

INTRODUCING CROSSWORLDS

A new tool in your app development box
WebSphere Liberty Productivity with the full power of
Domino/NSF

MISSION

Bring to Domino developers an easy way into J2EE

Bring to **J2EE** the full **power of Domino**

Bring to **customers** the **best** of both worlds

WHO AM I?

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Founder & CTO at Factor-y S.r.l.

Java developer & architect (Java 1.0.2+ on OS/2)

Domino Developer & architect (Notes 4.5+)

WebSphere Developer & architect (WAS 3.5+)

R&D guy / geek / lazy developer (lazyness favours invention)



THE DEVELOPMENT MODEL PROBLEM

NSF/Domino is NoSQL since before NoSQL existed

Powerful security and replication infrastructure

Great at handling attachments/binary data

Great at workflow

Modern developers don't get Domino (they call it legacy... then they set off for less mature NoSQL solutions)

THE WEBSPHERE PROBLEM

Notes/Domino developers failed to invest into WebSphere / J2EE due to wrong myths:

- J2EE is slow / cumbersome ... (not anymore since a long time)
- WebSphere is evil (the IBM Workplace product created this perception in Notes shops)

In 2015 we need to move on. Java / J2EE are the way you may choose with productivity at hand

THE REAL PROBLEM

There are 10 million NSF applications deployed at customers. Notes shops (customers / partners) need to:

- Integrate (with other systems)
- Modernize (mobile, responsive, restful, oauth)
- Be productive and simplify application development
- Exploit any available tool

WHAT IS CROSSWORLDS?

WebSphere Liberty (8.5.5.4) +
IBM Domino (9.0.1) +
OpenNTF Domino Api +
CrossWorlds feature for Liberty

WEBSPHERE LIBERTY

A fast J2EE Application Server built by IBM for modern needs.

- Light (< 40 Mb ram, < 5sec startup)
- Open (OSGI based + J2EE 6 / 7)
- Constantly evolving
- Extensible (customizable to the limit)
- Easy to manage (unzip & run, no install needed)

IBM DOMINO (9.0.1)

You should know it ^^

What we care about is

- Advanced storage facility (NSF), schema free
- Replication and distributed server topology
- Native/embedded security model (+LDAP)
- Provides native binding for Java (Notes.jar / napi)

OPENNTF DOMINO API

An OpenNTF project that gets you:

- Modern Java constructs on top of Notes.jar API
- Extra goodness:
 - Graph API
 - HyperSearch/Index
 - Xots (agent-manager free Agents)
 - Much more (look on slideshare for good content)

CROSSWORLDS FEATURE

An extension for the WAS Liberty application server

- Embeds ODA as an OSGI component
- Manages initialization and lifecycle of the Domino integration (can provide NSF services even if the Domino server is not running)
- Zero effort setup for developers & sys-admins
- Is the foundation for future work (auto-config, extensions, Websphere helpers)

WHAT CAN I DO WITH IT ?

Exploit any J2EE / Java library

Exploit Java 1.7/1.8 (Domino still on 1.6)

Manage security your way

J2EE EXPLOITATION FOR DOMINO

- JAX-RS for Rest (the J2EE way)
- JAX-WS for WebServices (the J2EE way)
- Spring, Struts, other framework ? **YES**
- Choose your own
- Async servlets / higher scalability

plus

- Java Batch
- Scheduler / managed threads
- OSGI application model

JAVA 1.7/1.8 AT HAND

Domino JVM is 1.6

WAS Liberty can run on 1.6/1.7/1.8

You can build your reusable frameworks or exploit existing frameworks for your apps.

Not tied anymore to IBM's choices for Domino

MANAGE SECURITY YOUR WAY

- Trusted Authentication Interceptors (**TAI**) allows to define your custom system for authentication and SSO (add Oauth, Saml, custom)
- ODA services allow the creation of:
 - **Trusted sessions**: CrossWorlds is a gateway to any database on any server in the domino network
 - **Named sessions**: CrossWorlds sessions can proxy any user and run code on their behalf
- Exploit LTPA (Domino and Liberty share config)
- Exploit LDAP (Liberty uses the same servers as Domino)

EARLY EXPERIENCE

We're building it

MacOSX is at hand

Start looking into WebSphere Liberty

Getting started app

WE ARE BUILDING IT

CrossWorlds went from idea to reality in the days between December 20 2014 and December 31 2014

