

What's new with WebSphere: Unlock savings and new value with Transformation Advisor and IBM Mono2Micro

IBM




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
John Buckley
Product Manager
Application Modernization



Organizations are facing an unprecedented convergence of technological, social, and regulatory forces.

 **Time to market challenges**

 **High operational costs**

 **Managing complexity**



Cloud native practices



Build once, deploy anywhere



Trusted platform



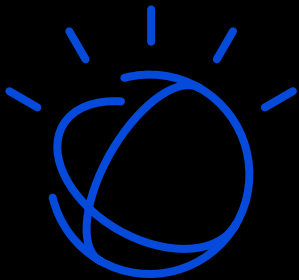
Co-creation



Hybrid cloud



Why Modernize?



1. You can't develop features at the pace your business requires

Cause: technology choices and architecture

2. The architecture of your application is hindering you from being able to add functionality

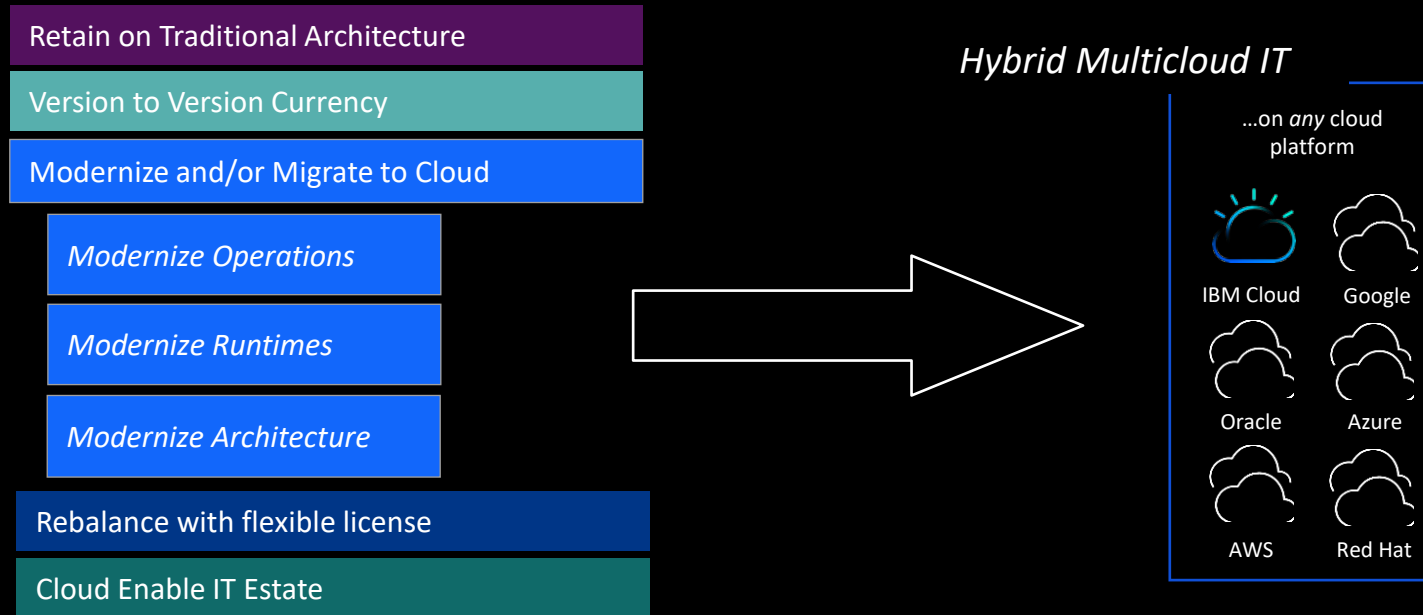
Cause: fragility or constraints from technology choices

3. Your application is expensive to maintain and extend

because either the infrastructure is excessively costly (e.g. older versions of middleware that require special support contracts) or the skills required are too expensive to maintain.

