IBM Power Development Platform

Setup guide for the IBM Industry Application Platform

David Carew IT Architect,
IBM Corporation

IBM Systems ISV Business Strategy
Jan, 2014

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Abstract

This document explains how to install and configure the IBM Industry application platform on the IBM Power Development Platform (PDP). Specifically, it shows you how to install this preconfigured instance of IBM WebSphere application server (or WebSphere MQ) on an IBM AIX operating-system image for development, testing and validation purposes.

Introduction

The IBM® Industry application platform is a preconfigured instance of IBM WebSphere® application server, IBM DB2® and WebSphere MQ that is available for your IBM AIX® 7.1 and AIX® 6.1 operating-system images on the IBM Power Development Platform (PDP). You can use PDP to develop, test and validate applications by using these products. After reserving your PDP partition, which includes choosing the hardware configuration and operating system, install the IBM Industry application platform on that partition.

The IBM Industry application platform contains the following software components:

- WebSphere application server v7.0.0.13
- DB2 Workgroup server edition 9.7.3a
- WebSphere MQ 7.0.1.3
- IBM Rational® agent controller v8.3

WebSphere application server 7.0.0.13

For WebSphere application server 7.0.0.13, the IBM Industry application platform product configuration includes the following settings:

Server profile created: A stand-alone WebSphere application server profile has been created and is started for you during the initialization of the image.

WebSphere Security enabled: WebSphere application server security is enabled, with the *virtuser* user ID serving as the WebSphere application server administrator ID. During the initialization of the IBM Industry application platform, you are required to set the password for the *virtuser* ID.

Sample Application: WebSphere application server is preconfigured with the “DayTrader” application, a sample application that uses WebSphere application server, DB2 and WebSphere MQ.

Rational agent controller started: Rational agent controller v8.3 is started to enable remote access to the WebSphere application server profile in the image. Developers can use Rational application developer v8.0, Rational application developer v7.5., Rational Software Architect v8.0, or Rational Software Architect v7.5 integrated development environments (IDEs) on their local machines and deploy, test and debug their WebSphere application server programs on the PDP image. This offloads much of the work from your local machine and still gives you seamless access to the application server in the PDP image. The IDEs, in concert with rational agent controller, automatically transports and installs your IDE applications on the application server that runs in the image whenever you make changes to the applications. You can also test, debug and profile the application performance from directly inside the IDEs.

DB2 WorkGroup Server Edition 9.7.3a

For DB2 WorkGroup Server Edition 9.7.3a, the IBM Industry application platform product configuration includes the following settings:

DB2 instance created: An instance with user ID `db2inst1` is created for you. During the initialization of the image, you are required to set the password for the `db2inst1` user ID.

DB2 database created: A database named DAYTRADR is created for the DayTrader sample application.

WebSphere MQ 7.0.1.3

Default queue manager created: A queue manager named **iap.queue.manager** has been created for you and is started during image initialization.

Queues and topics created: Queues and topics for the DayTrader application are created for you.

Installation

The following section provides details about installing the IBM Industry application platform.

Installation prerequisites

The IBM Industry application platform requires AIX 6.1 or AIX 7.1 with a 64-bit kernel on IBM POWER7™ processor-based hardware. The installation script terminates with an error message if these requirements are not met.

Installing the IBM Industry application platform on AIX

Follow the steps listed next to install the IBM Industry application platform on your AIX system. These are intended as reference only, so you must verify that they are appropriate for your setup:

1. Become root by entering the following command:

   $ su–

2. Run the following installation command:

   # /stage/middleware/IndustryFrameworks/iap/setup.sh

1 Create a password for *virtuser*. This user is used to start and stop WebSphere application server and WebSphere MQ. When prompted by the script, enter a password for the virtuser user and then verify the password. You need to remember this password so that you can manage WebSphere application server and WebSphere MQ.

2 Create a password for the DB2 users *db2inst1*, *dasusr1* and *db2fenc1*. The DB2 instance creates these users and, for convenience, they are set to the same password that you create.

