

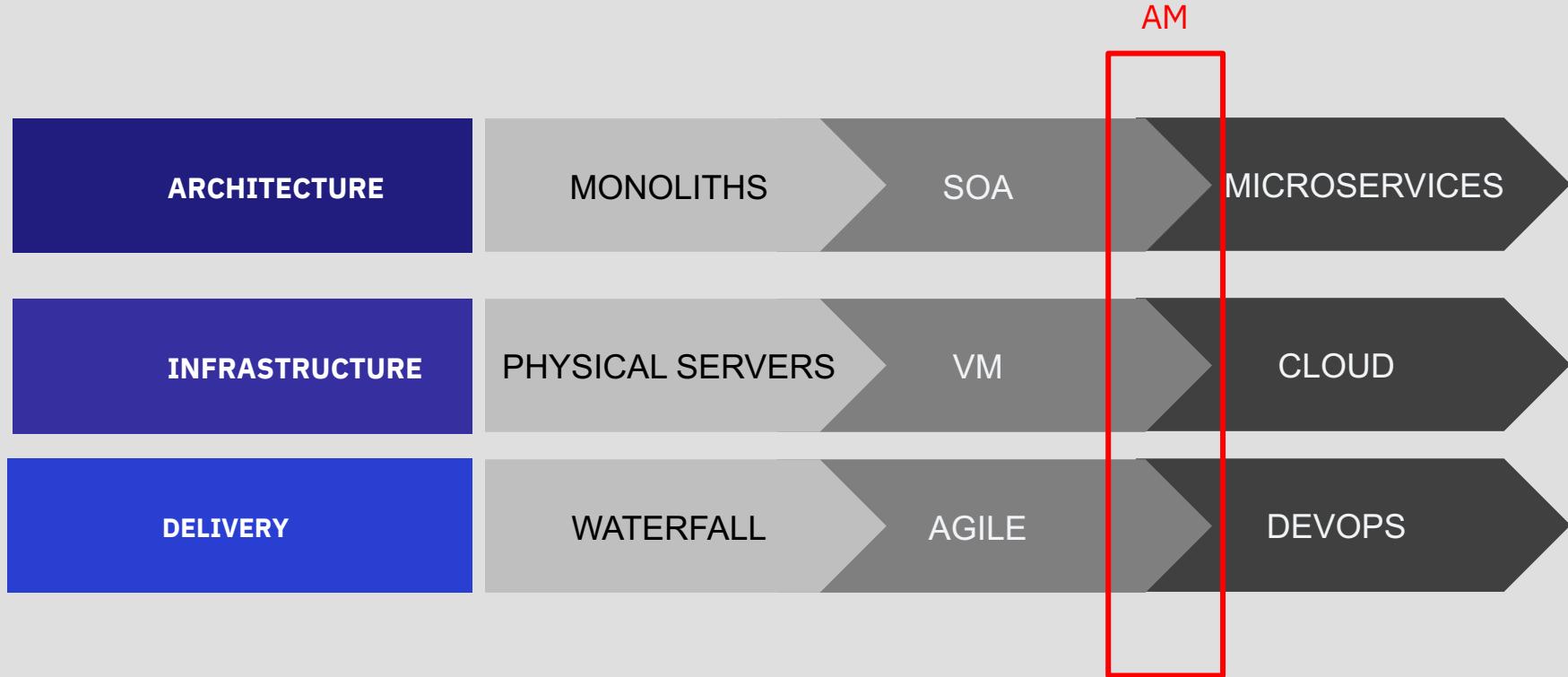
Application Modernization Migration Approaches :IBM
Cloud Transformation Advisor

—
Developer Advocate
Teck talk : Ishani Pandey

Agenda

- What Transformation Advisor is?
- How Transformation Advisor works?
- Reports Evaluation
- Demo on installing Transformation Advisor locally.
- Demo on installing Transformation Advisor on IBM Cloud Pak for Applications

Application Modernization



Moving apps
to **modern**
architectures
starts with
planning

i. Business value

- Measure cost of migration vs benefits gained by migrating
 - Good value usually found in apps that have **Multiple** upgrades per year
 - ✓ Lots of business rules requiring complex regression testing and **extended service outages** to implement
 - ✓ Large, stable (**or growing**) user base