Unlock: Modernize and leverage existing investments

How do you choose the optimum approaches for your organization's needs?



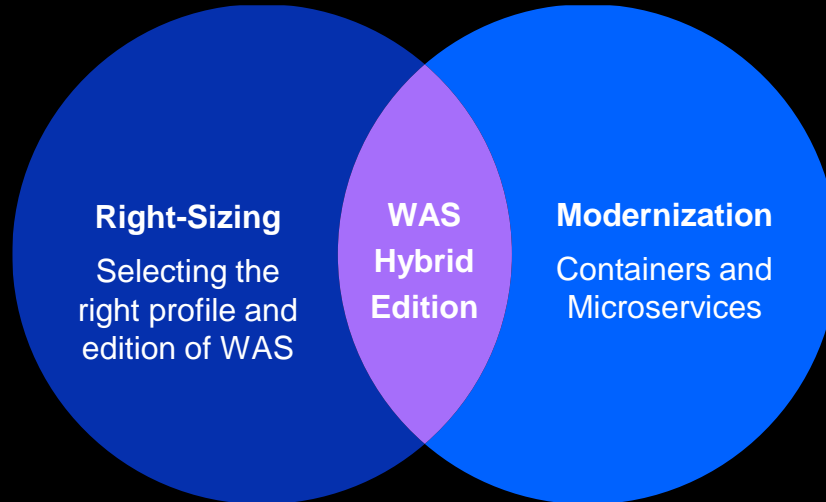
Right-Sizing and Modernization

Two Complementary Value Streams

Right-Sizing

- Cost Reduction through software license savings
- Operational Efficiencies by moving to lighter-weight middleware offerings
- Readiness for container-based architectures and microservice