3 When prompted by the script, enter a password for these users and then verify the password. Remember this password so that you can connect to DB2 and can perform DB2 System Administration tasks. The script runs for several minutes. Wait for a completion message, such as the one shown in Figure 1 before continuing:

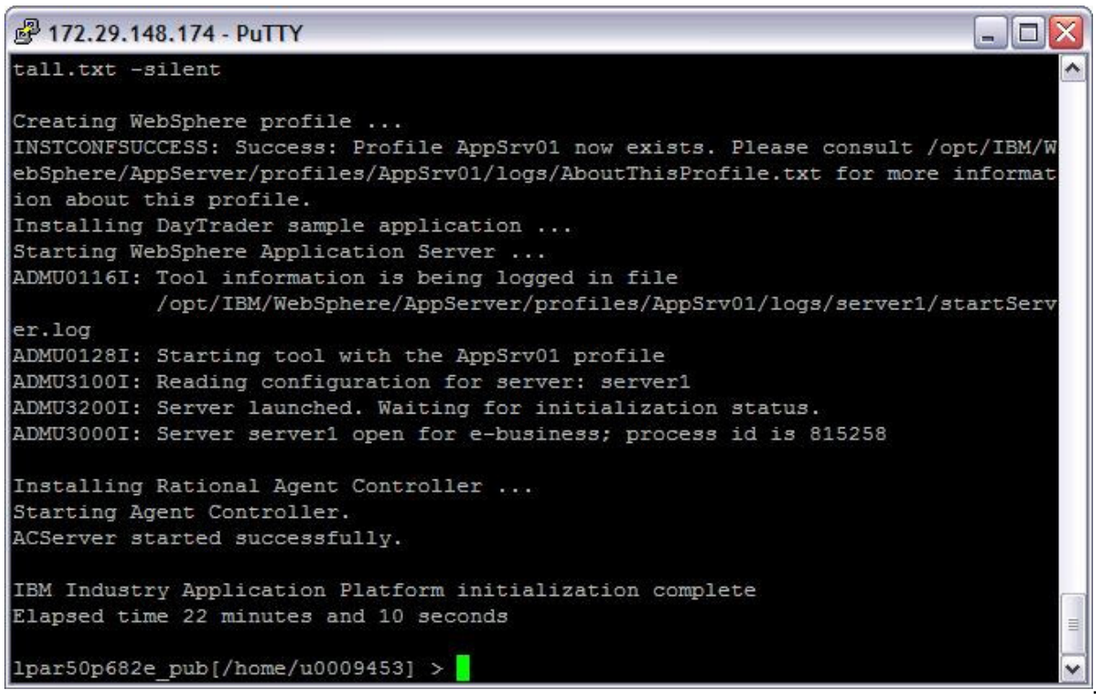

Figure 1. Completion message

Verifying the installation

After the installation has been completed, you can access the DayTrader sample application. DayTrader is an end-to-end Web application that is modeled after an online stock brokerage.

DayTrader uses Java™ 2 Platform, Enterprise Edition (J2EE) components such as servlets, JavaServer Pages (JSP) files, Java Persistence API (JPA) entities, enterprise beans, message-driven beans (MDBs) and Java Database Connectivity (JDBC) to provide a set of user services such as login and logout, stock quotes, buy, sell, account details, and so on through standards-based HTTP and Web-services protocols.