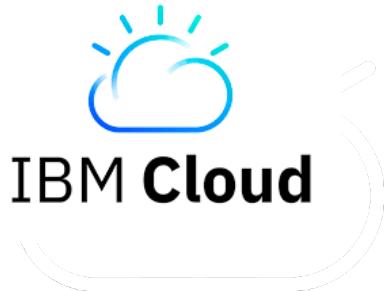
ii. Technical effort

- This is where **Transformer Advisor** helps

Best candidates are those with relatively **high business value** and relatively **small technical effort**

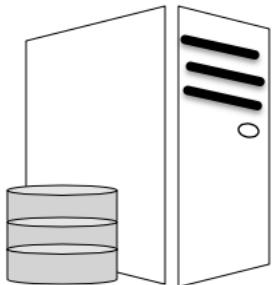
The three ways to migrate...

Replatform

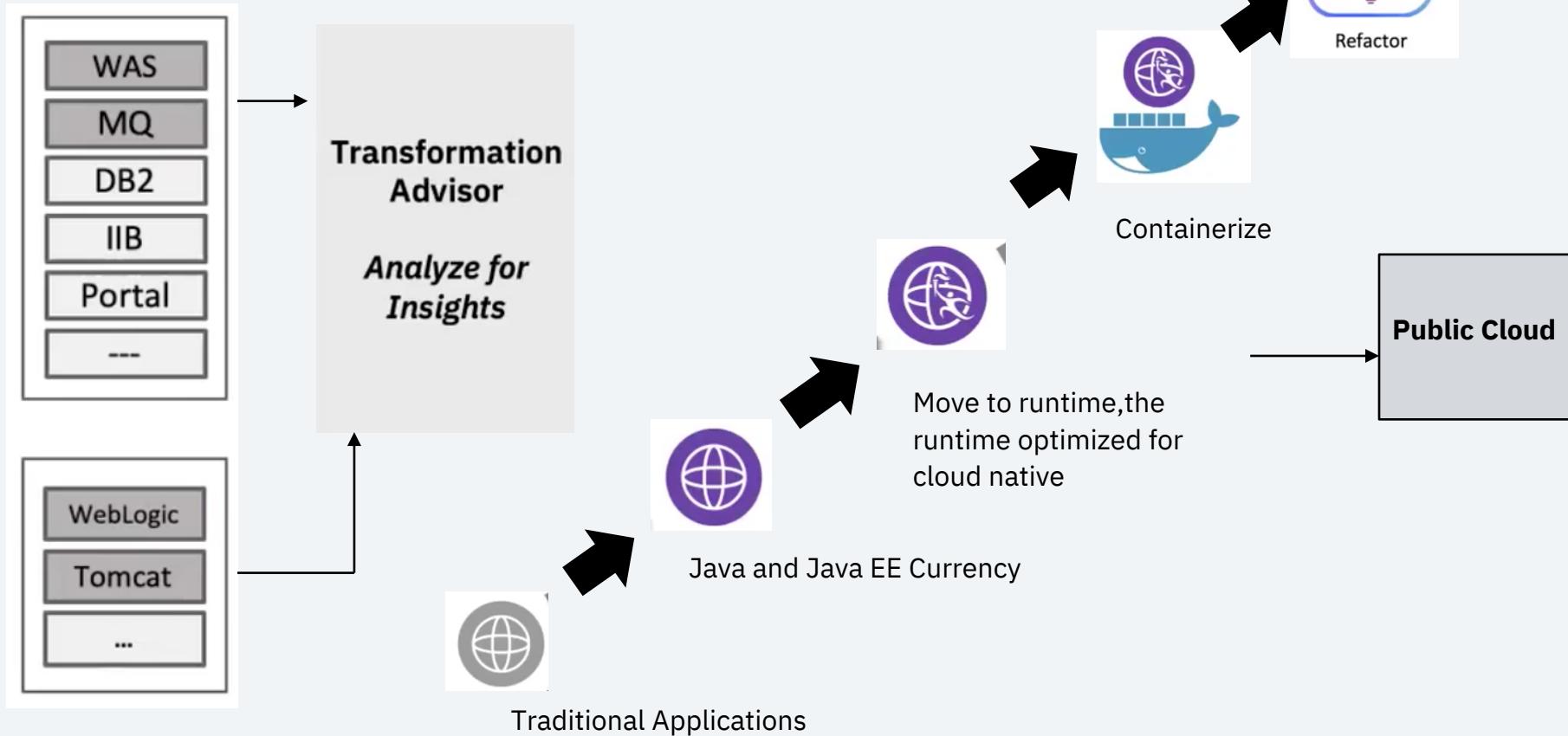


IBM Cloud

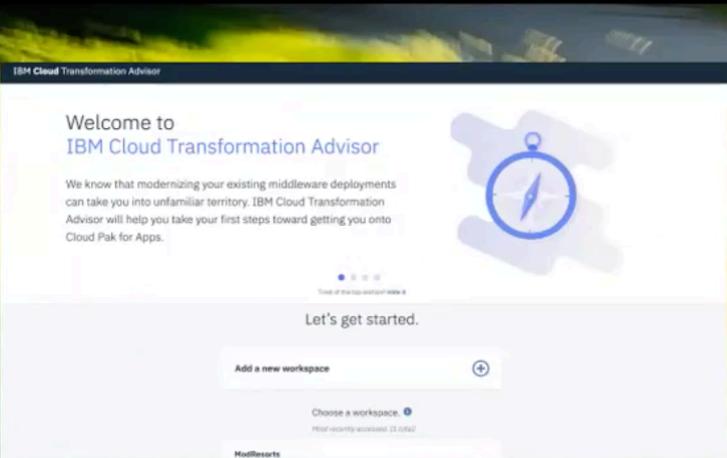
Repackage



Refactor



IBM Cloud Transformation Advisor



Provides insights,
recommendations,
and artifacts
to accelerate
your modernization journey



IBM Cloud Transformation Advisor



Quickly evaluate on-premises Java EE applications and messaging infrastructure to accelerate deployment to private or public cloud

<http://ibm.biz/cloudta>

Welcome to
IBM Cloud Transformation Advisor

We know that modernizing your existing middleware deployments can take you into unfamiliar territory. IBM Cloud Transformation Advisor will help you take your first steps toward getting you onto IBM Cloud and IBM Cloud Private.

Let's get started.

Add a new workspace

Introspects traditional WebSphere, IBM MQ, WebLogic and Tomcat deployments and determines complexity of modernization



Provides recommendations, detailed reports, artifacts and automates deployment for simple application modernization

Analysis Report

Potential issues, severity, possible solutions and estimate of resolution effort

Technology Report

Details on IBM platform support for technologies used in the app

Inventory Report

High-level inventory of application content and structure



Customized application configuration and deployment files

Cloud Pak for Applications: Technical Value

Run existing apps

- WebSphere Application Server
- WebSphere ND | WebSphere Base
- Liberty Core | Mobile Foundation
- JBoss Enterprise Application Server

Build new Cloud Native apps

Kabanero Enterprise is evolving to ...

ACCELERATORS FOR TEAMS & ENTERPRISE GOVERNANCE

Equipping teams with content, tools, architectures and methods so they can focus on business problems from day 1

Modernize existing apps

IBM Modernization & Developer Tools

Included with all components

Transformation Advisor

Application Navigator

WebSphere Migration Toolkit

Enterprise Dev tools & extensions for local IDE's
Supported when used with Cloud Pak for Applications, no charge