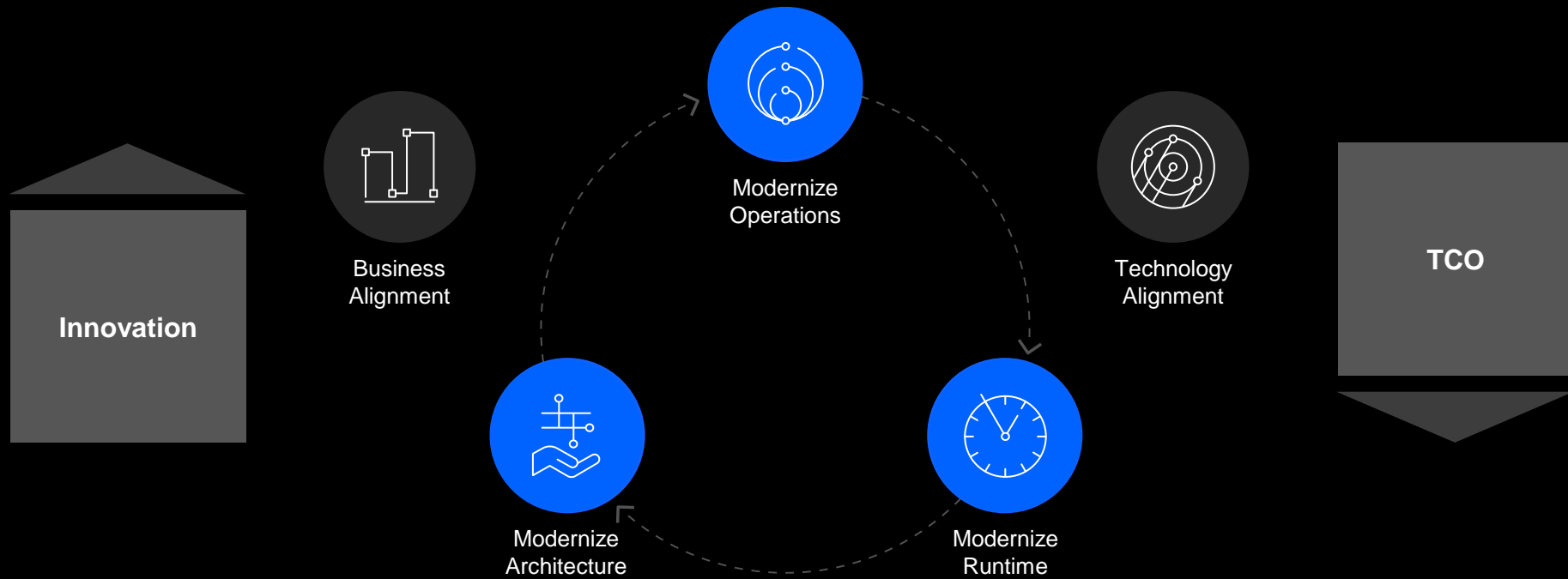
Desired Outcomes



Modernization

- Cost Savings through improved hardware density (Containers)
- Application Portability (Containers)
- Faster, more Consistent Deployments (Containers)
- Improved Business Agility (Microservices)

Where do I start?



WebSphere Hybrid Edition Modernization Value Comparison

	Modernize Operations	Modernize Runtimes	Modernize Architecture
Value			Cloud Native
			Agile Delivery
		Cloud Enabled	
		Cost Savings	
		Technical Debt Reduction	
	Flexible Deployment		
Recommended End State	Application	Application	Microservices
	tWAS	Liberty	Liberty
	Containers	Containers	Containers
Mod Tools	Transformation Advisor		Mono2Micro

■ New ■ Existing

WebSphere Liberty



Why Liberty?

- Higher scalability
- Increased security
- Lower overhead

ROI maximization

Low operating cost

Zero migration &
Continuous delivery

Kubernetes optimized

4x increased density over
Tomcat & Spring Boot

Zero-effort security fixing
& zero technical debt

100% v2v & fixpack
migration saving

Self-tuned optimal perf,
production-ready, kube-native

IBM WebSphere Hybrid Edition: bill of materials



WebSphere Application Server

- WebSphere ND
- WebSphere Base
- Liberty Core
- Open Liberty



Modernization & Developer Tools

- Transformation Advisor
- Mono2Micro
- WebSphere Migration Toolkit



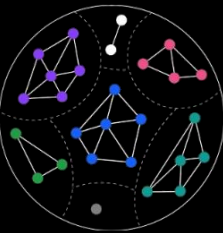
Cloud Foundry Migration Runtime

- Licensing
- Operational Consolidation
- Risk Mitigation

How do Modernization Tools help



Transformation Advisor



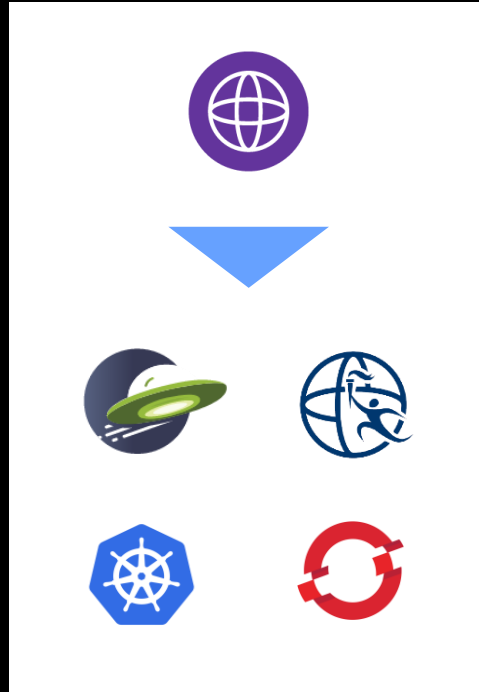
Mono2Micro

	Advise	Move
Modernize Operations	Helps understand cost/complexity of cloud-enabling the application and interdependencies with other apps and services	Generates Migration Artifacts to help build, deploy and operate applications in Cloud using cloud native best practices.
Modernize Runtime		
Modernize Architecture	Recommends how an application can be decomposed along responsibility boundaries and/or refactored into a set of microservices	Generates code for enabling REST based communication between microservices