1. To start using DayTrader, access the following URL from your browser:

   http://<PDP-image-ip-address>:9080/daytrader

2. Click **Configuration**, as shown in Figure 2:

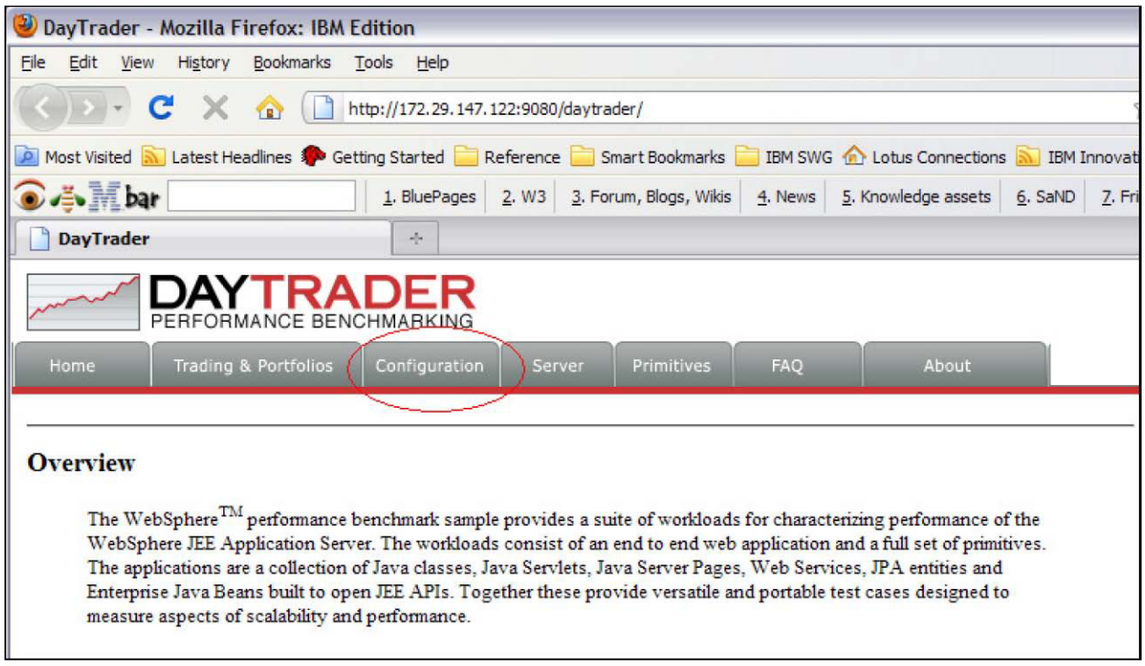

Figure 2. Clicking the Configuration tab

3. Click **(Re)-populate DayTrader Database**, as shown in Figure 3:

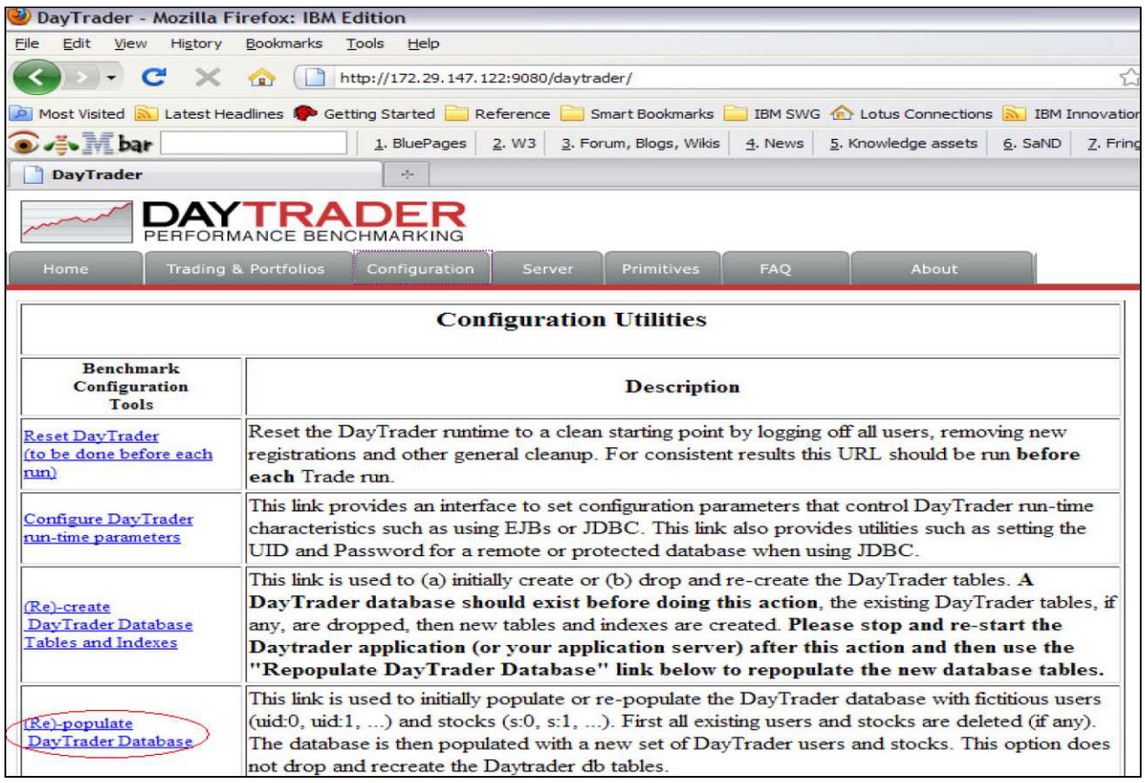

Figure 3. Repopulating the DayTrader database

4. Wait for the confirmation that 200 users were created, as shown in Figure 4:

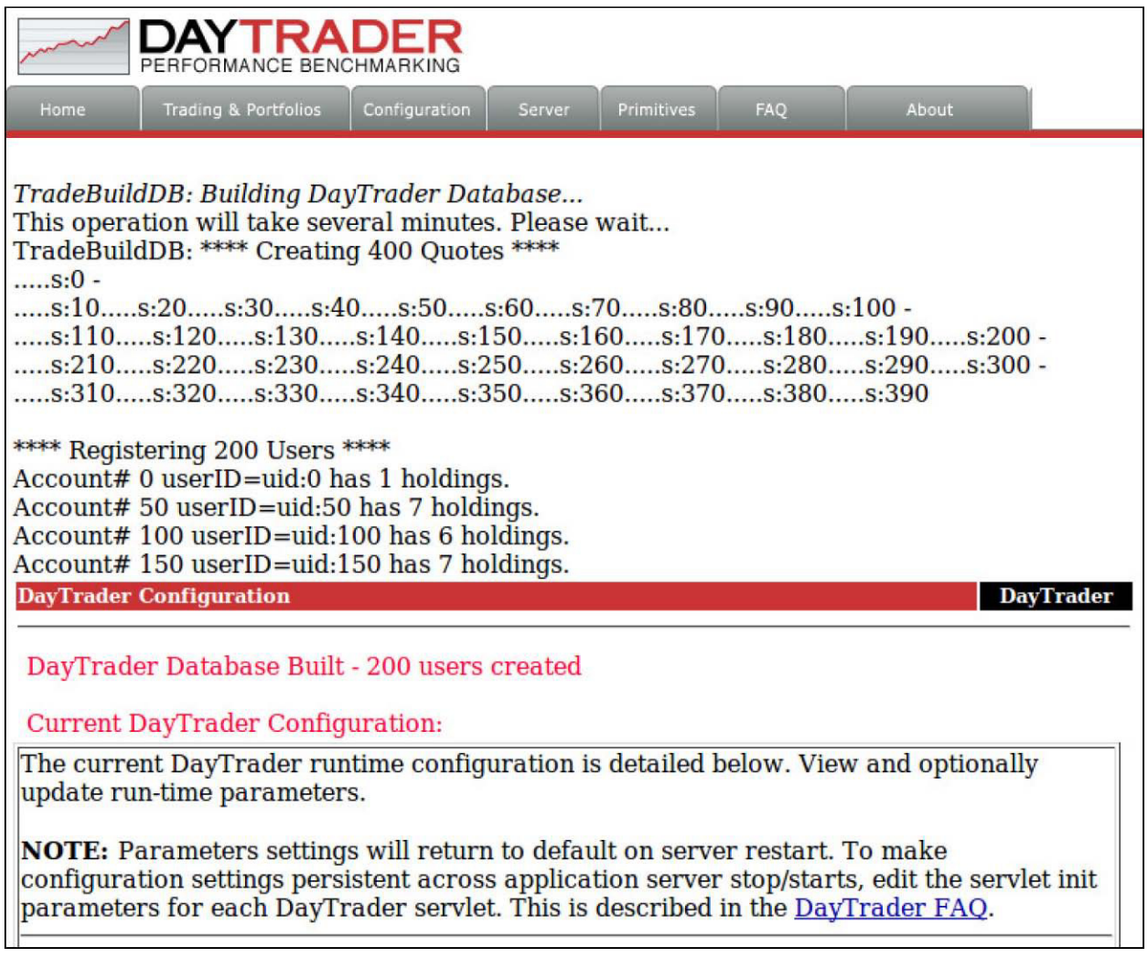

Figure 4. Waiting for confirmation

5. If you click the **Trading & Portfolios** tab, you can simulate the trading of stocks. The primitives tab has a series of operations that you can use as the basis for performance tests and to exercise certain parts of the applications (for example, message-driven beans). The FAQ tab has general information about running DayTrader and the configuration tab has various settings that can be changed.

Working with the IBM Industry application platform

The following sections include useful information for working with the IBM Industry application platform.

File-system locations

The products in the IBM Industry application platform are located in the directories listed in Table 1:

Item	Location
WebSphere Application Server 7.0.0.13	/opt/IBM/WebSphere/AppServer