Red Hat Runtimes

Java/Jakarta EE
Open Liberty, JBoss EAP

JavaSE
OpenJDK

Java Web
JBoss WS

Javascript
node.js

Spring
Spring Boot

Java.next
QUARKUS

MicroProfile
Open Liberty , Thorntail

Reactive
VERT.X

Serverless
Cloud Functions

Distributed Data
Data Grid

Messaging
AMQ Broker

WebSphere

Traditional
WebSphere

Liberty

Mobile Foundation

Red Hat OpenShift Container Platform

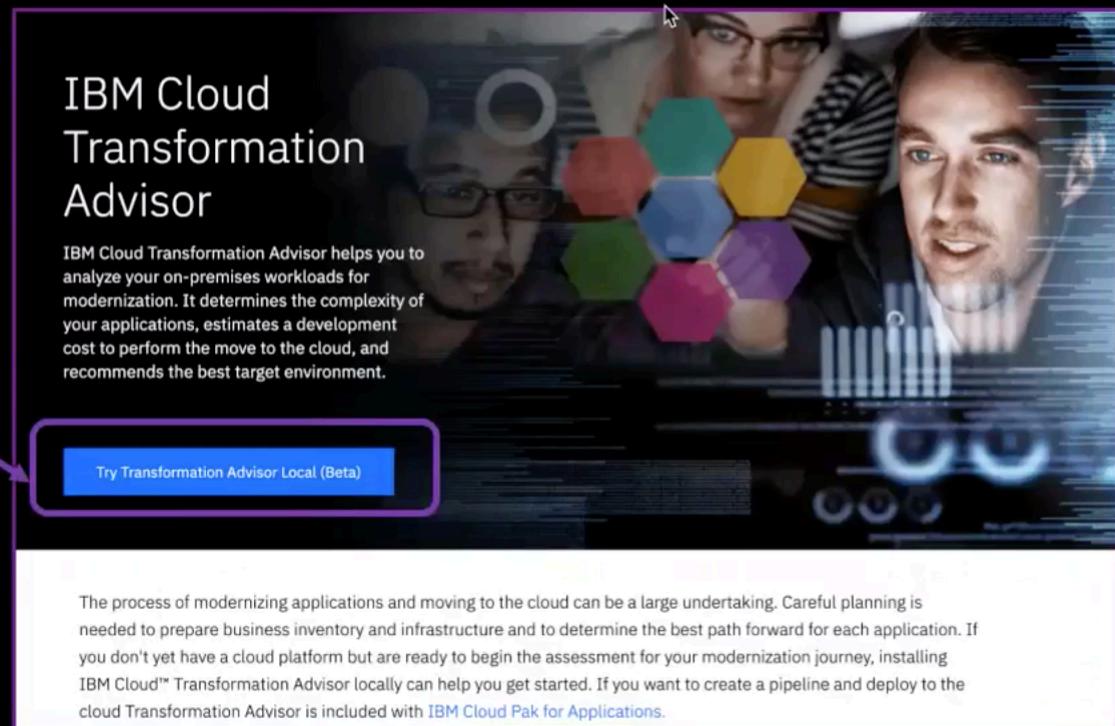
Perpetual and Term licensing options available w/ no functional restrictions to OpenShift

Transformation Advisor – Local Edition

Beta

<http://ibm.biz/cloudta>

Download
IBM Cloud Transformation Advisor
to run it in Docker on
Linux,
MacOS,
Windows V10, or
Windows V7



The landing page for IBM Cloud Transformation Advisor features a central image of three people looking at a screen displaying hexagonal data visualizations. To the left of the image, the product name is displayed in large, bold, white font. Below the name is a detailed description of the tool's capabilities. A prominent blue button labeled "Try Transformation Advisor Local (Beta)" is centered below the description. At the bottom of the page, a paragraph explains the process of modernizing applications and moving to the cloud, highlighting how the local advisor can help get started.