Quickly modernize your applications with automated expert advice

- Quickly evaluate on-premise Java EE applications and messaging infrastructure to accelerate modernization to Liberty and Kubernetes
- Introspects deployments to determine simplicity of modernization
- Provides recommendations, detailed reports, artifacts, leveraging practitioner expertise
- Generates optimized container definition for application DevOps pipelines

More Info: <http://ibm.biz/cloudta>

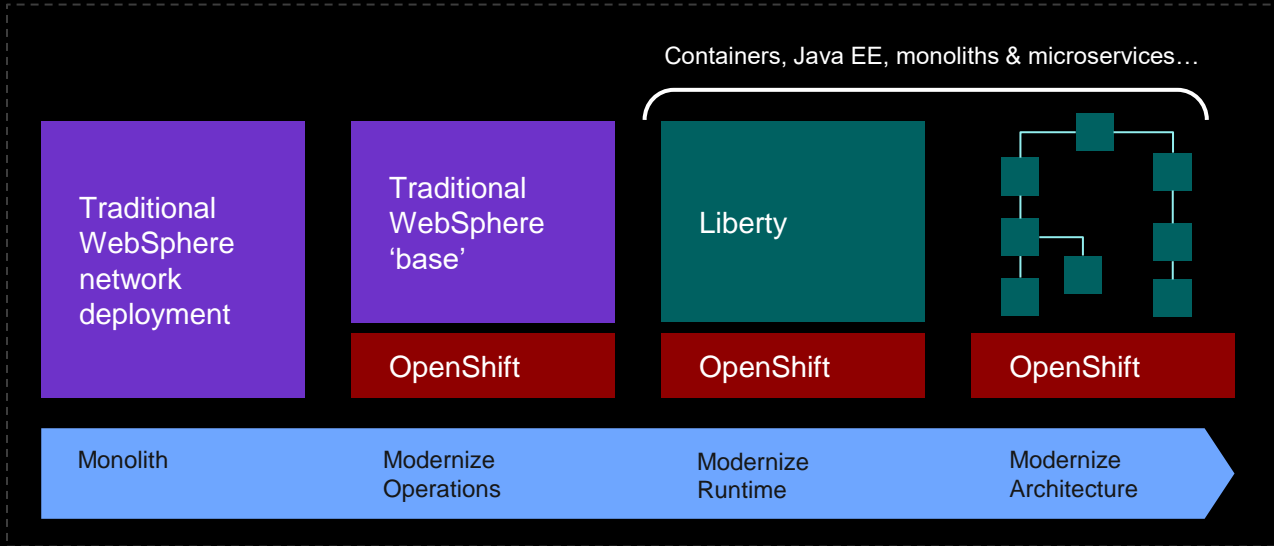


Latest Enhancements

- Improvements in translating tWAS application configuration to Liberty/containers e.g. LDAP and Security domain configuration
- Additional rules for Java SE 15 migration
- Ability to run Transformation Advisor fully supported on RHEL as well as Power, zSystem and FISMA compliant OpenShift clusters
- Homepage customization capability

IBM Cloud Transformation Advisor

Accelerates the modernization journey by quickly discovering and analyzing on-premise Java EE and/or messaging workloads in the enterprise to help in determining and executing the optimum modernization steps for each.





Optimum modernization depends on workload needs! <http://ibm.biz/cloudta>

Workloads:

Java EE

- WebSphere Application Server 
- Oracle WebLogic 
- Red Hat JBoss 
- Apache Tomcat 

Integration

- IBM MQ 
- App Connect Enterprise (IIB) 

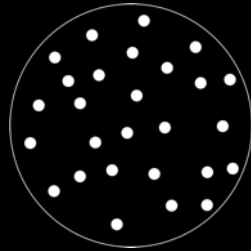
Open Source SDK for other extenders:

