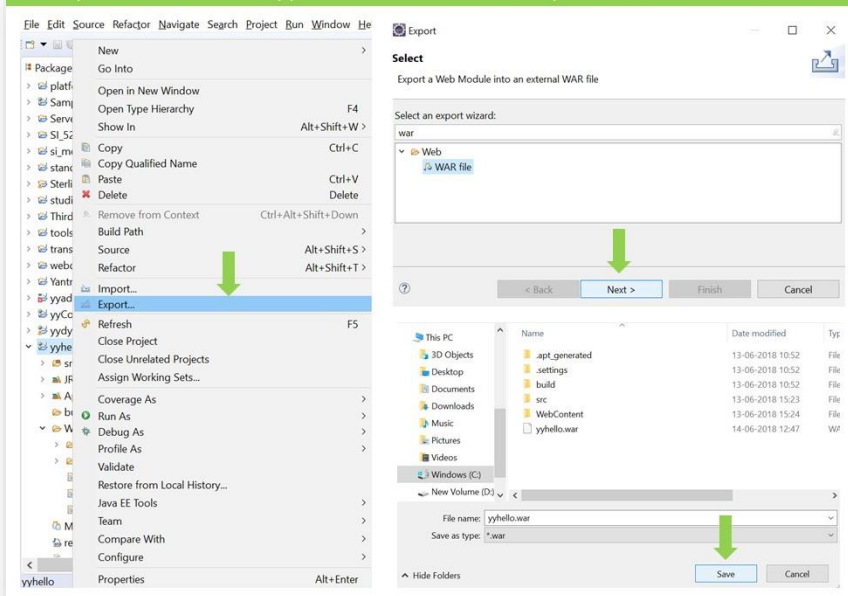


Task 4: Deploying a sample WAR file on the B2B SI server

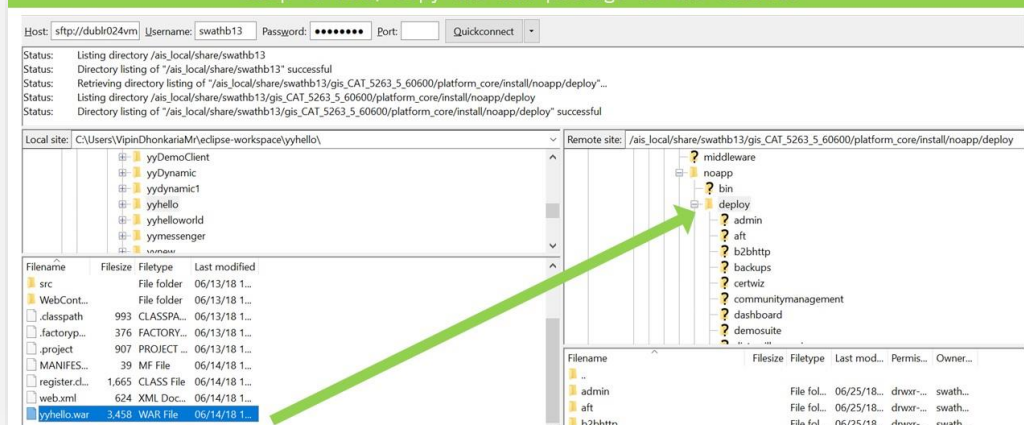
B2B Sterling Integrator works based on the Business processes. These business processes are used to automate the operation of the services in the business environment. There is a basic set of base services which form the core of the SI product. These services are written in Java and are pre-packaged altogether in a WAR archive format. To execute and test these services, the B2Bi war file is to be deployed on the SI server. Before deploying the actual B2Bi war file, I deployed a sample WAR packaged JSP application to test out the dependencies.

Step 1 : Create a new JSP Dynamic Web Application in Eclipse IDE

Step 2 : Code the application and then Export it as an WAR file



Step 3 : Connect to the B2Bi-SI server using Filezilla.
Step 4: Now, copy the WAR package to the server.



Step 5 : Edit the Http Server Adapter service of B2Bi-SI.
Step 6: Add an endpoint to the WAR file.

URI

URI /webx/bp/WebSuiteTSSend
Business Process: WebSuiteTSSend
Send Raw Messages: No
Run BP in Sync Mode: No

URI

URI /webx/bp/WebSuiteUserInfo
Business Process: WebSuiteUserInfo
Send Raw Messages: No
Run BP in Sync Mode: No

URI

URI /yyDate
War File Path
/ais_local/share/swathb13/gis_CAT_5263_5_60600/platform_core/install/oaapp/deploy/yyDate.war

URI

URI /yydynamic1
War File Path
/ais_local/share/swathb13/gis_CAT_5263_5_60600/platform_core/install/oaapp/deploy/yydynamic1.war

URI

URI /yyhello
War File Path
/ais_local/share/swathb13/gis_CAT_5263_5_60600/platform_core/install/oaapp/deploy/yyhello.war

System Audit Information

Jun 25, 2018 2:58:54 AM HttpServerAdapter status: Starting up
Jun 25, 2018 2:58:54 AM HttpServerAdapter status: Running
Jun 25, 2018 2:58:48 AM HttpServerAdapter status: Shutdown
Jun 25, 2018 2:58:48 AM HttpServerAdapter status: Shutting down
Jun 25, 2018 2:02:14 AM HttpServerAdapter status: Starting up
Jun 25, 2018 2:02:14 AM HttpServerAdapter status: Running
Jun 25, 2018 2:02:09 AM HttpServerAdapter status: Shutdown
Jun 25, 2018 2:02:06 AM HttpServerAdapter status: Shutting down
Jun 25, 2018 1:56:05 AM HttpServerAdapter status: Starting up
Jun 25, 2018 1:56:05 AM HttpServerAdapter status: Running
Jun 25, 2018 1:56:00 AM HttpServerAdapter status: Shutdown
Jun 25, 2018 1:55:56 AM HttpServerAdapter status: Shutting down

Step 7 : Wait for 10-15 Minutes so that the application is deployed.
Step 8: Go to the endpoint URI and check if the application is running.

← → ↻ Not secure | dublr024vm.devlab.ibm.com:60600/yyhello/

Apps New Tab Java

Sample Registration Form

First Name

Last Name

UserName

Password

Address

Contact No

← → ↻ | dublr024vm.devlab.ibm.com:60600/yyhello/registr2.jsp

Apps New Tab Java

Welcome User!!!!

Hey user.! Welcome to connect to IBM B@B Sterling integrator

FirstName: Vipin
LastName: Dhonkaria
UserName: admin
Password: admin123
Address: IBM EGL D Block
Contact: 4567890-9876

Results and Discussions

Microservices are an effective and fault-tolerant manner of designing and developing an application. B2Bi is a large monolithic application which needs to be divided into microservices.

Conclusions

During these 15 days, I completed the demo microservice application development and deployment on the IBM Cloud. Also, I got the access request to the GitHub repository of the codebase of the B2Bi product.

Next Target

My target for the next 15 days is to understand the B2Bi Application code, viewing the deployed code/services on the servers and start researching on the development of Java JSP Dynamic web application(WAR) development. My primary aim would be to deploy a sample WAR file on the Sterling Integrator Server.