Installing and Configuring IBM MobileFirst Platform on Linux for z Systems

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Thursday, August 13, 2015
10:00 AM-11:00 AM
Session 17267
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Meet the zPET Mobilization Team

Max and Torin joined the IBM zPET team in January 2015 while Sophomores at Marist College. Working only part-time, they were able to quickly prototype mobile workloads. We are currently moving our first prototype to production.

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Agenda

• z/OS Platform Evaluation Test (zPET) introduction
  – Mission
  – Environment
  – Mobile challenge
• MobileFirst Server prereqs
• MobileFirst Server TEST Installation
  – WebSphere Liberty profile
  – Apache Derby
  – Deploying application
• MobileFirst Server PRODUCTION
  – WebSphere Application Server
  – DB2
z/OS Platform Evaluation Test (zPET)

• Mission
  – Perform integration testing of z/OS and z/HW
  – Recreate field issues, assist with critsits, etc.

• Hardware
  – Approx. 175,000 MIPS
  – 3 generations of z/HW (z13, zEC12, z196)

• Logical
  – (up to) 32-way parallel sysplex
z/OS Platform Evaluation Test (zPET)

- Middleware
  - 86 IBM products outside z/OS BCP
  - Subsystems: CICS, IMS, DB2, MQ, WAS, IIDR
  - Operations: System Automations, NetView, TWS, GDPS

- Workloads
  - 88 test applications
  - Designed to match client user flows, in some cases with direct input from IBM clients

- Mobile
  - MobileFirst workloads
  - Currently deploying to production
Mobile challenge

• How do we include mobile flows in our test environment?
  – Need a scalable, automated solution to fit

• How are mobile flows different from other flows?
  – The back-end system of record is the same
  – Is the transaction mix different?
    • Read/Write
    • Search/Update

• Solution
  – Implement MobileFirst Platform to drive CICS, IMS, DB2, WAS, MQ, etc. via simulated mobile devices
Well, we think we know how we’re going to do this … now we need to build a Server
MobileFirst Server Prereqs

• MobileFirst server requires an application server and a database management system. There are several supported configurations.

• Application Server
  – WebSphere Application Server Liberty Core
  – WebSphere Application Server
  – Apache Tomcat

• Database Management System
  – IBM DB2
  – MySQL
  – Oracle
  – Apache Derby (not for production use)

What’s the fastest implementation we can put together for TEST?
Mobile Application Architecture

WAS Server

DB2 Server

z/OS

JDBC Connection

MobileFirst Server
Linux on z

Device (JMeter)

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Installing Liberty … I mean Installation Manager

*Note* Installing all products from command line

- Download and extract Liberty installable files
- What do I do with this?
- Ah .. I need Installation Manager

- Download and extract Installation Manager
  – Also Known As IBM Enterprise Deployment
- Install in Console Mode …. Done!


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Installing Liberty

• Start Installation Manager in Console Mode
• Add extracted WAS Liberty installable as Installation Manager repository
• Follow install prompts
  – Basically, your standard Installation Manager install

• Our TEST environment used Apache Derby for the DBMS
  – No install .. Extract and go
  – Database created by running MobileFirst installation scripts
  – https://db.apache.org/derby/
Installing MobileFirst

• MobileFirst installation does not support console mode
• Must use Installation Manager response files in silent mode
  – Different sample file for each combination of app server/DBMS
• Download and modify sample response files

• Result from Installation Manager:

```xml
<?xml version='1.0' encoding='UTF-8'?>
<result/>
```

I guess that’s good


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Installation Frustrations

- “Hidden” prereqs like Installation Manager
- Product name changes
  - Enterprise Deployment
  - Installation Manager
- Scattered documentation
  - Installation Manager Knowledge Center
  - WAS Liberty Knowledge Center
  - MobileFirst Knowledge Center
- Different installation methods
  - Installation Manager console mode
  - Installation Manager response file
Now that it’s all there, let’s try to configure it
Configuration Steps

• Database Management System
  – Create databases for administration services, report, and generic MobileFirst

• Application Server
  – Create logical server in Liberty

• MobileFirst
  – Deploy operations console and administration services

• Performed by executing Apache Ant tasks, using samples shipped with MobileFirst Server
  – No install .. Extract and go
  – http://ant.apache.org/
Sample Ant script

• Sample scripts provided
• Modify a couple of lines at the top of the file, then execute:

```xml
<property name="worklight.server.install.dir" value="/opt/IBM/MobileFirst_Platform_Server"/>
<property name="database.derby.datadir" value="/opt/derbydb"/>
<property name="database.derby.wladmin.dbname" value="WLADMIN"/>
```

• Contain a “help” target to explain what to run:

This ant project file can be used in the following ways:
```
ant -f configure-liberty-derby.xml admdatabases
```
Configures the databases for use with a MobileFirst Administration Services component
Configuration observations

• Surprisingly straightforward
• Great usability via provided sample scripts
• Samples sometimes difficult to locate (or remember where they are when you look for them again)
  – Some are shipped as files under MobileFirst installation directory
  – Some are downloaded from Knowledge Center
Deploying applications, applications, and adapters

Yes, applications twice
Three parts to a deployment

- Three parts and two destinations:
  - Application Server
    - WAR file from MobileFirst Studio
      - In WAS terms, this is an Application
    - Again, Ant sample can be used to do this
  - MobileFirst Operations Console
    - MobileFirst applications (*.wlapp)
    - MobileFirst adapters (*.adapter)
MobileFirst Operations Console

IBM MobileFirst Platform Operations Console

Home > egui

egui runtime environment
Click a link to manage specific areas of this runtime environment

Deploy Application or Adapter
Select a file with the "wlapp" or "adapter" extension

Applications (1)  Adapters (3)  Devices (0)  Push Notifications
Client Log Profiles  Error Log  License Tracking  Download Audit Log

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Configuring WebSphere Application Server (T-WAS) is easier ... but slower
Deploying in T-WAS

- Web-based panels (Administration Console) replace Ant tasks for deploying WAR file

- Exact interaction with these panels well-documented in MobileFirst KnowledgeCenter

- Click .. Click … Click …

http://www-01.ibm.com/support/knowledgecenter/SSHS8R_7.0.0/com.ibm.worklight.deploy.doc/admin/t_configuring_websphere_application_server_manually.html
WebSphere Application Server Observations

• Because T-WAS is more interactive, takes longer to complete, etc. it has protected me from me much better.
  – I have perfected the Liberty install because I have broken things on more than one occasion
Future Mobile Considerations

• Infrastructure
  – WebSphere Liberty z/OS Connect
  – MobileFirst in the cloud via BlueMix
  – Highly-available Mobile First Server implementation
  – Create maintenance/service procedures

These are Matt’s thoughts. They do not represent any commitments, and I haven’t discussed all items with my team … although I expect to hear from them once they read this. ;>
Additional details

- Additional details are available on zPET’s developerWorks blog:
  https://www.ibm.com/developerworks/community/groups/community/zpet

  - Installation commands and output
  - How we are driving virtual devices
  - Future
    - Configuration steps during MobileFirst Server installation
    - Installing and configuring DB2 Workgroup Server Edition
Questions

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