Application server profile (http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/welcappservers.html)	/opt/IBM/WebSphere/AppServer/profiles/AppSrv01
Update Installer (http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.installation.base.doc/info/aes/ae/tins_ptfLevels.html)	/opt/IBM/WebSphere/AppServer/UpdateInstaller
Rational Agent Controller 8.3	/opt/IBM/SDP/AgentController

Table 1. WebSphere application server 7.0.0.13 directories

	Location
DB2 Workgroup Server Edition v9.7.3a	/opt/IBM/db2/V9.7
Instance home	/home/db2inst1

Table 2. DB2 Workgroup Server Edition v9.7.3a directories

	Location
WebSphere MQ v7.0.1.3	/opt/mqm

Table 3. WebSphere MQ V7.0.1.3 directories

Starting and stopping WebSphere application server

Use the administrative console (http://<PDP-image-ip-address>:9060/ibm/console) or the startServer.sh and stopServer.sh shell scripts, respectively, to start and stop the application-server profile.

- Open a Secure Shell (SSH) session and enter the following to start the application-server profile:

  $ su -virtuser $ /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin/startServer.sh server1
- To stop the applicationserver profile, enter the following code:

  $ su -virtuser $ /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/bin/stopServer.sh server1
- To start the Rational Agent Controller, enter the following as root:

  $ /opt/IBM/SDP/AgentController/RACStart.sh
- To stop the Rational Agent Controller, enter the following as root:

  $ /opt/IBM/SDP/AgentController/RACStop.sh

Important: With the stopServer.sh script, you must specify the administrative user, *virtuser*, and the password that you provided when installing the IBM Industry application platform

Starting and stopping the WebSphere MQ default queue manager

The WebSphere MQ default queue manager (iap.queue.manager) is started when the IBM Industry ApplicationPlatform is installed.

- Open a secure-shell session and enter the following to start the default queue manager:

  $ su -virtuser
  $ strmqm

- To stop the default queue manager, enter:

  $ su -virtuser $ endmqm -i
  iap.queue.manager

Starting and stopping the DB2 Workgroup server edition Instance

The DB2 Workgroup Server Edition instance (db2inst1) is started when the IBM Industry application platform is installed.

- Open a secure-shell session and enter the following to start the DB2 Workgroup Server instance:

  $ su -db2inst1
  $ db2start

- To stop the DB2 Workgroup Server Edition instance, enter:

  $ su -db2inst1
  $ db2stop

Network ports

Table 4 is a list of ports that are used for external access to the products in the IBM Industry application platform. This information is useful if you have to navigate through one or more firewalls to get to the PDP image that is running on the IBM Industry application platform.