<https://github.com/IBM/transformation-advisor-sdk>

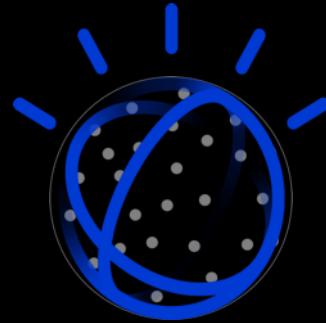
AI based automatic transformation of monoliths into microservices

Mono2Micro AI capabilities generate recommendations, semantic analysis and a significant portion of the code needed for refactoring

Monolith



Microservice Generation Engine



AI identifies high cohesive, low coupling components

Microservices



Generated Microservices ready to be deployed

Available now. Fully supported. [More info.](#)

User can interactively refine recommended Microservices

Generates code for communication between microservices

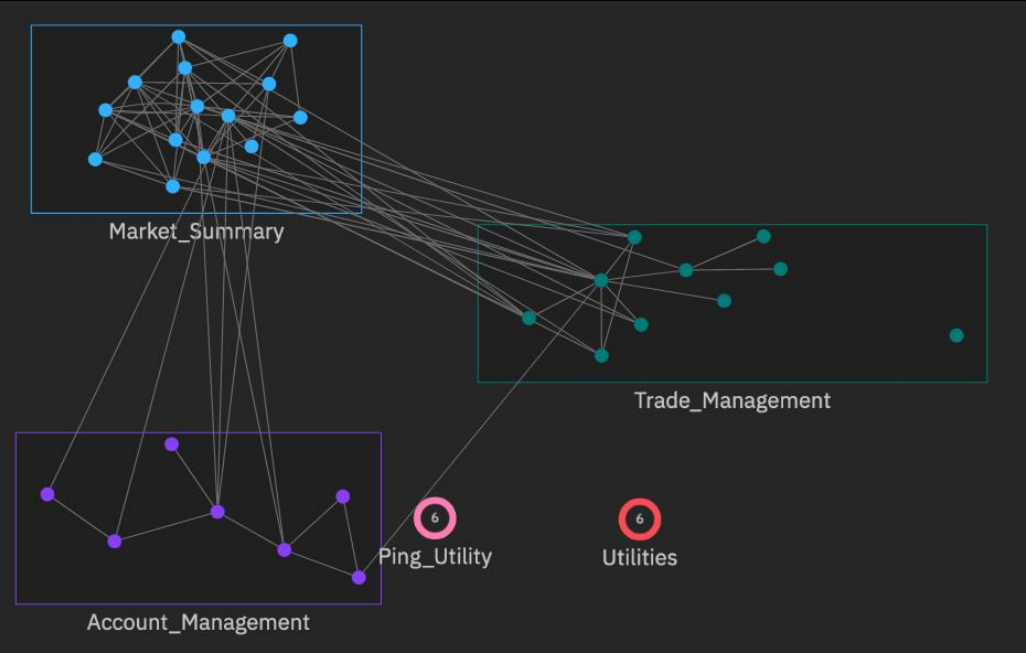
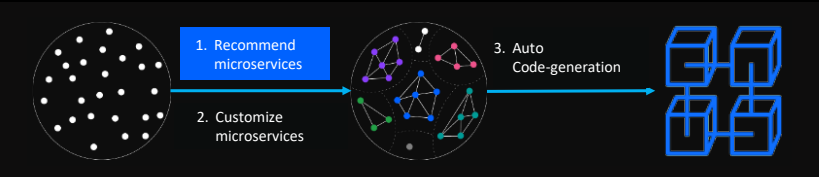
IBM Mono2Micro Microservices Recommendation