IBM Cloud Transformation Advisor

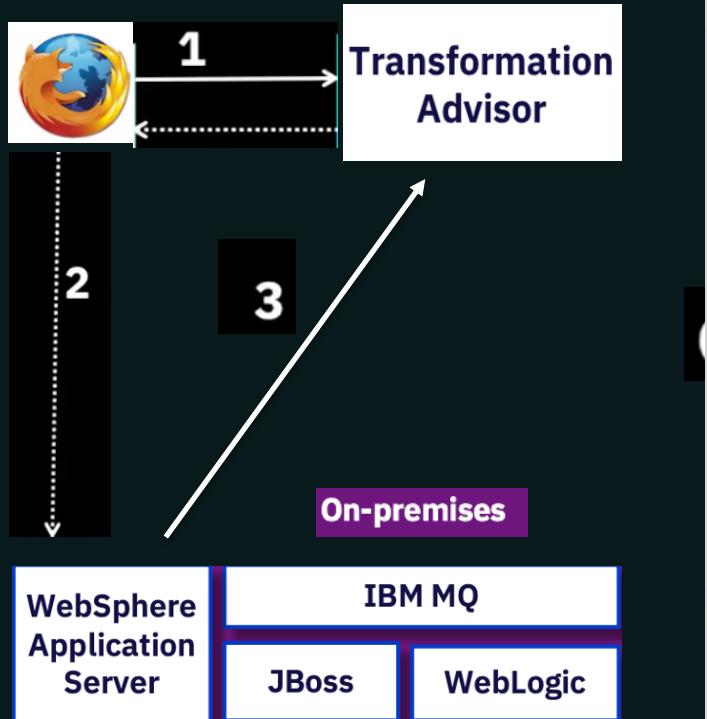
IBM Cloud Transformation Advisor helps you to analyze your on-premises workloads for modernization. It determines the complexity of your applications, estimates a development cost to perform the move to the cloud, and recommends the best target environment.

Try Transformation Advisor Local (Beta)

The process of modernizing applications and moving to the cloud can be a large undertaking. Careful planning is needed to prepare business inventory and infrastructure and to determine the best path forward for each application. If you don't yet have a cloud platform but are ready to begin the assessment for your modernization journey, installing IBM Cloud™ Transformation Advisor locally can help you get started. If you want to create a pipeline and deploy to the cloud Transformation Advisor is included with [IBM Cloud Pak for Applications](#).

How Transformation Advisor Works





1. Access the “TA” User Interface via a web browser and **Download the Data Collector** for your on-premise Java EE and/or IBM MQ runtime environment platform
2. **Execute the Data Collector** in each runtime environment you want to analyze. Supplying administrative access to the runtime will permit configuration data to be collected, providing optimum results.

The Data Collector gathers technology-specific information about your deployed applications, queue managers, and related configuration.

3. **Collected results are sent back** to “TA” when there is direct connectivity – or – the results zipfile can be uploaded through the User Interface.

5. “TA” analysis considers app technology needs, config, dependencies, relationships, container and desired cloud impacts.
6. “TA” provides insights and guidance specific to each application and Queue Manager
7. “TA” generates customized app artifacts. Automates containerization and public and private cloud Kubernetes deployment

The screenshot displays the IBM Cloud Transformation Advisor interface across three main sections:

- Recommendations:** Shows migration details for "IBM MQ" to "HQInstallation1" on "Private Cloud". It includes a "Queue Manager" analysis for "ACCOUNTING.ACOUNT" and "ACCOUNTING.DELIVERY".
- Variety:** Shows migration details for "IBM WebSphere Application Server Network Deployment" to "DayTrader-QMigr01" on "Private Cloud". It lists "Dev applications" with their complexity, Tech-match, Dependencies, Issues, and Edit dev cost.
- Migration Bundle:** Shows a ready migration bundle for "ModResorts.war" on "IBM WebSphere Application Server Network Deployment". It includes sections for "Migration Files" (server.xml, ports.xml, Operator resources, Dockerfile) and "Application Dependencies" (APPLICATION Binary). A "Send bundle to GitHub" button is present.

Valuable Insights at a Glance

- Runtime Inventory
- Complexity Classification
- *Technology Fit
- *List of Dependencies
- Issues to be Tackled
- Resolution Estimate

IBM Cloud Transformation Advisor

Workspace: Think_2019

Collections: AppSrv01, ModResorts, order, Trader, variety

Source environment: IBM MQ

Installation: MQInstallation1, Version: 9.0.2.0

Preferred migration: MQ on Private Cloud

Search items: Queue Manager, Issues, Total effort (in days)

ACCOUNTING.ACOUNT

Variety

Source environment: IBM WebSphere Application Server Network Deployment

Profile: DayTrader-Dmgr01, Version: 9.0.0.1

Preferred migration on Cloud Pak for Apps: Liberty on Private Cloud

Java applications (6)

