Deploying Embedded BI in Modern Application Architectures

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Digital Transformation!

Cars are becoming computers on wheels.
Banks are digital service providers, not physical places.
The Internet and mobile is killing bricks and mortar.
Fill in your own industry.....

Better, faster, stronger.
Transformative.
Disruptive.
Global.

We’re all software companies now.

Software companies build applications.
Data in applications is mainstream

Strava
“How many miles have you cycled?”

LinkedIn
“Who’s viewed your profile?”

Mint.com
“How much are you spending?”
From idea to code to services
Compete on the ability to execute
what is embedded BI?

Jaspersoft for Docker in 4 steps

Jaspersoft® architecture & Docker

embedding with Jaspersoft

evolution of application architectures

Jaspersoft for Docker

TIBCO Jaspersoft® for Docker

how

what & why

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What is Embedded BI?

Old World

your app

analytics

New World

embedded analytics

Put answers in context

Increase adoption of information

Give actionable data when needed

What is Embedded BI?

New World

Increase adoption of information

Old World

Put answers in context

Give actionable data when needed

What is Embedded BI?
What makes embedded BI different?

Application consumer
Non-technical, non-analyst

Intuitive data experiences
Designed for software builders

API-first approach

Built to 100% web standards, including our award-winning JavaScript API for embedding, visualize.js

Seamless integration
SaaS is King

Multi-tenant support
Pre-configured. Control access to data & resources for all your customers.

Security across all customers and data
Architecture Support

Fits in any architecture

Deploy using any method. Run anywhere and on any thing. 100% open architecture.

App deploying and running Jaspersoft in Docker container
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The Apps They Are A-Changin’

~2000

Today

Monolithic
Slow changing
Big servers

Loosely coupled services
Rapidly updated
Many small services
Small services, or containers
Internet (1973)
Chroot Jails (1979)
DNS (1983)
Linux (1991)
Load Balancing (1992)
Git (2005)
Go (2009)
Raft Algorithm (2013)
What is Docker?

Docker is a platform that builds, deploys and manages applications as “containers”

Control  Agility  Portability
What do containers bring to developers?

- Control
  - Dev
  - Integration
  - Test
  - Production

- Agility
  - Authentication Service
  - CAS
  - Application Logic
  - Java™
  - Backend Data Service
  - MongoDB®
  - Embedded BI Service
  - Jaspersoft
  - Integration Service
    - TIBCO BusinessWorks™ Container Edition

- Portability
  - On Prem
  - Cloud
  - Developers
What do you know about containers?

- Never heard of them?
- Know the “pets vs cattle” discussion?
- No plans? Exploring? Using?
- Using with Microservices?
- Cloud deployment?
A container is a virtual machine, right?

Each house needs its own electrical, plumbing, heating, etc

The apartment building offers shared electrical, plumbing, heating, etc to each apartment.
Still sounds like a virtual machine!

- Each app needs its own OS
- Containers include app and run isolated from each other on Host OS.

Docker engine

Host operating system

Server

Virtual Machine

Containers

Hypervisor

Host operating system

Server

bins/libs

guest os

guest os

guest os

App 1

App 2

App 3

App 1

App 2

App 3

volume

volume

network
Deployed my blog on Kubernetes
In a sentence, please?

crealytics
Retail intelligence tool for optimizing paid search effectiveness and spend

Benefits

• Each service is assigned optimal resources (CPU, RAM) reducing both CAPEX and OPEX
• Running same setup in staging as in production making new changes easy to test and deploy
• Moving Jaspersoft containers or deploying new versions is done with almost zero downtime

“Configuration changes and patches applied on Jaspersoft for Docker can be tracked and managed via the Dockerfile in a Git repository, just like any other source code. Having our Jaspersoft setup bundled into a Docker image enables us to have exactly the same setup running in staging as in production.”

– Dr. Robert Heise, Sr. Data Engineer, crealytics GmbH
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Embedded User Interface Options

1: REST API
- Total control
- Administration tool
- Programming required

2: iFrame
- Jaspersoft native user interface
- Themes
- Simple

3: visualize.js
- Javascript library
- Seamless in-page visualizations and interactivity
Embedded with Data

What to connect to?  How to connect to it?  How to secure it?

Direct  (Native)

Metadata layer  (Domain, SQL)

Optimized  (ETL, Warehouse, ...)

Virtualized  (Multiple data sources)

Single Sign on

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Customer</th>
<th>Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Smith</td>
<td>Customer 11</td>
<td>$35,000</td>
</tr>
<tr>
<td>Nancy Snowden</td>
<td>Customer 24</td>
<td>$45,000</td>
</tr>
<tr>
<td>Martin Scotcher</td>
<td>Customer 11</td>
<td>$57,500</td>
</tr>
<tr>
<td>Terry Knight</td>
<td>Customer 11</td>
<td>$42,000</td>
</tr>
<tr>
<td>Megan McGovern</td>
<td>Customer 7</td>
<td>$45,000</td>
</tr>
<tr>
<td>Sue Gonzales</td>
<td>Customer 9</td>
<td>$37,500</td>
</tr>
</tbody>
</table>

By “Tenant”

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Jaspersoft for Docker in 4 steps + embed

what is embedded BI?

evolution of application architectures

Jaspersoft architecture & Docker

embedding with Jaspersoft

Jaspersoft for Docker
Distributed application architecture

Browser user

Web services client

Web applications, Load balancer

Service Containers

Data sources

Email Services

External Services
Integrating Jaspersoft in Applications

Browser user

Web services client

Web applications, Load balancer

Service Containers

Containers or External Services

Repositories

Repository database

Data sources

Email Services

e.g. CAS, LDAP, JAAS

External Auth

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Being MEAN with Docker and Jaspersoft
what & why

what is embedded BI?

evolution of application architectures

Jaspersoft for Docker?

Jaspersoft architecture & Docker

embedding with Jaspersoft

Jaspersoft for Docker in 4 steps

how
Jaspersoft for Docker in 4 Steps

Networks

Apache Tomcat® app server

PostgreSQL repository

Containers

Github project

https://github.com/TIBCOSoftware/JS-Docker

Volumes

--> clone or fork github project

--> copy WAR file to resources folder

--> review Dockerfile, documentation and runtime environment

--> docker-compose up
Open Source Traction
Statement of Direction

The following is intended to indicate our general product direction. It is not a commitment to deliver any functionality, and the development, release, and timing of any product or features described remains at the sole discretion of TIBCO.
JasperReports Library as a containerized service?

Embedded as a containerized service

- Orchestration Layer
- WebService API
- JRLib
- WebService API
- Java Servlet Container
- WebService API

- Scalability
- Monolithic
- Availability
- Durable
- Performance
- Fixed Resources
- Redundancy

Accessed as a service via REST API

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- what is embedded BI?
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- Jaspersoft for Docker
Get started...

Download Jaspersoft for Docker Project (& Doc)
https://github.com/TIBCOSoftware/JS-Docker

Evaluating Jaspersoft?

Register for Weekly Live Demo
https://www.jaspersoft.com/jaspersoft-weekly-live-demos

Test Drive Jaspersoft BI Platform—60 Day Free Trial
https://www.jaspersoft.com/download-jaspersoft-bi-software
Thank you!