Most of the discussion is happening at OpenNTF Domino Api chat group on Skype

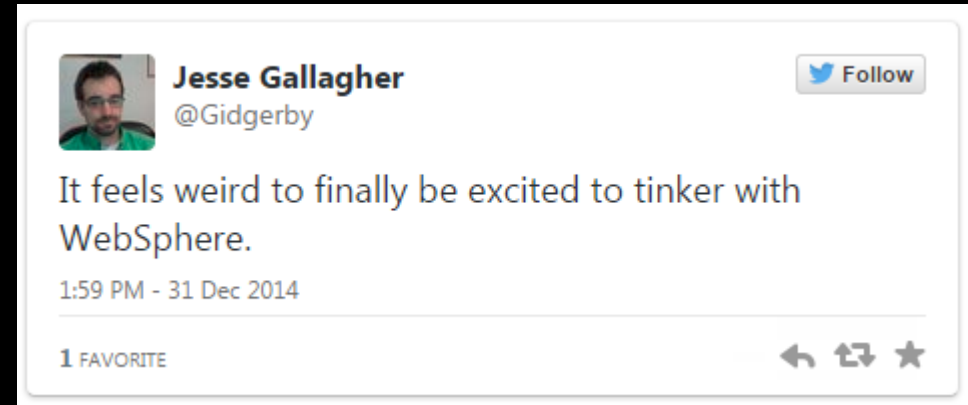
We're doing tests, building stuff, testing things out

MACOSX IS AT HAND

Our hacks got results..

Jesse Gallgher (@Gidgerby) got CrossWorlds running on a Mac with native access to domino using the client libraries.

Notes Client + WAS Liberty + CrossWorlds = modern development for domino on Mac



LOOK FOR LIBERTY

IBM has invested a huge amount in making WebSphere Liberty a great application server

BlueMix runs on Liberty

Start looking at it today

- [https://
developer.ibm.com/wasdev/docs/introducing_the_liberty_pro
file/](https://developer.ibm.com/wasdev/docs/introducing_the_liberty_profile/)
- [https
://developer.ibm.com/wasdev/docs/category/getting-started
/](https://developer.ibm.com/wasdev/docs/category/getting-started/)

GETTING STARTED

I've created a sampler APP (included)

It provides a web based groovy shell allowing you to test out ODA code from your browser.

CrossWorlds for Domino Running as: agora

Hello, CrossWorlds!

This application shows you the possibilities that the [OpenNTF Domino API](#) and [WAS Liberty](#) bring to Domino developers

Why

XPages brought IBM Domino up to date for web development. XPages are intended to bring Domino Applications.

But what happens if we're looking to use the power of domino for other kind of applications ?

XPages just is not the right tool, we felt **J2EE 6.0+ with Domino** could be a wedding made in heaven. **CrossWorlds** is just about this

[Why CrossWorlds »](#)

What

IBM has been including for a long time a license of WebSphere in all Domino licenses.

We took advantage of this to create an easy-to-setup, easy-to-use application server exploiting IBM WebSphere Application Server Liberty on top of IBM Domino

CrossWorlds is a **lightweight, modern, extensible J2EE application server** embedding the full power of Domino.

Thanks to [ODA](#) we've **Domino native performance inside a full J2EE stack**. The best of both worlds.

[What's CrossWorlds »](#)

Play

This sample application is built on CrossWorlds to show you how this works for you.

Use the embedded code editor to write code using the full domino API and get the results fast

This app will evolve to become a full API / Explorer and eventually a Web IDE

Our mission is to bring Domino developers and Java developers to easily exploit the advantages of J2EE and Domino together.

[Play with CrossWorlds »](#)

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LEGAL

All in

ALL IN

I've been looking into the topic of WebSphere Liberty licensing. I need to get confirmation from IBM's legal but here's what's going on:

1. XWork Server, Domino Collaboration Express, Domino Enterprise all include entitlement for IBM WebSphere Network Deployment
2. WebSphere Network Deployment includes WebSphere Liberty
3. All you need is already in the server license for your domino servers

Don't hold back, go get it.

WHAT'S NEXT

Technical overview

OpenNTF project ?

TECHNICAL OVERVIEW

I'm working on another presentation to describe how CrossWorlds works and the requirements of it.

I hope to be getting feedback to this introduction and then prepare a technical presentation going deeper into it.

OPENNTF PROJECT

My company (Factor-y S.r.l.) is a member of OpenNTF. We've so far not contributed anything.

If CrossWorlds meets the requirements we'll share it as our initial contribution and establish CrossWorlds (or whatever final name we take) as an OpenNTF project.

THANKS

Thanks to all the guys in the OpenNTF Domino API team and chat for the support in making this happen

- Nathan T Freeman / Roland Praml / Paul Withers for helping me understand ODA
- Jesse Gallagher for testing out my stuff and making it work on MacOSX
- Everybody else for the fun of the discussion that's going on

As per Nathan motto: **“We do what we must because we can”**

REFERENCES

<https://github.com/Factor-y/CrossWorlds>

<https://developer.ibm.com/wasdev>

<https://github.com/OpenNTF/org.openntf.domino>