Name	Complexity	Tech match	Dependencies	Issues	Est. dev cost (in days)
DayTrader-EE6.ear	Resilient (D)	100%	3	1 red, 1 yellow, 6 green	1
DefaultApplication.ear	Complex (D-G)	88%	4	3 red, 1 yellow, 5 green	13
HealthServices.ear	Protocol (D)	50%	None	1 red, 1 green	2
HealthServicesClient.ear	Protocol (D)	80%	1	1 red, 3 green	2
ipetstore_war.ear	Simple (E)	100%	2	6 green	0

Export, Upload options

What's new, Docs, Join us on Slack

*Java EE Applications

IBM Cloud Transformation Advisor

Workspace: Think_2019

Collections: AppSrv01, ModResorts, order, Trader, variety

Source environment: IBM MQ

Installation: MQInstallation1, Version: 9.0.2.0

Preferred migration: MQ on Private Cloud

Search items: Queue Manager, Issues, Total effort (in days)

ACCOUNTING.ACOUNT

Queue Manager, Issues, Total effort (in days)

1 of 1 pages, 1 >

Complexity Assessment

Creates application inventory assesses modernization effort and provides insights and guidance ...

Simple:
No code changes

Moderate:
Some refactoring
needed

Complex:
May decide to run
in WAS/JBoss in VMs before
re-engineering

The screenshot shows the IBM Transformation Advisor interface. On the left, there's a sidebar with 'Workspace' dropdown set to 'My_Workspace' and a 'Collections' section containing 'Another_collection' and 'My_collection'. The main area is titled 'Transformation Advisor' with tabs 'Data collector' and 'Recommendations' (which is selected). It displays migration details: Profile 'Dmgr01', Preferred migration 'Liberty on Private Cloud', Source Environment 'IBM WebSphere Application Server Network Deployment', and Source Version '9.0.0.4'. Below this is a table with application details:

Application	Tech match	Dependencies	Issues	Est. dev cost in days	Total effort in days	Action
ipetstore_ear.ear Liberty on Private Cloud	Simple	100%	2	4	5	Migration plan
StatelessEJB3.ear Liberty on Private Cloud	Simple	100%	1	2	5	Migration plan
TradeServiceMicroservice.ear Liberty on Private Cloud	Moderate	80%	1	2	7	Migration plan
HealthServices.ear Liberty on Private Cloud	Moderate	50%	0	1	7	Migration plan
DefaultApplication.ear Liberty on Private Cloud	Complex	88%	4	13	18	Migration plan
DayTrader-EE6.ear Liberty on Private Cloud	Moderate	100%	3	3	6	Migration plan

At the bottom, there are links for 'What's new' and 'Join us on Slack', and a note 'Please select a recommendation'.

NOTE : At the top of each report, the command line parameters are shown. This helps to validate that your settings in `customCmd.properties` have been detected. This file is used to ensure that the data collector scans all of the files in the application.

Application Evaluation Report

27/09/18 16:14

```
/opt/IBM/WebSphere/AppServer/profiles/Mod1/config/cells/transAdvisor1Node04Cell/applications/modresorts-1_0_war.ear/modresorts-1_0_war.ear
```

```
Scan options: --baseEdition --coreEdition --libertyBuildpackEdition --ndEdition --zosEdition --traditional --liberty --excludePackages=com.ibm, com.informix, com.microsoft, com.sybase, com.sun, java, javax, net, oracle, org, sqlj, _ibmjsp
```

Application Inventory Report

27/09/18 16:15

```
/opt/IBM/WebSphere/AppServer/profiles/Mod1/config/cells/transAdvisor1Node04Cell/applications/modresorts-1_0_war.ear/modresorts-1_0_war.ear
```

```
Scan options: --excludePackages=com.ibm, com.informix, com.microsoft, com.sybase, com.sun, java, javax, net, oracle, org, sqlj, _ibmjsp
```

[Jump To Application](#) ▾

Detailed Migration Analysis Report

27/09/18 16:16

```
/opt/IBM/WebSphere/AppServer/profiles/Mod1/config/cells/transAdvisor1Node04Cell/applications/modresorts-1_0_war.ear/modresorts-1_0_war.ear
```

[Jump To Rule](#) ▾

Reports Evaluation:

1) Technology Report

- Lists the Java EE features used by the application
 - Maps these features to the capabilities of the various WebSphere editions

This is a useful first step to determining whether this application will run on Liberty.