	Description
50000	Port used for external access to DB2 instance
1414	Port used for external access to the WebSphere MQ default queue manager
9080	Default HTTP port for the WebSphere Application Server instance
9043	Default HTTPS administrative port for the WebSphere Application Server instance
9060	Default HTTP administrative port for the WebSphere Application Server instance
8880	Default SOAP port for the WebSphere Application Server instance used for remote administration
10002	Port used for external access to Rational Agent Controller
10003	Port used for external access to Rational Agent Controller
10005	Port used for external access to Rational Agent Controller

Table 4. Ports used for external access to products in the IBM Industry application platform

Using rational development tools with WebSphere application server

Users can use locally installed versions of rational application developer or Rational Software Architect to deploy, test and debug applications running on the instance of WebSphere Application

Server that is included with the IBM Industry application platform. Within Rational application developer and Rational Software Architect, create a new server with the following properties:

- **Server host name:** IP address of your PDP image
- **Server type:** IBM WebSphere application server v7.0
- **Server name:** Default value
- **Server runtime environment:** Default value
- **Server connection types and administrative ports:** Manually provide connection settings
  - **Connection Type:** RMI
  - **Port:** 2809
- **Security is enabled on this server:** Selected
- Current active authentication settings
  - **User ID:** virtuser
  - **Password:** Password that you define when the installation script for the IBM Industry application platform runs
- **Application server name:** server1

Note: This procedure assumes that you have successfully connected your system that runs rational application developer and Rational Software Architect to your PDP image by using the appropriate VPN client.

Applying fixes to the embedded products

Information about applying fixes to the various products in the IBM Industry application platform is listed below.

WebSphere application server v7.0.0.13 can be serviced on the PDP instance of the IBM Industry application platform just like other native installation of this software. Corrective service packages, such as interim fixes (which address a particular product issue) or fix packs (which are regular, cumulative roll-ups of interim fixes into a single installable unit) are available to be downloaded from IBM support for WebSphere application server v7.0.

From this site, you can search by using problem symptoms and receive information on IBM Technotes, IBM Redbooks® and fixes that might address your problem.

WebSphere MQ v7.0.1.3 can be serviced on the PDP instance of the IBM Industry application platform just like other native installation of this software. Corrective service packages, such as interim fixes or fix packs are available to be downloaded from IBM support for WebSphere MQ v7.0. From this site, you can search using problem symptoms and receive information on technotes, Redbooks and fixes that might address your problem.

DB2 Workgroup Server Edition v9.7.3a can be serviced on the PDP instance of the IBM Industry application platform just like other native installation of this software. Corrective service packages, such as interim fixes or fix packs are available to be downloaded from IBM support for DB2 Workgroup Server Edition 9.7.3a. From this site, you can search using problem symptoms and receive information on technotes, Redbooks and fixes that might address your problem.

Summary

This document discusses the process of installing and configuring the IBM Industry application platform on PDP. There was a discussion of how to install this preconfigured instance of IBM WebSphere application server (or WebSphere MQ) on an AIX image for development, testing and validation purposes.

Resources

These web sites provide useful references to supplement the information contained in this document:

- IBM Power Systems Information Center http://publib.boulder.ibm.com/infocenter/pseries/index.jsp
- IBM Power Systems on IBM PartnerWorld® **ibm.com**/partnerworld/systems/p
- AIX on IBM PartnerWorld® **ibm.com**/partnerworld/aix
- IBM Systems on IBM PartnerWorld® **ibm.com**/partnerworld/systems
- IBM Publications Center www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US
- IBM Redbooks® **ibm.com**/redbooks
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- PDP-SAC User Guide **ibm.com**/partnerworld/wps/static/pdf/PDP_sac_uguide.pdf
- PDP How-to Web page with tutorials and documents **ibm.com**/partnerworld/wps/pub/systems/PDP/howto
- Software Mall -IBM Software Access Catalog

ibm.com/partnerworld/wps/pub/overview/B7000

- IBM DB2 Workgroup Server Edition v9.7 Information Center http://publib.boulder.ibm.com/infocenter/db2luw/v9r7/index.jsp
- IBM WebSphere MQ v7 Information Center http://publib.boulder.ibm.com/infocenter/wmqv7/v7r0/index.jsp
- IBM WebSphere ApplicationServer v7 Information Center http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.base.doc/info/aes/ae/welcome_base.html

About the author

David Carew is a senior IT Architect for IBM ISV and Developer Relations in Austin, Texas, providing education, enablement, and consulting to IBM Business Partners.

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