DEMO TIME
ibm.biz/Mono2Micro

Input:
Runtime Traces,
Use Cases, Metadata

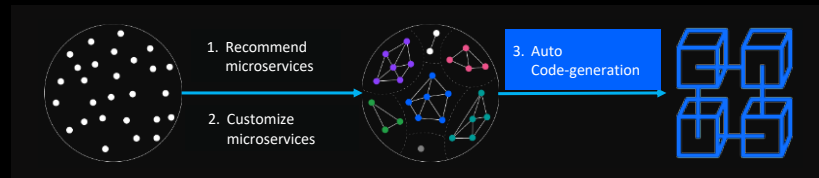
Machine Learning
& Clustering

Output:
Business Logic Seams

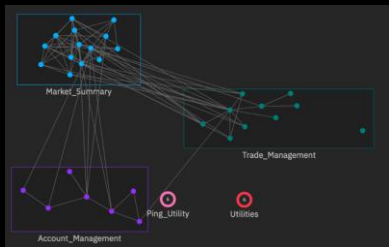


Nodes: Partitions / Groups of Classes - **Edges:** Call Volumes

Automated Code Generation



Input

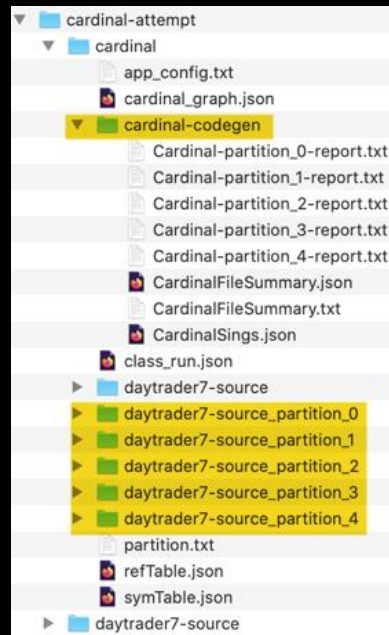


Recommended Microservice
(Business Logic)

+

Original Source Code

Output



Codebase for each microservice

Sample auto-generated code for the microservice

```
...  
public Collection<QuoteDataBean> getTopGainers() {  
  
    Form form = new Form();  
    form.param("referenceId", String.valueOf(this.referenceId));  
  
    JsonObject response_json = client.target(DAYTRADER_BIZLOGIC_REST_URL)  
        .path("getTopGainers")  
        .request(MediaType.TEXT_PLAIN)  
        .post(Entity.entity(form, MediaType.APPLICATION_FORM_URLENCODED_TYPE),  
String.class);  
    String response = (String)response_json.get("return_value");  
  
    Collection<String> response_decoded =  
(Collection<String>)SerializationUtil.decode(response);  
    String ret_type = (String)response.get("return_type");  
    ...  
}
```

Get started

Use Modernization Tools to accelerate your adoption of Containers and Microservices with Liberty

Synergize development and operations teams for both new and evolving workloads

Modernize at your own pace with industry leading support based on open source and standard based APIs (Java/Jakarta EE, MicroProfile)

Schedule



A **free** virtual consultation with an expert

Available now

Experience



Test drive the Mono2Micro refactoring experience
ibm.biz/Mono2Micro

Available now

Get Started



Assess your applications with Transformation Advisor
ibm.biz/cloudta

Free 90-day Trial - Available now

Thank you

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IBM

WebSphere Liberty

The ideal runtime for microservices, monoliths and modernization



- Lightweight highly-efficient runtime - 4x greater efficiency over Tomcat and Spring Boot
- CI/CD optimized – eliminates v2v migration making it effortless to stay current and secure
- Simple true-to-production developer experience in your IDE of choice
- Open Liberty open source option with support through the WebSphere licenses
- Open standard API options for modernization and net new cloud-native applications – Java EE, Jakarta EE, MicroProfile



Powered by Open Liberty

Latest Enhancements

- MicroProfile 4.0 - latest open cloud-native APIs
- gRPC – highly efficient interoperable microservice communication
- LetsEncrypt (ACME 2.0), Kerberos auth, GraphQL, JSON logging, Custom JNDI for EJB
- Beta: Jakarta EE 9.0 certified, JAX-RPC pre-deploy – protecting the future of your Java EE investments

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