Application Evaluation Report

27/09/18 16:14

/opt/IBM/WebSphere/AppServer/profiles/Mod1/config/cells/transAdvisorNode04Cell/applications/modresorts-1.0.war.ear/modresorts-1.0.war.ear

Scan options: --baseEdition --coreEdition --libertyBuildpackEdition --ndEdition --zosEdition --traditional --liberty --excludePackages=com.ibm, com.informix, com.microsoft, com.sybase, com.sun, java, javax, net, oracle, org, sqlj, ibmisp

WebSphere Application Server V9.0

The highlighted columns indicate which IBM platforms fully support the technologies used by the included application.

Recommendation: Detailed migration analysis should be used to determine if there are migration issues that must be addressed before deploying your application.

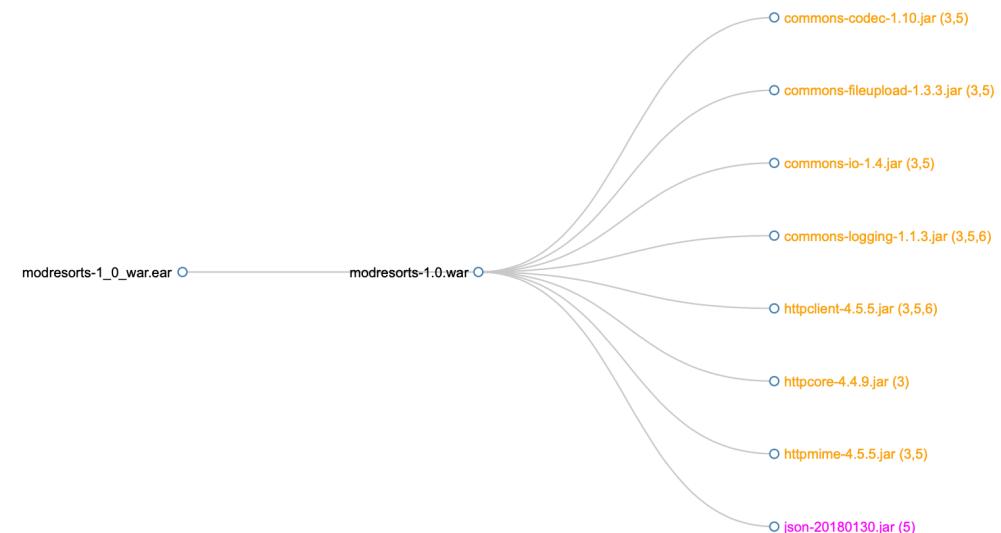
2) Inventory Report

- Lists the Java EE components in the application
- Shows the application structure
- Lists the Utility JAR files

(1) Duplicate (2) Java EE/SE (3) Open Source Software (4) WebSphere (5) Unused (6) Missing Dependencies

Summary

Java Servlets	1
JSP files	0
JPA entities	0
BMP entity beans	0
CMP entity beans	0
Message-driven beans	0
Singleton session beans	0
Stateful session beans	0
Stateless session beans	0
Web Services	0



Utility JAR files

[Close details](#)

Archive

commons-codec-1.10.jar

Packages

org.apache.commons

3) Analysis Report

- Lists the issues found during the scan of the application
This helps give an idea of the size of the monolith and identify the number of EJBs and web services.

Warning Rules

Docker (IBM Cloud Kubernetes Service)

! Handling application configuration in Docker containers (12)

[Close rule help](#) [Show results](#)

Rule Help

This rule detects properties files packaged within an application and references to the `load` and `loadFromXML` methods on `java.util.Properties`. It is best practice to externalize configuration so that it can be injected into the container.

For more information, see [Using variables in configuration files](#) and [Store config in the environment](#).

TA homepage:

IBM Cloud Transformation Advisor

Welcome to Transformation Advisor

We know that modernizing your existing middleware deployments can take you into unfamiliar territory. IBM Cloud Transformation Advisor will help you take your first steps toward getting you onto Cloud Pak for Apps.



• • • •

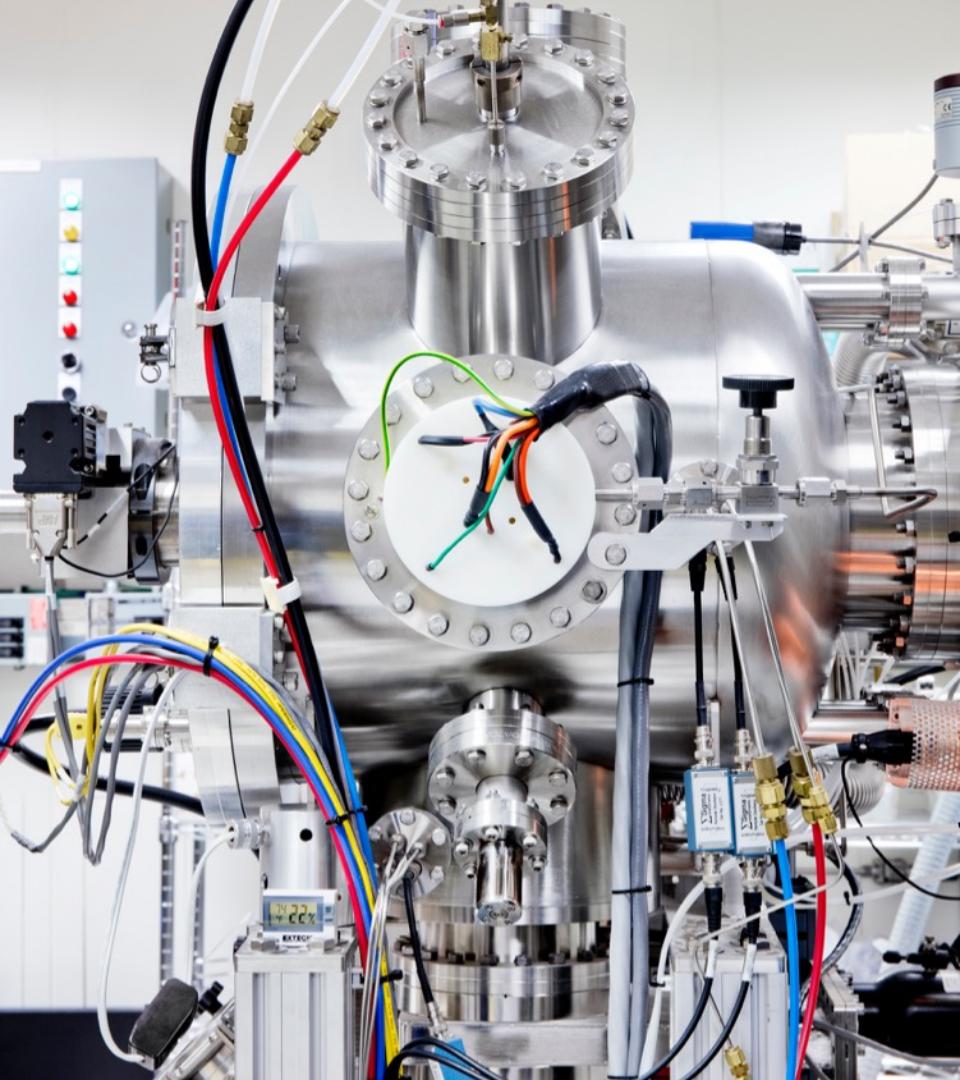
Tired of this top section? [Hide it](#)

Let's get started.
What's a workspace? [ⓘ](#)

Add a new workspace +

Most recently accessed (1 total)

Demo Time!



Lab links for TA installations :

- To deploy the Transformation Advisor locally , follow the mentioned :
<https://github.com/IBMDevConnect/appmod-workshops/blob/master/lab5-transformation-advisor/README.MD>

- To deploy and use the Transformation advisor installed on the IBM Cloud Pak for Applications , follow the mentioned lab :
<https://github.com/IBMDevConnect/cp4atalab>

